AMENITIES & RURAL DEVELOPMENT

JUNE 18 & 19, 2004

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AMENITIES AND RURAL DEVELOPMENT

Madison, Wisconsin
June 18-19, 2004

Friday, June 18

8:00 a.m. Breakfast

9:00 a.m. Introductions and Agenda for the Conference

9:30 a.m. The Supply of and Demand for Natural Amenities: Theory and Concepts

The Supply of Natural Amenities: Moving from Empirical Anecdotes to a Theoretical Basis by David Marquiller and Greg Clendenning

Recreation and Amenity Migration in Urban Proximate Areas by Kenneth M. Johnson and Susan Stewart


Resident-Employed Photography as a Tool for Understanding Attachment to High Amenity Places by Richard Stedman, Tom Beckley, Marke Ambard, and Sara Wallace

Discussant: Thomas Power

Noon Lunch

1:00 p.m. Methods and Empirical Research on Amenity-Led Development

Out-Migration from the Northeast U.S.: The Roles of Economic and Amenity Differentials by Martin Shields, Stephan J. Goetz, and Quiyan Wang

Seasonal Residents: Members of Community or Part of the Scenery? by Greg Clendenning and Donald R. Field

The Role of Wilderness and Public Land Amenities in Explaining Migration and Rural Development in the Northwest by Gundars Rudzitis, John Hintz and Christy Dearien

3:00 p.m. Break
3:15 p.m.  Methods and Empirical Research on Amenity-Led Development (Continued)

Analyzing the Relationship Between Amenities and Change in the Well-Being of Nonmetropolitan Localities by W. Richard Goe and Gary Paul Green

The Varied Impact of Greenways on Residential Property Values in Urban vs. Rural Areas: The Case of the Catawba Regional Trail by Darla Munroe and Harrison Campbell

Impact of Outdoor Recreation Facilities on Rural Economic Growth by J.C. Dissart and David Marcouiller

Discussant:  Steven Deller
Dinner:  Barbecue

Saturday, June 19

8:00 a.m.  Breakfast

9:00 a.m.  Public Policy Issues

Rural Amenities Policies: What Challenges for the Future? by Jean-Eudes Beuret and Marie-Christine Kovacszazy

Evaluating the Effectiveness of Land-Use Planning Policies in Rapidly Growing High-Amenity Communities in the Rocky Mountain States by Michael Smith and Lisa Spadoni

Landowner Attitudes toward Planning in Northwestern Wisconsin: Implications for Managing Growth and Development in a Natural Amenity Rich Region by Dana Jensen

Raising the Gangplank: A Defense of Localism Aimed at Resource Protection by Eric Olson

Agri-Environmental Contracts and Equity: Are they Compatible for the Supply of Rural Amenities? by Camau Jacqueline, Deuffic Philippe, Ferrari Sylvio, Lewis Nathalie, and Rambonilaza Mbolatiana

Amenity-Led Development of Rural Areas: The Example of the Regional Action Pilot Programme in Germany by Karlheinz Knickel and Sarah Peter

Discussant:  Joan Brehm
Noon  Lunch
1:00 p.m.  Research agenda and future directions
Dinner:  On Your Own at Local Restaurant

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The Supply of Natural Amenities: Moving from Empirical Anecdotes to a Theoretical Basis

Dave Marcouiller and Greg Clendenning*

Written for presentation at the USDA NRI Funded Conference on Amenities and Rural Development, June 18-19, 2004 in Madison, WI

Abstract: Although a significant amount of empirical research makes linkages between natural amenities and developmental attributes within the context of rural change, there has yet to be forwarded a defensible, comprehensive, and explanatory theoretical construct upon which to better understand the presence, use, and production of natural amenities within the context of development. Key unique attributes of natural amenity resources identify short-term issues of irreversibility, non-productibility, and non-tradability. Given alternative temporal specification, however, our ability to manipulate, produce, and utilize natural amenities is obvious, albeit indirect. How does resource management affect the presence and quality of natural amenity resources? How compatible are amenity resources with jointly produced market-based natural resource outputs? How are natural amenities used to produce tourism? What is the relevant set of externalities involved in supplying natural amenity resources? Upon what theoretical basis do we develop public policy that acts to alter regional natural amenity resources? These are the key questions addressed in this manuscript that provide a theoretical basis for characterizing the supply of amenities and their use in affecting rural economic change. In developing a consistent and robust set of amenity supply concepts, we provide an interdisciplinary basis to substantiate a theory of the post-productivist countryside thus allowing a more complete understanding of amenity-based development phenomena.

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I. Introduction

Natural resources continue to play an important role in defining the structure and viability of rural communities across North America. Historically, natural resources have provided location-specific advantages for communities at various stages of their development. In early stages, extractive industries (farming, forestry, mining, and fishing) utilized resources as physical raw materials for processed goods thus creating plentiful and relatively high-paying job opportunities. As communities mature developmentally, traditional dependencies have given way to alternative foundations. In essence, many rural communities have experienced a paradigmatic shift in perceptions of what makes up a natural resource endowment and the manner in which natural resources are utilized.

Several forces have come together to fundamentally alter the manner in which natural resources act as engines of economic growth. With the exception of oil production, international competition has led resource extractive industries of the U.S. to lose their price competitiveness in world commodity markets (Freudenburg 1992; Weber 1995; Pulver 1995; Glaston and Baehler 1995). Also, economic restructuring of the American economy toward a service base has significantly tempered the importance of physical raw materials inputs for production of manufactured goods (Bluestone and Harrison 1982; Chevan and Stokes 2000). Finally, environmental awareness and political activism of urban audiences have provided strong criticism of extractive production practices by emphasizing adverse environmental impacts, threats to biodiversity and sustainability, and global environmental change (Castle 1993; Buttel 1995).

These regional resource and development issues have forced a reexamination of the uses and management of natural resources; particularly publicly owned land-based resources such as forests and water resources. Since the late 1960s, natural resource management has broadened its focus to embrace non-extractive environmentally sensitive land management practices that reflect broader non-market values (Floyd 2002; Macie and Hermansen 2002; Hays 1998; Power 1996). Natural amenity-rich
communities have become aware that natural resources provide not only a source of physical raw material commodities but can also serve as a source of recreational use that provides a backdrop for tourism development and “new-age” rural economic development (Isserman 2000; Green 2001).

Rural communities across the United States have been experiencing dramatic demographic, social and economic transformations. Many rural regions have experienced demographic change and population growth due to in-migration of predominantly urban residents who are leaving the city for the countryside. Today, fewer communities are dependent upon traditional resource-based rural industries, such as mining, agriculture, or timber production (see Cook and Mizer 1994, Halfacree and Boyle 1998, Johnson and Fuguit 2000, Krannich and Zollinger 1997, Marcouiller and Green 2000, Power 1996). In place of traditional resource extraction, new forms of development involving recreation, tourism, retirement migration, footloose professional services, and other activities linked to natural resource amenities have evolved. Areas experiencing such changes and population growth are often characterized by their high resource amenity values, meaning that they are rich in scenic and recreation qualities such as mountains, forests, warm climates, and/or proximity to water.

Demographers and other social scientists theorize that several factors are at work in this migratory trend, including:

- The increased importance of non-market locational and migration factors for individuals and firms, including environmental factors and other amenities;
- A more diverse employment structure that exists in suburban and rural counties, including less emphasis on resource extraction;
- Diminution of economic space: Innovations and improvements in transportation and communication that has diminished the “friction of distance,” thereby giving firms and individuals more locational flexibility;
- American’s preferences for living and working in low-density frontier settings.


Conceptually, natural amenities are clearly thought to provide an integral component of recreation, tourism, amenity migration, and retirement development (Fredrick 1993; Keith and Fawson 1995; Jakus et al. 1995; Keith et al. 1996; Marcouiller 1997; McDonough et al. 1999). They provide the substantive but latent primary factor input into tourism industry output (Marcouiller 1998). As a quality-of-life factor, they are believed to play a critical role in human migration and firm location decisions (Beyers and Lindahl 1996; Beyers and Nelson 2000; Graves 1979, 1980, 1983; Gotlieb 1994). Rudzišs and Johansen (1991) were among the first to suggest that the presence of wilderness and large expanses of open space were an important reason why people moved to or lived in remote rural counties.

Empirical analysis of exurban growth in the western United States has found that not only is population growth linked to natural amenities, but so too is economic restructuring and economic well-being (see Shumway and Otterstrom 2001, Smutny 2002). The economies of amenity rich counties are shifting away from dependence upon resource extraction to service and high-technology-based economies. For example, Shumway and Otterstrom (2001) found that counties rich in natural amenities experienced dramatic increases in employment in a broad range of service sub-sectors, such as health care, personal services, recreation and entertainment but also export oriented product and professional services. In addition, those migrating to amenity rich
counties tended to have higher incomes and brought with them new skills, resources and sometimes employment opportunities as they established new businesses. Counties with the lowest population growth, lowest median incomes, lowest income of in-migrant residents, and lowest level of job growth were those remaining dependent upon farming.

There is a growing empirical literature on the regional economic consequences of amenity-based development. Early studies examined the effects of amenities on migration, housing location decision, and individual welfare. Graves (1979, 1980, 1983) and Knapp and Graves (1989) found that location-specific amenities such as climate were significant in explaining population migration. Porell (1982) showed that both economic and amenity factors were important determinants of migration. Reback (1982, 1988) found that while improving the quality of life, amenity variables might lower wages and increase housing rents. Hoehn et al. (1987) found statistical differences in housing prices and wages due to location-specific amenities. Deller and Tsai (1999), building on the work of Blanchflower and Oswald (1996) argued that amenity variables can influence levels of local unemployment. The early studies, however, employed climate, crime, or congestion, but lacked a focus on natural resource amenities.

Empirical studies suggest that natural amenities impact regional economies through aggregate measures of economic performance such as population growth, income growth, employment growth, and housing development. Assessing the developmental aspects of amenity-led regional change, however, requires a more thorough focus on alternative measures of economic performance such as income distribution and spatial organization (Marcouiller, Kim, and Deller 2004). In some cases population growth and local economic restructuring has lead to higher income inequality and has raised concerns about housing affordability and general economic dislocation for many long-time residents (ibid; Beyers and Nelson 2000, Shumway and Otterstrom 2001, Smutny 2002). Results suggest mixed amenity-based associations; namely that different amenity types affect growth and development in different ways.

Thus, not only are people and economic resources concentrating in amenity rich areas in comparison to other rural areas, amenity regions are experiencing economic growth and structural economic change. Rural areas in the mountain West are dividing into high amenity and high income counties and less favored areas (Shumway and Otterstrom 2001). Similarly, Smutny (2002) found that growth in Idaho counties was closely associated with natural amenity endowments and was largely due to not only tourism but also high technology capital investment. Smutny (2002) suggests that with advances in telecommunication and transportation infrastructure, technological capital is highly mobile and increasingly locates to what were once remote, amenity rich areas of the country. Beyers and Lindahl (1996) found similar patterns in rural areas across the United States where rural producer firms (such as computer programmers, investment advisors and managing consultants) are expanding rapidly in amenity rich rural areas. Owners of these firms explicitly identify environmental quality and quality of life in their decisions to relocate home and business to rural settings.

Thus, natural amenities are linked not only to recreation and tourism but to the migration of individuals and firms across a broad spectrum of the service sector. A strategy to manage for and produce amenities may have economic benefits beyond increased numbers of tourists and recreational homeowners but also involve other parts of the service sector. Contemporary resource management practice and rural development planning increasingly emphasize the integration of raw material production with non-market-based recreational and amenity values.

The natural amenity driven rural development linkage has much for academics to discuss, conceptualize, and discover. In the realm of economics, one area that remains relatively unexplored is the conceptual basis for provision of amenities and their role in development. While empirical relationships between natural amenities and economic growth exist, there is a dearth of thinking with respect to the microeconomics of joint production and “additivity” with respect to non-market natural amenity inputs. For example, while widely reported to be an industry, the tourism phenomenon lacks a defensible and integrative production function that provides the
basis for contemporary supply assessments with multi-product raw material outputs. How compatible are amenity resources with jointly produced market-based natural resource outputs and how are natural amenities used to produce tourism? What is the relevant set of externalities involved in supplying natural amenity resources? Furthermore, how can we characterize the regional economic “production” influence of retirement migration, high technology capital shifts, or the impending impact of telecommunication and telecommuting on structural community economic change?

In the realm of resource management, a related set of questions has to do with how amenities themselves are produced. Are we satisfied with the notion that natural amenities serve as a static “endowment” or are there dynamic aspects that allow us to consider tacit actions, management strategies, and/or public policies that act to “produce” natural amenities? While great effort is expended to understand the physical and biological aspects of natural resource production (e.g. agronomy, silviculture, and geologic/hydrologic engineering), characteristics related to its simple recognition as an amenity resource are left wanting. In addition to being a central issue of resource management, this question provides the basis for analysis of the role amenities play in development. Specifically, how does resource management affect the presence and quality of natural amenity resources? Upon what theoretical basis do we develop public policy that acts to alter regional natural amenity resources?

These unanswered questions provide the basis for concepts discussed in this manuscript which is organized into four subsequent sections. First, we outline the temporal context needed to address natural resources as amenities. The next section provides a critique of phenomenological characteristics commonly associated with natural amenities. We follow this with a discussion of a conceptual approach for amenity production theory. We conclude with a discussion of general theoretical limitations, public policy implications, and further research needs.

II. The temporal aspect of amenities

Natural resources such as forests, prairies, lakes, and rivers – indeed, much of the American landscape – has been transformed from its original natural state to its present condition by human activity. Until recently, this activity of transformation was driven first by subsistence and then by market-based production of tangible commodities for consumption with primary motivating factors centered on the generation of income. What exists today in terms of a community’s natural resource endowment is largely the product of what’s left-over from previous productive activities.²

Amenity values build on this current natural resource base and exist as a demand component of latter, more mature stages of economic development. These values, driven largely by changing demands and affluence, can be stimulated by efforts to conserve natural resource endowments, conscious planning to develop recreational sites, and attempts to capture perceptions through marketing. Furthermore, our future value for amenities is equally dynamic and can be expected to continue to change over time. What we value today as an amenity, we valued differently yesterday and we can expect to value differently tomorrow.

The dynamic nature of amenities can be linked to several developmental attributes. Over time, infrastructure has allowed us to become much more mobile. Furthermore, time has allowed us to progress into more mature economic conditions that shift the relative importance of natural resource dependence away from use of natural resources as physical production inputs (raw materials) to more of an amenity basis. These changing natural resource dependencies follow the accumulation of wealth and disposable income and represent a progression in developmental stages (Miller 1998).

Examples of this transition can be found throughout both rural and urban North America. Take, for instance, the Lake States forests of Minnesota, Wisconsin, and Michigan. During the late 1800’s and early 1900’s, the vast majority of these forests were harvested with little consideration for amenity uses, ecosystem function, or future
value. The harvested timber was processed and sold to build the great Midwestern cities of Minneapolis, Milwaukee, Chicago, Detroit, Kansas City, and St. Louis. Lands once rich in virgin forests were wholly cut over and residually burned with the most productive sites converted to agricultural production. The use value of these forests in early stages of economic development was easily measured in production-oriented price-quantity terms (volume of timber multiplied by market-determined price).

At the time, amenity values held for these forests were, at best, modest relative to the direct use values associate with trees for timber. At worst, the amenity value of these forests was nonexistent. Today, however, there has been a dramatic shift in value types and joint productive processes. Although a vibrant wood products industry remains and continues to draw on significant timber volumes from second and third growth forests, the indirect use values of forested landscapes (a jointly produced output) now supports a vibrant tourism industry and second home economy that dominates many communities throughout this region. Also, these forest-based amenity values now play a significant role in determining how forest management practices are applied to forested lands. Managers can no longer afford to manage for solely outputs like timber and are increasingly forced to recognize tradeoffs associated with a multi-product joint process of generating outputs. This natural landscape exists today in a highly transformed state originally driven by production-oriented human activities.

In addition to the stage of economic development, transitions to consumption of natural amenities often require an initial input of some productive factor that allows an awareness of the resource. There is a temporal aspect to these inputs that relate to the use of resources as a production input. For instance, the development of infrastructure (highways) for travel to amenity-rich regions and recreational site developments that facilitate amenity resource use play important roles in determining overall amenity value. Without infrastructure, the amenity's overall economic value is diminished as few people are aware of and decide to utilize amenity-based resources. A continued public investment in infrastructure serves both the purpose of production (access to markets and raw materials) and amenity access.

Characteristics of amenities

Amenities are unique from other regional factors of production. Their uniqueness can be summarized along four basic lines that represent fundamental characteristics of amenities (Green 2001; Power 1988, 1996). These include the notion that amenities tend to be (1) non-producible, (2) irreversible, (3) subject to high income elasticity of demand, and (4) regionally non-tradeable. Each of these will be discussed and critiqued in-turn.

Non-producibility

Amenities, particularly natural amenities, are difficult to produce. The supply of natural amenities tends to be restricted in an absolute sense. It is very difficult to recreate events that lead to natural amenity change in the short-term. Thus, it is typically not feasible to produce natural amenities. Attempts to produce natural amenities are often limited to gradual, or incremental, transformations of the existing resource endowment.

This said, there are mechanisms that can be used to increase the regional capture of amenity values. For example, resource management practices that are sensitive to the effects of resource use on amenity values have the opportunity to affect amenity outcomes. Further, amenities are in effect produced with the creation of public parks, forests and other forms of open space. For example, the growth of gateway communities adjacent to National Parks and other public lands is directly attributed to the presence of the neighboring park (Howe, McMahon and Probst 1997; Rothman 2000; Marcouiller, Olsen, and Prey 2002). In the case of Cape Cod National Seashore, the designation of the Seashore has lead to increased population growth and second home development precisely because of the guarantee of a preserved amenity, or the parlance of this paper, a produced amenity (Kornblum 2000). Growth and development in turn require more planning and management to preserve the amenity values. Kornblum (2000) describes this phenomenon well:
The very success of resource preservation and management on Cape Cod contributes to ongoing congestion and urbanization which, in turn, requires continued planning and management (p. 166).

In a similar manner, the literature is replete with examples documenting higher property values for lands adjacent to public lands in both rural and urban settings. A premium has been created by the public provision of an amenity, a guaranteed amenity, in the form of protected open space, in perpetuity (Klase and Guries 1999; Irwin 2002; Jackson 1985; Kim and Johnson 2002; Wu et al. 2004). In addition, as previously discussed, public investments in infrastructure allow regions to more fully utilize natural amenities. Public and private expenditures to develop recreational facilities and the forward-linked hospitality sector (retail and service sector businesses that cater to visitors) can also serve the purpose of more fully utilizing regional amenity endowments.

Irreversibility

Changes in natural systems occur over relatively long time frames; best measured in decades and centuries rather than months or years. Consequences of natural resource management decisions are difficult to ameliorate in the short-term. For example, a forest that experiences clear-felling will take several decades to re-grow to a point of comparable size and density where the characteristics important to amenity value are restored. Minerals mined from the ground are, in effect, nonrenewable within any reasonable human-based time frame. This said, attempts to reverse amenity-diminishing resource decisions in the short-term are possible but often at very high costs. An example would be mine reclamation, a common approach to restoring the function of land for ecosystem and/or amenity uses. This type of remediation is a costly endeavor and clearly identifies the short-term irreversible nature of amenities with respect to resource management decisions.

The level of irreversibility in natural resource decisions depends on the temporal aspects of resource renewability and the ability to commit rehabilitation effort and cost. Certainly, different types of natural resources can rejuvenate themselves at varying rates. We can generalize about the temporal spectrum of renewability. In general, those natural resources relying on geomorphology (plate tectonics, volcanism, soil building, etc.) as a regenerating mechanism are extremely slow. Here, we can talk about temporal frames measured in millennia or longer. On the other hand, those natural resources that rely on biomorphology (tree growth, wildlife production, prairie restoration, etc.) rejuvenate relatively fast. Temporal units here are on the order of decades or centuries. Human-created development of amenities would be the fastest, but, again the most costly.

However, it should be pointed out that many currently perceived natural amenity-rich areas, particularly in the South and Eastern regions of the United States were once heavily logged, cultivated or mined within a generation. The environmental historian Matlack notes that there is very little forestland in the entire eastern portion of the U.S. that has not been influenced in some way by human use (Matlack 1997). As noted earlier, the Northwoods of Wisconsin, Michigan and Minnesota were virtually cleared for timber and in turn farmed during the late 19th and early 20th centuries. Largely through the combination of tax reversion and subsequent federal and state management interventions and policies, such as county forests and shoreline zoning, the region is now valued for its forests, lakes and other amenities. A similar story is told by environmental historian Richard White in his history of land use and settlement of Island County, Washington (White 1980). Island County, which had been largely cleared by logging and for agriculture, has transitioned to become an area largely dependent upon tourism and second home developments. A number of local efforts helped lead to the transition, including the establishment of parks and reforestation efforts (White 1980).
High income elasticity of demand

Does the consumption of natural resources for amenity value depend on the relative wealth (or income) of individuals who make up the demand base? In other words, are amenity values representative of luxury goods? These questions would raise important public policy issues of both efficiency and equity. It is generally assumed that amenities can be characterized by income elasticities of demand (the percentage change in the quantity demanded of a good in response to a one percent change in income) that are greater than unity (McFadden & Leonard 1992). Empirical research has confirmed this theoretical basis. Thus, the demand for environmental goods as amenities increases more rapidly as income increases.

If demand for amenities is positively and strongly correlated with income level, then equity issues becomes important. From an equity perspective, arguments that focus on distributive aspects associated with tradeoffs are compelling. Given appropriate safeguards against environmental degradation, is it fair to tradeoff production of extractive marketed commodities that generate income to local residents regardless of income level for amenity-based outputs that are non-marketed? These non-marketed outputs disproportionately provide benefits to people of higher incomes who often reside outside of the local community. Indeed, the questions of “who benefits” and “who pays” is needed to extend aggregate cost-benefit analysis into a distributional realm. This said, introducing tradeoffs without a more critical assessment is naive. There is a growing literature that identifies compatibility of alternative land use as a primary empirical research target (Clawson 1974; VanKooten 1993). The literature suggests that different land uses will have varying levels of inter-use compatibility and the nature of management practice can have a significant effect on the outcome of land use tradeoffs.

Non-tradeability

Much like land itself, natural amenities exist as fixed assets of regions. For our purposes, this is primarily important from the standpoint of the mobility of amenities as a primary factor input. This notion of amenities as a primary factor input is a supply component of a region’s production capability. Amenities as fixed regional assets cannot be traded among regions. A consumer’s amenity value is linked to the region in which the amenities lie. Unlike capital or labor resources, a community is isolated from the amenity inputs of other regions but is in direct competition with other regions for people attracted to similar types of amenity resources. What exists in terms of regional amenity value can be considered fixed in the short-term. This supply characteristic of immobility holds for amenities as regional factors of production.

This immobility aspect of amenities is a supply characteristic. It breaks down as we consider demand characteristics of amenities. Certainly, one-way a region can enhance use of its amenity assets is through marketing itself to the outside world; or through affecting demand from the outside for regional amenity-based assets. In a similar fashion to non-amenity natural resource outputs (such as agricultural commodities or timber products), the level of demand for amenities can, and often is, affected through marketing to individuals and firms beyond the boundaries (or outside) of the region. Thus, we can view amenity demand in a similar fashion to commodities and raise the specter of natural amenities as export-based (or basic) goods. The trades that take place with amenities are now in the form of traveler demands, demands for recreational housing, as well as the demands by migrants and owners of small farms who are seeking out areas richly endowed with natural amenities. It is important to note, though, that it is the demand for the amenity that is affected through trade, not the supply of the amenity.

While we recognize that a generalized approach to amenities rests on irreversibility, non-producibility, high income elasticity of demand, and non-tradeability, our critique has pointed out obvious flaws in this traditional thinking. In particular, given progressive management and public policy interaction, it would be logical to assume that each of these characteristics is highly malleable. What is lacking is a conceptual perspective that provides us a robust and easily replicable basis upon which to forecast, understand, and address the supply of amenities. In essence, our
problem is to develop a defensible theory of amenity production. In developing a consistent and robust set of amenity supply concepts, we provide an interdisciplinary basis to substantiate a theory of the post-productivist countryside thus allowing a more complete understanding of the amenity-based development phenomena.

Outline of a theoretical basis

There has been a growing literature that makes a connection among environmental resources (e.g., forests, water resources, etc.), their management, and the presence of activities that utilize amenity resources. Many have written about the linkages between environmental resources and tourism (c.f. Plovan & Milani 1985; Weaver 1991). We face, however, a dearth of usable economic generalizations that allow us to make linkages between environmental costs and benefits resulting from alternative environmental resource management regimes and the productive processes reliant on amenity resources. For ease of discussion, let us consider the situation that exists in amenity-rich regions between the natural amenity resources, outdoor recreation, and the set of nature-based tourism-sensitive firms and migratory outcomes that are increasingly dominant within these economic structures.

In an effort to conceptualize this linkage more specifically, one would need to focus on alternative management regimes and develop a set of trade-offs that provide the basis for tourism experience. With reference to amenity production, this set of public and private good tradeoffs is outlined in Figure 1.

[Figure 1 about here]

Natural resources located in remote rural areas are often managed for multiple uses: traditional market-based extraction (e.g., agricultural, mineral, and/or silvicultural production) and non-market amenity uses (e.g., recreation). Within a policy context, particularly in environmental policy, these multiple uses have traditionally been presented as mutually exclusive: one cannot enjoy a recreational experience in a forest if it has been harvested. Under traditional management regimes this black-and-white depiction may have held true. But today, if we view the application of natural resource management as lying along a spectrum that varies from intensive (e.g., fencerow to fencerow agriculture, open-pit mining, short rotation silviculture for fiber production) to extensive (e.g., agro-forestry/community supported agriculture, highly regulated mining, longer rotation silviculture), we realize there to be differential combinations of market and non-market outputs. If we assume that the "output" from the resource is multi-dimensional we can model a trade-off between output levels across alternative management regimes. In essence, we can approach management from the standpoint of variable economic additivity.

The two-dimensional output stream can be characterized in terms of private (i.e., market) and public (i.e., non-market) goods. Under intensive single product management regimes the resource is used in the more extractive sense of commodity production (e.g., managing stands of trees to maximize fiber production). Output of the resource here is relatively easy to measure: the price of the commodity (corn) times the volume of the commodity harvested (yield of corn). Our traditional approach to modeling the economic impact of alternative resource management regimes has been to identify biological productive potentials for use as exogenous shocks to a static system. This approach, however, ignores the fact that there are public good (non-market) benefits flowing from the natural resource (as depicted in Figure 1 by the area below the diagonal line). These nature-based public goods provide the linkage to the production of recreational experiences (the tourism product).

Theoretical and Empirical Complexities

By explicitly recognizing the public good aspect of the resource, we see that a number of modeling problems become apparent. These difficulties can be summarized as including (1) the size of the box, (2) the base value of the public good under extreme intensive use (i.e., the value of the intercept on the Y-axis), (3) the shape of the top of the box, and (4) the amount of regionally exported public good (the level of the public good
that is consumed locally versus that which is used by in-coming tourists and/or migrants).

Perhaps the biggest challenge is estimating the dollar value of the public good flowing from natural resources. In other words, if the market-determined dollar value of the harvested timber resource is known, what then is the non-market value of a stand of trees for recreational purposes? The generalized form of this question has been one of the primary research problems undertaken by resource economists during the past 50 years. Methods developed include (1) revealed preference models (hedonic pricing and travel cost) and (2) stated preference models (contingent valuation). While a complete review of these methods is beyond the aim of this paper, there does exist a large body of research to draw upon (Bennett 1996; Bostedt and Mattsson 1995; Willis 1990). Unfortunately, while these methods can be complex and rigorous, there is little to suggest that the final estimated value of the non-market good will be robust across alternative methods used or regionalized in a comparable manner to use-driven market goods.

The second empirical problem is that of estimating the value of the non-market good under the most intensive resource management regimes. In Figure 1, it is explicitly assumed that there will always be some non-zero public goods value of the amenity resource. One could reasonable argue that immediately following a clear-felling operation, there is zero recreational value to the forest resource. In other words, in this case there is no positive intercept on the Y-axis. Today, however, silvicultural techniques have been applied that not only represent intensive timber production but also retain high levels of growing stock. For example, the Menominee Nation of Native Americans in Northern Wisconsin has adopted “legacy forest” silvicultural practices in which only trees of a certain diameter are selectively removed. The dollar value of the harvests are high as the largest trees comprise the highest value commodity and resultant price structure. Trees below some age/size threshold are left in place to continue growing. The Menominees represent an excellent example of how a forest can be intensively managed without sacrificing public goods values. In this type of intensive forest management, the intercept on the Y-axis would be significantly above zero.

The third issue is the shape of the top of the box. Given a square representation we assume that the sum of market and non-market values of the forest resource is fixed across all forest management regimes. Implicit in this assumption are two primary issues. The first reflects fixed prices with respect to market and non-market goods. Although internally consistent, recent evidence suggests that market and non-market prices fluctuate significantly. Casual observations of local price behavior in areas where national forests have shifted from one management regime to another suggest that prices are very sensitive to harvesting policy. Simple supply and demand theory predicts that as more forested land is removed from harvest, the supply of timber drops and prices increase. As increased acreage has been placed aside in extensive management regimes, the reduced supply causes increases in timber prices that motivate accelerated rates of harvesting on private forest lands. More difficult to track is the change in “willingness-to-pay” for a recreational experience as management regimes change. Currently, these recreational experiences exist as common-pool benefits and are thus non-priced to the recreating public. Certainly, tourism sector businesses in the region are currently not charged for recreational experiences requiring extensive management regimes. Ultimately, it is these experiences that provide a basis for tourism business receipts yet extensive management regimes create significant opportunity costs for owners of forest land.

The second issue with a square top is the assumption of neutral compatibility and its theoretical counterpart, constant additivity. Land use compatibility can range from complementary and supplementary to competitive and antagonistic. The manner in which alternative uses interact is summarized in Figure 2. Complementarity reflects decreasing marginal rates of substitution between alternative land uses. In essence, complementarity reflects the notion that one land use acts to stimulate the production of another land use. If the provision and market benefits (physical commodities) is
complementary with production of non-market benefits (amenities), then the top of the box will expand in a non-linear fashion.

Neutral compatibility is reflective of complementarity which is graphically presented in Figure 3. In essence, supplementary land uses exist when one land use does not impact (either positively or negatively) the other. The square top of the box shown in Figure 1 reflects complementarity of producing physical commodities and producing amenities.

Finally, strict competitive processes in land use can sometimes be considered antagonistic. Basically, antagonistic land use exists when any multi-product output completely reduces another. The production of amenities and its coexistence with production of physical commodities is generally will vary on this spectrum of compatibility. With respect to Figure 1, antagonistic multi-product land uses would cause the top of the box to contract in a non-linear fashion.

[Figures 2, 3, and 4 about here]

Environmental economists have developed a corresponding quantitative representation of this notion of compatibility in what is known as “additivity.” Using diversity as a basis, Weitzman (1992) recognized how a multivariate system relates to individual functions. In this work, alternative forms of additivity were defined. In what is termed supra-additivity, complementarity in utility is defined as increasing returns to utility by combining uses. Sub-additivity, on the other hand, occurs with alternative uses are substitutes and exist with decreasing returns to utility in their combination.

The fourth and final problem discussed here is the flow of non-market benefits that originate from the regional natural resource. Clearly, local residents benefit from the resource-driven public goods derived local quality-of-life. Many residents elect to live in these rural amenity-rich regions because they enjoy living in close proximity to nature, open space, and the “unregulated frontier”. Benefits to residents are significant but remain rather intangible. Tourism-sensitive businesses, on the other hand, are increasingly prevalent and profitable in amenity-rich communities. Non-resident travelers (tourists) visit these forested regions and spend considerable amounts of money in the local economy. Thus, relevant tourism production benefits would tend to be limited to the regional export-based portion of the public goods associated with environmental resource management.

Fundamental to this set of arguments is the simple notion that tourism-sensitive firms in natural-amenity-rich regions benefit from the quality and quantity of environmental resources present in the region. These amenities are created or heavily influenced through natural resource management and exist as positive externalities of the resource base. For example, in natural-amenity-rich regions the output of tourism goods and services relies on the forests, bucolic agricultural landscapes, lakes, and publicly provided recreational opportunities present in the region. It is unlikely that people travel to these regions solely due to the presence of excellent restaurants, or uniquely wonderful hotel beds (even though they may indeed exist). Rather, it is the natural amenity base available in the region that provides the basis for tourism sector output.

A Theoretical Basis to Policy

Managing for amenity qualities is a public policy choice that is no different from managing for timber or agricultural production. It is perhaps a rather dramatic shift in management priorities, but one that has broad support. For example, study after study has shown that the public increasingly values forests for wildland and amenity values rather than for production of timber and pulp. American society values its forests for recreation, habitat for wildlife, scenic vistas and protection of streams and water (Mather, 2002; Rudzitis and Johansen, 1991; Shindler et al., 1993; Tarrant and Cordell, 2002; Tarrant et al., 2003). Similarly, studies of private forestland owners consistently find that owners value their lands for the natural setting of the forest, the natural beauty of the forest and the related recreation opportunities (see Birch, 1996; Bliss et al., 1997;
Bourke and Luloff, 1994; Brunson et al., 1996; Campbell and Kittredge, 1996). When forests are managed for wood products, the public clearly prefers non-traditional management practices such as group-selection cuts and retention of older trees for wildlife purposes over traditional management practices such as clear-felling (Illiss 2000, Brunson and Shelby 1992).

But beyond public preferences and support, there is reason to believe that managing for amenities is sound rural economic development policy. As our review of the literature has demonstrated, natural amenities are clearly thought to provide an integral component of recreation, tourism, and retirement development (Fredrick 1993; Keith and Fawson 1995; Jakus et al. 1995; Keith et al. 1996; Marcouiller 1997; McDonough et al. 1999). They provide the substantive but latent primary factor input into tourism industry output (Marcouiller 1998). As a quality-of-life factor, they also are believed to play a critical role in human migration and firm location decisions (Beyers and Lindahl 1996; Beyers and Nelson 2000; Graves 1979, 1980, 1983; Gottlieb 1994).

Thus, natural amenities are tied not only to recreation and tourism but to the migration of individuals and firms across a broad spectrum of the service sector. A strategy to manage for and produce amenities may have economic benefits beyond increased numbers of tourists and recreational homeowners but also involve other parts of the service sector.

Our development focus deals with the interactions between two key natural resource utilization regimes; that of commodity production and amenity production. Both regimes provide value added opportunities and represent equally important directions of natural resource use. More importantly, however, both also rely upon the health, productivity, and management of the same basic set of land resources - the natural resource base.

Our intent was to highlight compatibility as a key element for management input. Indeed, we firmly believe that there are more compatibilities among multi-product natural resource uses than incompatibilities. This runs counter to much of the traditional thought, both among academics and policymakers. The key to more integrative solutions lies within both parochial ideologies. Those who view timber as predominant need to realize the simple reality of human-centered forest management that is sensitive to more than just timber production. Conversely, proponents of nature-based tourism need to realize and internalize the dynamic nature of forest growth, the benefits of scientifically sound silvicultural techniques, and the need to interpret the "working" forest resource. Open communication and dialogue as to the implementation of these suggestions is required and remains a critical future planning need.

We realize that people and households in rural resource-dependent and amenity-rich regions have traditionally relied upon the natural resource base for economic sustenance through physical commodity production. Indeed, it is this level of economic dependence that, in large part, helps us understand why people view the natural resource from such disparate positions and ideologies.

Summary, Conclusions, and Policy/Planning Implications

Historian Samuel Hays, among others (i.e. Power 1996), suggested that the desire for amenities and environmental quality represents a fundamental shift in values reflective of the general desire for an improved quality of life. Hays argued that this was largely due to rising standards of living, higher levels of education and generation shifts (Hays 1987). With the rising standard of living, the environment becomes less valued as a storehouse of extractive goods and commodities and more valued as a place to recreate, as a vista, or as a wilderness preserve. Geographers Halfacree and Boyle (1998) argued that for the predominantly urban population migrating to the countryside, the rural represents a haven of sanity and security away from the city. The rural countryside has become an idealized, nostalgic notion of how communities and social relations should be and what a landscape should look like. Thus, economic prosperity, improvements in infrastructure and geographic redistribution of employment provide urban residents to act upon cultural ideals and reside in a rural setting.
Many of the drivers behind community economic vibrancy are the result of non-marketed goods and services. These take the form of both land-based natural amenities and publicly provided infrastructure. Important fundamental aspects that relate to both include characteristics of resource ownership (exclusivity) and the effects of additional use on utility of current users (rivalry). We formalized these concepts from the perspective of compatibility.

Amenities serve as important latent inputs to production in amenity-rich communities throughout America. They exist as latent inputs and present a complex mixture of market-based and non-market goods and services into the analysis of community economic development. Rapid change experienced within amenity-rich communities across America continues to point to the importance of amenities as key factors. This change is driven by the demands of short-term visitors, in-migrating newcomers, and long-term residents.

The latter two categories drive change through residential developments and individual decisions about locating living space in proximity to amenities. The economic, social, and environmental changes brought about by residential developments are typically not fully understood by decision-makers within affected communities. Although rapid residential development and its planning complexities have been recognized since the 1970s (ASPO 1976; Coppock 1977; Ploch 1978; Greason 1989), unfettered growth has persisted throughout many rural American communities. Several factors have contributed to this, including a general lack of planning resources, desperation for economic growth in hopes of alleviating persistent rural poverty, and a more conservative political environment.

If amenities are not recognized as a resource that can be managed and produced, they run the risk of being degraded. For as surely as soil can be degraded by poor farming practices, a beautiful scenic vista can be degraded by poor land use planning or poor forest management practices. As the rural planner Tom Daniels has noted "In the new knowledge economy, an area's quality of life translates into economic growth. Yet the places with the highest quality of life are always at risk of being 'loved to death'"
References


Figure 2. Complementary and Competitive Multi-product Outputs of Land Use
1 Economists have developed the concept of additivity to describe costs of producing joint outputs relative to producing each output individually as a way to understand multiproduct firms (Bailey and Freidlaender 1982).

2 This said, we recognize the significant investment of public resources in management of public lands and the scarceness of the natural resources they contain.

3 Historically, forested lands were converted to agricultural production which experienced a checkered history in the Northwoods. Given marginal soil fertility levels and shorter growing seasons, many of these northern farms were unsuccessful and reverted back to forests. Interestingly, these more productive sites made up the bulk of tax reverted lands during the 1920s and 1930s and now are largely owned and managed by public agencies such as the USDA Forest Service and state/county level units of government. Readers interested in this pattern of land ownership are referred to a recent article by Stier, et al 1999.

4 The development paradox of wilderness is a useful concept to reinforce this notion of accessibility. Wilderness, by definition, connotes a general dearth of infrastructure. The awareness of natural amenities found in wilderness areas originates from those who actually access wilderness areas. If our interest were to develop amenity-based market-driven economic value of wilderness areas, we would need to increase their use by developing access and recreational sites within the wilderness, a pursuit inimical to the very essence of wilderness.

5 This said, there is some disagreement on the extent of the empirical relationship. In examining the growing empirical literature, some have had difficulty in substantiating a claim that the income elasticity of demand for amenity values exceeds one. For
instance, Krisström and Riera (1996) examined several European-based contingent valuation studies for the income elasticity of demand and found widely varying results. Indeed, many of the studies they examined suggested that income elasticity of demand was less than unity.

6 This can be functionally presented if we let \( F(x_0, ..., x_n) \) be a systemwide production function defined to equal the sum of individual production functions \( [f_i(x_0, ..., x_n)] \) across the system and \( f_i(x) \) is the production function of individual land use \( i \). Alternative forms of additivity in the system are defined as follows:

Supra-additivity exists if and only if:
\[
\Psi = \sum_{i=1}^{n} f_i(x_0, ..., x_n) - \sum_{i=1}^{n} f_i^0(x_i) > 0
\]  
[1]

Additivity exists if and only if:
\[
\Psi = \sum_{i=1}^{n} f_i(x_0, ..., x_n) - \sum_{i=1}^{n} f_i^0(x_i) = 0
\]  
[2]

Sub-additivity exists if and only if:
\[
\Psi = \sum_{i=1}^{n} f_i(x_0, ..., x_n) - \sum_{i=1}^{n} f_i^0(x_i) < 0
\]  
[3]
Recreation, Amenity Migration, and Urban Proximity: Forces of Growth in Walworth County, Wisconsin

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Abstract

Growth in rural counties results from many forces beyond the traditional job- and industry-driven causes, including second home-based recreation, amenity migration, and proximity to urban areas. This study combines secondary data analysis with a case study to investigate the growth of Walworth County, WI where these three factors together are reshaping rural communities and landscapes. The paper considers the implications urban proximity has for demographic change in amenity areas, examines the role that recreation and proximity play in attracting residents, and investigates the attitudes of current residents and second home owners toward future development. These findings have significant implications for the many rural recreation areas located near major metropolitan centers.
Recreation, Amenity Migration, and Urban Proximity: 
Forces of Growth in Waubworth County, Wisconsin

Recent migration trends, fueled in part by the nation's love of forests, lakes and other natural resources, are transforming the rural landscape. Since the late 1960's, the U.S. has been moving toward population deconcentration. Such deconcentration is reflected both in the tendency of the population to sprawl outward from large, densely-settled urban cores, and in the recent rural demographic rebound, which fueled rapid population gains in many nonmetropolitan areas.

Natural resources that are valued and maintained for their recreational and esthetic qualities are often referred to as amenity resources. Beginning with the study of nonmetropolitan population turn-around (i.e., urban-to-rural) migration of the 1970s, amenity resources have been recognized for their influence on migration patterns (Marans and Wellman, 1978). Recent work by Beale and Johnson (1998, 2002) and McGranahan (1999) further highlight the influence of amenities and recreation on rural migration, demonstrating that the nonmetropolitan recreation and amenity counties spread across the country have consistently produced significantly higher rates of immigration than other nonmetropolitan counties.

The individual decisions and behaviors behind migration to recreation and amenity counties, termed "amenity migration," are not yet well understood, but preliminary research implicates tourism, suggesting that the propensity to migrate is much higher among those who have vacationed and owned second homes in the area. Once visitors discover an appealing area, it appears that some follow a progression of decisions: first making return visits, then using or owning a second home in the area, and finally migrating to establish their primary residence there (Stewart, 1994). Prior research (Stynes et al., 1997) found that 30% of second home owners surveyed in northern lower Michigan were likely or very likely to retire to their second home (converting it to their primary residence) within 10 years. The influx of migrants and second homeowners to amenity-rich locales is known to have significant demographic, social, and economic impacts. These changes are among the primary social drivers behind landscape change and have significant implications for the management of natural and recreational resources.

While many recreation and amenity counties are remote, pristine locales, a significant number are immediately adjacent to metropolitan areas. Nationwide over 100 million people reside in metropolitan areas that are adjacent to recreation or amenity counties. Urban people become familiar with these areas through recreation, increasing the likelihood these counties will be considered when retirement or other lifestyle relocation decisions are made. Easy access to specialized urban health care facilities and cultural resources can add to the appeal of urban proximate recreation and amenity areas. In addition, the growing trend toward partial retirement, the potential for different timing of the retirement decision in two-career households, and the interest in taking on a new career after formal retirement (Thrush, 1999) all suggest that retirees in the baby-boom generation may prefer to remain closer to their original homes than were earlier generations.

Even for those who are not ready to retire, the relationship between home(s), work, and office have changed. The traditional concentration of offices and factories in
the central city and the necessity for virtually every worker to report to the workplace every day once firmly linked work and place of residence. Under these conditions, the primary residence was close to the workplace, and the second home, often more distant, was used only during leisure time. However, recent developments in communication and transportation may diminish the necessity of living proximate to their workplace. To the extent that this occurs, patterns of second home use may shift toward longer weekends that involve doing some work from a home office, particularly one close enough to the workplace that access is still possible should it become necessary. However, the actual impact technological developments have in shaping work patterns is still debated (Russell, 1996) and clear evidence regarding its effect on seasonal home use and amenity migration is needed.

The consequences of tourism and amenity migration. Amenity migration coupled with second home use and the recreational activity associated with each impacts the destination community and its economy (Stynes et al., 1997). Traffic, demand for public services, business activity, and congestion at recreation sites ebb and flow with the arrival and departure of visitors (Stynes and Stewart, 1990). While the economic activity associated with second home ownership and use can account for a major portion of all economic activity, especially in smaller communities (Stynes et al., 1997), the cyclical variations in visitation – and hence, in spending activity – are also a source of concern (Stynes 1986; Stynes and Chen 1985). For example, local government in areas with high levels of recreational activity suffer more fiscal stress than elsewhere, possibly due to the need to maintain staff and infrastructure levels to meet peak season demands (Beale and Johnson 1998). The economic activity associated with amenity migration, second home ownership and visitation also plays a role in area population growth by allowing the outmigration of local residents, who are more likely to stay as job opportunities expand in the area (Beale and Johnson, 1998; Johnson and Beale, 2002).

Ultimately both migration and tourism result in a broad array of social, cultural and economic changes, particularly when they occur in small communities (Harrison and Hubands, 1996). Economic growth, concern over traffic congestion and vandalism, public services being stretched to capacity (and beyond) and a feeling that the social structure of the community is shifting are not unique to the source of change – they could describe the consequences of demographic growth in any setting. But tourism and migration raise some unique concerns, especially regarding residents' attitudes toward growth, and the divisions among groups in the community on these issues. Specifically, both migration and tourism are thought to create discord between long- and short-term residents (migration) or residents and visitors (tourism). Recent evidence for schemes over growth, resource management, community planning, and related issues is equivocal, however. The growing consensus is that the conflicts have been overstated; that differences of opinion are subler, and membership in pro- or anti-growth factions less predictable than was once thought (Harrill 2004, Nelson 2002, Smith and Kramlich 2000). More empirical evidence is needed to complete our understanding of how tourism and migration affect the relationships among members of and visitors to rural communities.

Much of what we know about patterns of second home use and relations between second home owners and the community comes from research conducted in areas distant from urban populations (Katenborn, 1997; Mansa and Wellman, 1978; Stynes et al.,
1997; Stynes, 1998; Williams and Van Patten, 1997). Urban proximate recreation areas may differ from more remote rural locations considered in previous studies in several ways. Urban proximate areas may have more diverse economies and thus be less susceptible to seasonal or cyclical swings. Urban proximate recreation counties also have larger populations than remote recreation counties (data not shown). A larger population base in urban proximate areas in relation to the seasonal influx of visitors would tend to dampen the magnitude of all cyclical impacts (Stynes and Stewart, 1990). Patterns of activity may vary across settings as well. It is our expectation that proximity to urban areas facilitates more frequent usage of second homes, with less pronounced seasonal peaks. Frequent access to second homes may increase the probability of migration to such areas. In addition, urban proximity could draw more day (vs. overnight) use by the large proximate population. Residents’ familiarity with urban settings, which we expect is greater in urban proximate areas, may color attitudes toward community growth. In sum, the nature of social and economic impacts on urban proximate recreation and amenity areas may be quite different than those associated with more remote second home areas.

Data and Methods

This project combines a national overview of recent demographic trends in nonmetropolitan recreation areas with an in-depth look at the dynamics and implications of such demographic trends for a prominent recreation county situated adjacent to two large urban centers.

The analysis of nationwide demographic trends in nonmetropolitan recreation counties uses data from the 1970 to 2000 Census together with demographic data from the Federal State Cooperative Population Estimates Series. The nonmetropolitan recreation counties were identified by Johnson and Beale (2002) based on recreational employment and earnings, seasonal housing and expenditures for lodging. Counties are the unit of analysis and are appropriate for this purpose because they have historically stable boundaries and are a basic unit for reporting demographic and economic data. Counties were delineated as metropolitan or nonmetropolitan using criteria developed by the Office of Management and Budget. The U.S. contains 3,142 counties or county equivalents. A consistent 1999 definition of metropolitan areas is used throughout; 837 counties were defined as metropolitan and 2,305 were defined as nonmetropolitan. We use the terms nonmetropolitan and rural as equivalent in this paper.

A case study of growth in Walworth County is presented to illustrate some of the causes and consequences of growth in a county that is recreational, high amenity, and urban proximate. It is situated among rolling hills, lakes, forests and farmland in southeastern Wisconsin. It includes Lake Geneva, long a recreation destination for Chicago residents. Second homes represent 17% of the county’s housing stock. Nearly 10 million urban residents live within a two-hour drive of the county in the nearby Chicago and Milwaukee metropolitan areas. Tourism, agriculture and manufacturing are the major employers.

Survey data from Walworth County was gathered using a self-administered questionnaire distributed in late 2000. The sampling strategy was designed to maximize the member of second homeowners and amenity migrants. The primary recreation areas in
Walworth County surround the lakes within the county. Therefore, the sampling process selected only properties that were located on or immediately proximate to one of the 12 major lakes in the county (see Johnson and Stewart, 2001). Questionnaires with cover letters were mailed to each of the 984 randomly selected households. Two follow-up mailings were sent to those who did not respond. A total of 519 surveys were returned resulting in a response rate of 52.1%. A comparison of the value of the property and the improvements (homes and related buildings) by those who responded to the survey and those who did not shows no significant difference between the two groups. Thus, there is good reason to believe that the sample is broadly representative of residents of lake areas in the county.

Survey questions measured many aspects of life in Walworth County including basic demographic characteristics, location of primary residence (in the case of second homeowner) and previous place of residence (in the case of year round residents). Of particular relevance to this research were items exploring the relative importance of locational attributes, including those common to most second home area (e.g., amenity resources) and those unique to the urban proximate setting (e.g., distance from primary home, office, cultural resources). Items included on prior surveys of second homeowners (Stewart and Stynes, 1994; Stynes et al., 1997; Williams and Van Patten, 1997), as well as questions regarding the use of technology and its impact on work patterns and migration (Salant, Carley and Dillman, 1996) were also used.

Urban Proximate Recreation Counties

Johnson and Beale (2002) identified nonmetropolitan recreation counties using a multi-step selection procedure combining several empirical measures of recreational activity with a careful review of contextual material to identify recreation counties. Recreation counties exist in 35 States, but there are significant spatial concentrations in only a few areas (Figure 1). In the Upper Great Lakes region and the Northeast there are numerous lake-oriented counties that are second-home summer vacation areas of long standing, although many have added winter attractions such as snowmobile trails or skiing. In these counties it is common for anywhere from a third to a half of all housing units to be seasonal use places. Recreation counties are scattered throughout the length of the Rocky Mountains. Many are best known for their national parks and ski resorts, but are also great places to hike, mountain bike, fish, climb, sail, or just escape the summer heat and humidity. Upland areas of the South also include recreation counties offering many of the same activities as the West, with a number of them benefiting from leisure use of the reservoirs that are the legacy of the dam-building era. Alaska and Hawaii are also well represented. Aside from a few casino counties, there is a general dearth of recreation counties in the southern Great Plains, the Corn Belt, and the lower Mid-South (Johnson and Beale, 2002).

The nonmetro population rebound that occurred from 1990-2000 (Johnson and Beale, 1994; Johnson, 1999) was particularly rapid and widespread in recreation counties. Population growth far exceeded the national average in the nonmetropolitan recreation counties. The overall population increase in recreation counties was 20.1 percent, compared with 10.3 percent in all nonmetro counties and 13.1 percent in the nation as a whole (Table 1). Most of the population gain in recreation counties was fueled by the net
immigration of people (84 percent). The migration gain in recreation counties was 2.5 times that in nonmetro counties generally and more than four times that for the nation as a whole. Such migration gains were extremely widespread as well, occurring in 88 percent of the recreation counties. These migration gains are the likely result of increased in-migration to these counties, together with higher retention of residents because of the greater economic opportunities fostered by migrants. The rate of natural increase in the recreation counties (i.e., growth from surplus of births over deaths) was slightly lower than elsewhere. Although recreation counties have not been immune to temporal variation in factors that influence the pace of demographic change, they consistently had population and net immigration gains that far exceeded those in other nonmetro counties (Johnson and Beale 2002; Beale and Johnson, 1998). For example, the rate of population growth in recreation counties has slowed since 2000 (as it has elsewhere in nonmetropolitan America), but it still remains more than twice that of nonmetropolitan America as a whole. Migration continues to fuel virtually all of this growth.

Comparing the recreation counties to a typology of counties developed by the Economic Research Service (Cook and Miller, 1994) demonstrates the strong linkage between demographic change and recreation activity. In the 1990s, population growth rates in recreation counties exceeded those in all but two of the ERS county types (Figure 2). The exceptions were retirement destination counties and those containing substantial federal holdings. Retirement counties were the fastest growing of any county type with a population gain of 28.4 percent and those counties were the only ones with a larger migration gain than the recreation counties. In fact, there is a considerable overlap between the two groups (55 percent of the 190 retirement counties are also recreation counties).

because areas with recreational opportunities are likely to attract older migrants with the time and inclination to pursue leisure activities. Growth in recreation counties was also well ahead of that in counties dependent on manufacturing, government work, trade and services, or those with un-specialized economies. Even counties with high rates of intercounty job commuting — many of which adjoin metro areas and are incidentally suburban — did not match recreation counties in the pace of population increase. By contrast, farming counties grew just 6.6 percent during the 1990s. In sum, there is significant evidence that the presence of recreational opportunities in rural counties is strongly linked to population growth.

Among the most heavily pressured recreation counties are those immediately adjacent to a metropolitan area. Metropolitan areas are found in close proximity to amenity recreation counties in most parts of the nation (See Figure 1). Population in these 111 urban proximate recreation counties grew by 20 percent between 1990 and 2000. The rate of growth was the same in the nonadjacent recreational counties during the 1990s. However, since 2000 the rate of population growth in the proximate recreational counties (1.4 percent annually) has been higher than that in the more remote recreational counties (1.0 percent). A similar pattern existed in the 1980s. In each period, proximate counties experienced significantly more net migration gain than their more remote counterparts (detailed data not shown). Improved transportation and the growth of population and economic activity on the periphery of metropolitan areas, together with urban residents’ desire for access to recreational opportunities and second homes (Johnson, 1998; Beale and Johnson, 1998), suggest that urban proximate recreation counties will continue to grow and change. In the face of increasing time constraints and
growing congestion around major urban centers, the proximity of these areas makes them increasingly attractive recreation destinations. With more than 100 million residents these nearby metropolitan areas represent an enormous pool of future recreation migrants.

Recreation counties might be expected to attract a substantial number of migrants of retirement age, but they also appeal to a broader cross-section of the population. The general pattern of age-specific migration to recreation counties is consistent with that of nonmetropolitan America as a whole (Johnson et al., 2003). Here, as in other nonmetropolitan areas, migration losses were the greatest (or gain the least) among young adults (Figure 3). There is a significant flow of older adults to recreation counties, but the migration gains for adults in their 30s (plus the children associated with these adults) are also quite large. Among older adults the median rate of migration gain accelerated throughout the period implying that retirement migration streams are less sensitive to changing economic conditions than are those for working age adults.

Our analysis suggests that a structural transformation of the migration signature of recreation counties is underway. The fact that older adult migration gains in the 1980s (a difficult time in nonmetropolitan America) exceeded those during the 1970s turnaround, and that gains during the 1990s were greater than in either of the preceding decades, indicates these groups are becoming a larger component of the migration stream to recreation counties. Such a structural shift in migration patterns to recreation counties has significant implications given that the ranks of those over the age of 50 are already beginning to swell with the first of 70 million baby boomers. With the baby boom approaching retirement age, the potential for future increases in the rate of recreation migration is substantial. To find out more about how urban people use recreation areas,

how these usage patterns affect migration flows, and the likely future implications for recreation counties just beyond the urban edge, we turn to our case study.

Walworth County Case Study

Walworth County is located in southeastern Wisconsin just beyond the fringe of the Milwaukee and Chicago metropolitan areas. Downtown Chicago is 72 miles from the center of the county and downtown Milwaukee is 40 miles away. More than 10 million urban residents live within a two-hour drive of the county. Its topography of level to rolling hills with numerous lakes (the largest is Lake Geneva) left by the last glacier that shaped the Kettle Moraine region make it appealing for recreation. Its attractiveness is further enhanced by the presence of part of the 51,000 acre Kettle Moraine State Forest, which attracts hikers, mountain bikers and campers as well as other interested in outdoor activities. The presence of forest and water based recreational opportunities in a scenic area in close proximity to one of the largest urban population concentrations in the country make Walworth County an ideal location for observing the impacts of amenity migration, second home use, and urban proximity.

The influence of the proximate metropolitan areas on Walworth County takes many forms -- some subtle, some more obvious. Among the most tangible of these is migration. In 2003, Walworth County had 96,800 residents — 21,800 (29 %) more than were enumerated during the 1990 Census. Migration fueled most of this recent population gain, contributing 18,200 new residents to the county compared to a gain through natural increase of 3,600. The county-to-county migration file developed from the 1990 and 2000 Censuses provides a snapshot of the migration streams (origin and
destination) in the five years preceding each Census. In each period, the largest net migration gain to Walworth County was from the Chicago metropolitan area. The Milwaukee metropolitan area was the next largest source of migrants. Nor does it appear that such migration streams are of recent origin. Most of those who resided in Walworth County in both 1990 and 1985 were born in Wisconsin, as would be expected. However, most were born in Illinois, far more than in all other states combined (Johnsen and Sonnenschein, 1998). Thus at a very concrete level, the demographic impact of nearby metropolitan regions on Walworth County has been substantial.

Walworth County’s lake communities have served as retreats for city dwellers since the nineteenth century, when wealthy Chicagoans traveled by train to Lake Geneva. The advent of the automobile made the county’s recreational areas more accessible. And, the establishment of the Kettle Moraine State Forest in 1937 enhanced the recreational appeal of the county. Walworth County has long attracted second homeowners, particularly from Northern Illinois. Seasonal and “year-round occasional use” recreational houses represented 17% of all housing units in the county in 2000. Improvements in transportation together with the outward sprawl of the Chicago and Milwaukee metropolitan areas has produced another important tourist group, those who live close enough to visit Walworth County for the day and then return home in the evening.

We surveyed 513 homeowners in Walworth County to better understand residents’ views regarding growth, and to explore the roles of amenity resources and urban proximity in bringing them to the county. The respondents included 193 seasonal and 320 permanent residents living on or very near one of 12 lakes in Walworth County. They had owned their property for an average of 14 years, though the length of ownership ranged widely, with 8 respondents who acquired title before 1950, and 17 who bought their property within the last year. Their average age was 58. Seasonal residents as a group were better educated and had considerably higher incomes compared with permanent residents. Seasonal homeowners’ spending and its indirect impacts on the local economy contributed an average of $13,005 per year, a significant benefit to Walworth County’s economic welfare. The vast majority of seasonal homeowners surveyed live in the Chicago metropolitan area (Johnsen and Stewart, 2001).

We sought to better understand the reasons both permanent and seasonal residents chose to buy property in Walworth County by asking both open-ended and fixed-alternative questions about what factors influenced their choices. To summarize their responses, we employed factor analysis to identify major themes in their answers. This, coupled with analysis of their responses to our open-ended question, provides a comprehensive insight into the reasons our respondents selected Walworth County.

Our survey results suggest that urban proximity is an extremely important factor in decisions to purchase a second home in Walworth County, and is of some significance in decisions about whether to settle permanently in the area (figure 4). The proximity of Chicago (and to a lesser extent, Milwaukee) was an important factor in the choice of Walworth County as a place to purchase property for 76 percent of the second homeowners and was somewhat important to an additional 14 percent. Most of these second homeowners are from Chicago or its suburbs (Figure 5). Among year-round residents, 27 percent consider the proximity to Chicago and Milwaukee very important.
and another 38 percent consider it somewhat important. The importance of proximity is also reflected in that more than 74 percent of second homeowners can reach their primary residence in two hours or less. By contrast, 61 percent of second homeowners surveyed in northern Wisconsin faced a drive of more than 3 hours to their property (Stewart and Stynes, in press). The ease of getting to Walworth County from home or work was mentioned frequently as an attractive feature of the area in an open-ended question as well.

Although metropolitan proximity is important, the primary factor attracting both second and resident homeowners to Walworth County is the quality of the natural environment. Both sets of homeowners were attracted by the scenic, riparian and recreational amenities of the area and made extensive use of them. The central role of the lakes in this context is reflected in the extremely large proportion of both groups of homeowners who rate lake access and water quality very important (figure 6). Recreational opportunities are also very important to second homeowners, though somewhat less so to residents. In general, second homeowners value each of the recreation and environmental items more than their resident counterparts, but each group rates these factors as very important. The natural environment also mattered in nearly all purchase decisions for both homeowner groups.

The local atmosphere was another important factor that influenced home purchasing decisions. Although less important that the recreation and environment factor, the local atmosphere still carries considerable weight, particularly among residents. This is hardly surprising given that they spend considerably more time in the area and experience it differently than second homeowners. Both homeowner groups found the rural atmosphere and air quality of the county attractive features. In fact, for residents the rural atmosphere of Walworth County received the highest number of very important ratings. Given that 66% of the land area of Walworth County remains in agriculture with much of the remainder in forests, the rural feel of the area remains a very significant element of the county. Both groups also enjoy the pace of life in the area and the low crime rate—though here again it is the residents rather than second homeowners that tend to rate these very important.

The final factor identified as relevant is much more salient to residents than it is to second homeowners. Employment opportunities, the quality of local schools and how attractive Walworth County is as a place for raising a family all are quite important to residents, but carried little weight in second homeowners' decisions to purchase property in the area. This is hardly surprising. Second homeowners work and educate their children elsewhere. Whereas, those residents still in the labor force must be concerned about local opportunities to work. Even more telling is the high proportion of the residents who rate a good place to raise a family as very important. In fact, it ranks second only to rural atmosphere with residents. Clearly residents view the decision to settle in Walworth County differently than do second homeowners.

For all our respondents, family figured prominently in the reasons given for acquiring property, though only 26 percent currently have children under 18 living at home. Many said that finding a "good place to raise a family" (57%) and the "proximity of family" (66%) were somewhat or very important in their consideration. Many (21%) added comments that elaborated more on the family reasons for owning in Walworth County in the open-ended question we asked. There were also a number of comments
volunteered about the history of either personal or family association with Walworth County (16%) (Johnson and Stewart, 2001). Some of these comments came from second homeowners who remembered growing up or vacationing in the area and wanted their own family to enjoy a similar experience.

In sum, the recreational opportunities and amenity resources of the area were very important to both groups of homeowners in their selection of Walworth County. Consistent with our expectations, the proximity of Chicago and Milwaukee were quite important to second home owners, but ranked considerably lower among factors attracting year-round residents. Residents placed a much higher value on the rural atmosphere, pace of life, and air quality than did second homeowners, though second homeowners also gave considerable weight to the local community atmosphere. Local schools, jobs and the appeal of the area as a good place to raise a family were much more important to permanent residents.

Second homeownership is of particular interest in this study because seasonal homeowners often move to their seasonal home upon retirement. Seasonal home owners were asked how likely it was they would move to their Walworth County home at some point in the future. Because our second homeowners are at various stages of the life cycle, the time horizon for moving to Walworth County varies. However, some 23% reported they were somewhat or very likely to move to Walworth County within the next 5 years, another 11% in 5-10 years, and 6.5% in more than 10 years, for a total of nearly 40% planning to move to their Walworth County seasonal home and make it their permanent residence (Figure 7). Many told us that the proximity of the Chicago metropolitan area contributed to the appeal of Walworth County as a future place to settle. This finding is consistent with our expectation that urban proximity increases the appeal of recreation areas.

Although a permanent move to Walworth County has the most significant implications for the demographic, economic and environmental future of the county, the frequency with which second homeowners use their Walworth County homes also affects the community and its economy. We expected that the close proximity of primary residences and second homes among Walworth County respondents would increase usage compared to that reported in studies of more remote second homes. The data confirms this expectation. Walworth County second homes were occupied an average 11.5 percent more nights per year (97 nights a year compared to 87) than in a similar study of Northern Michigan (Stynes, et al., 1997), and far more than the 72 days of use reported for northern Wisconsin (Stewart & Stynes, in press). The seasonal patterns of second home use also differed. A larger proportion of the Michigan second home usage (55 percent) was in the summer months when compared to Walworth County (46 percent). Second homeowners in Walworth County were also more likely to use their homes in the winter than were the Michigan second homeowners. Both the higher overall usage and the more even distribution of usage throughout the year in Walworth County may be attributable to the closer proximity of primary and second home residences.

A critical question often raised in the literature is whether residents and second homeowners hold similar perspectives about the impacts of urban expansions on the county, and similar expectations regarding the future of the area. Planners and policy-makers often search for such consensus as they try to craft future strategic plans for the areas. We addressed this issue by asking respondents how growth was affecting the
communities in Walworth County, and what local leaders should do in response to a series of growth-related issues. Some impacts of Chicago's and Milwaukee's growth on Walworth County were rated as positive by both seasonal and permanent residents, among them: availability of shopping, access to health care, and employment opportunities. Negative impacts include traffic density, rural atmosphere, and crime rate. The respondents also agreed that growth had no impact on school systems, sense of community, and cost of retail goods. Permanent residents more often noted lake and stream quality suffered negative effects, and were also more likely to say the quality of the natural environment suffered. Overall, these questions of how growth is affecting Walworth County generated similar responses from permanent and seasonal residents.

Both resident and second homeowners strongly support protecting the quality of the natural environment, encouraging the preservation of open space and the preservation of farms (Figure 8). In contrast, support for economic development is mixed. There is some support for the continued development of tourism but much less support for industrial and retail development, particularly among second homeowners. Support for future residential development including second homes is limited, with slightly more support among second homeowners.

Conclusions and Implications

Amenity migration and second home use are closely linked in the upper Midwest US, and have many similar impacts on communities; generally positive effects on spending and job growth, negative effects on traffic congestion and recreation, and one potential amenity migration destination faces; but urban proximity is an additional source of concern regarding future growth. Population deconcentration continues relentlessly though there have been site crowding, and mixed, but significant effects on the discourse surrounding future community growth and resource management. Additionally, our research suggests the purchase of second homes may serve as a harbinger of amenity migration and thus, of demographic growth and the lasting community change it affects. These consequences are common across the many settings we and others have studied in the upper Midwest.

In this project we looked specifically at the impacts and characteristics of second home use and amenity migration on an urban proximate recreation county. While people view second homes as "getaways", the degree to which life allows individuals and families to get away from their job and their primary home varies widely with age and circumstance. The urban proximity of Walworth County was an important and positive factor in the decision of many second homeowners we surveyed. The number of other recreation counties that are urban proximate suggests that results of this research have implications nationwide. Urban proximate counties rarely fill the mold of exclusive or pristine second home areas, but they serve a large number of people, across a longer portion of the year, engaging in a wide range of leisure activities. Walworth County homeowners used their property frequently, and despite the cold Wisconsin winter, nearly year-round. Their intentions to relocate to Walworth County on a permanent basis in the near future is somewhat higher than rates of intended conversion found in more remote second home communities. This suggests that Walworth County will face pressure for future growth from amenity migration, particularly as baby boomers retire.

The specter of baby boom retirement is one 

to see if there has been
temporal variations in its pace over the last several decades (Frey and Johnson, 1998). Should Chicago and Milwaukee continue expanding outward at a faster rate than that at which their population increases (which appears likely), we can expect Walworth County and the many urban proximate recreation counties like it to face urban growth pressure as well as growth through in-migration of second homeowners. The potential loss of amenity resources to housing and commercial development is one of many uncertainties facing this county and others like it.

The ties between tourism activity, recreational opportunity, amenity resources, and amenity migration are clear. The same resources we value for their aesthetic qualities and the recreational opportunities they afford are the ones that attract us as migrants. When migrants choose their destinations without regard to job location, amenity resources exert a powerful influence on their choice. Tourism and recreation experiences can expand awareness of areas rich in amenity resources, providing an initial familiarity with both physical and social settings in rural counties. For some, proximity to urban amenities such as health care, cultural resources, and job opportunities provide an added attraction to urban proximate recreation counties.

The implications of continuing growth in amenity and recreation areas are not all positive, particularly because these locations contain many environmentally sensitive areas. Water bodies, shorelines, wetlands, forests, and wildlife are likely to experience higher levels of environmental stress as the volume of human activity grows, especially where the physical features and fauna themselves are the objects sought for use or appreciation by the visitors and newcomers (Rudeiloff, et. al. 2001, Wear and Bolstad 1998, Wear et al., 1998).

The substantial growth in many recreation areas abutting forestland increases population density near and within forests (Hammer et al. 2004), aggravating fire control problems as witnessed prominently in the summer of 2002 (Stewart et al. 2003). Increased population density also complicates forestry and agricultural operations, puts additional pressure on riparian areas, and diminishes air quality. Continuing growth in some areas has the potential to diminish the very amenities that drew people to begin with. Yet in an era when hundreds of rural and small town communities face the necessity of develop new economic activities to counter the loss of traditional extractive and manufacturing activities, the rising urban demand for rural recreation has become essential to the continued vitality of many places.
REFERENCES


1 For a variety of reasons 23 of the original 984 surveys were determined to be invalid.
2 Metropolitan areas with major recreation areas in close proximity can be found nationwide. Seattle, Boston, Portland, Atlanta, New York City, Houston, Denver and Los Angeles are some examples.
3 Analysis of Wisconsin DNR data suggests that the state parks and forests in Walworth County receive among the largest proportions of out of state visitors and campers of any in the Wisconsin system (the other area is in NW Wisconsin just East of the Twin City metropolitan area). For example, out of state residents represent nearly 73% of the campers and day-use visitors to Big Foot Beach State Park on Lake Geneva in Walworth County. This is by far the highest percentage of out of state users anywhere in the Wisconsin system. Our thanks to Jeff Prey of the Wisconsin DNR for providing the usage data.
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Note: 1990 nonmetropolitan state totals for all periods.

Population growth is in the state as a whole. Nonmetropolitan is population growth minus natural increase.

Adapted and updated from 1991's Analysis due to missing data. Alaska counties excluded from 1990-2000 due to missing data.

Data from 1990-2000 are from 4000 to 19X0.

Nonmetropolitan Recreational Counties by Adjacency

Source: Johnston and Bollas, 2002.
Figure 2.

Figure 3.
Figure 6.

Figure 7.
Figure 8.
Resident-Employed Photography as a tool for Understanding Attachment to High Amenity Places

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Abstract

Although there has been a great deal of research on attachment to high amenity places, such work has tended to dichotomize participants according to use patterns. At the risk of oversimplification, research on visitors/recreationists has tended to focus on landscape elements (environment) and the quality of the recreational experience. In contrast, permanent resident community attachment has emphasized social interactions and other community attributes, to the relative neglect of the physical environment and the attractions it holds. Methodologically, visitor employed photography (VEP) has been used to understand qualities that enhance the recreational experience. Such approaches have rarely been used for community residents, but when paired with in-depth interviews, are capable of capturing complex phenomena. Our research applies the techniques of VEP to analyze local elements that foster place attachment among permanent residents of high amenity areas. We provided single use cameras to 45 subjects in two communities located in and adjacent to Jasper National Park, Alberta, instructing them to take photos of elements that most attach them to their community. Analysis of the photographs and accompanying interview text reveals a complex relationship between nature and culture as loci of attachment. To understand the future of high amenity communities, it is crucial that researchers utilize methodologies that are capable of capturing the myriad factors, and their interaction, that may attach people to place.

Introduction

Research on community attachment has not fully addressed year-round resident attachment to the physical landscape. This stands in contrast to research on recreationists, which may have over emphasized such factors. Many high amenity landscapes are experienced not only by visitors, but by year-round residents as well, who may also form attachment on the basis of the physical landscape. Community attachment research has employed a variety of approaches, including surveys and personal interviews, but has tended to eschew photo-based methods, such as Visitor Employed Photography (VEP), which has been used to capture visitor/recreationist perceptions of landscape. In this paper, we describe and implement a research protocol for using a photo-based approach to understand resident place attachment to the community of Jasper, Alberta, located within the bounds of Jasper National Park.

Literature Review

Place and Community Attachment

A “place” is a spatial setting that has been given meaning (Tuan, 1977) based on human experience, social relationships, emotions, and thoughts. Common to definitions of sense of place is a three component view that integrates the physical environment, human behaviors, and social and/or psychological processes (Brandenburg & Carroll, 1995; Relph, 1997; 1976). In this research, we focus on place attachment, or a strong positive bond between a person/group and a setting (Altman & Low, 1992). Place attachment is built through experience: Relph (1976) describes an experience-based continuum of sense of place based on a steady accumulation of experience: those who have spent the most time, have participated fully in the life of the home or community, or have accumulated a series of “humble events”) will have the strongest place
sentiments. "Extended residence in a place tends to make us feel toward it almost as a living thing...the place has become a shaping partner in our lives, we partially define ourselves in its terms, and it carries the emotional charge of a family member or any other influential human agent (Ryden, 1993:66). However, Tuan (1977) counters that a sense of place may also develop quite rapidly in "chosen places", where dramatic landscapes and intense experiences can lead quickly to attachment. Many settings, especially those that include sites that attract visitors, simultaneously entail home places and (especially for visitors), chosen places.

Symbolic meanings of "what kind of place this is" are key to understanding place attachment. We attribute meaning to our settings, and in turn become attached to the meanings themselves. All settings are imbued, to varying degrees, with multiple place meanings. High amenity rural communities may simultaneously embody "home" or "escape" meanings (Stedman 2003). Meanings may be based on nature, culture, or both. Somewhat ironically, given the emphasis on extensive or intensive experience in creating place, much field research on place attachment has focused on outdoor recreationists (e.g., Williams et al., 1992; Moore & Graefe, 1994; Bricker & Kerstetter, 2000). These approaches have typically focused on attachment to the physical environment or the recreation experience, to the potential neglect of other factors that may also foster attachment, especially among long term permanent residents (see Hay, 1998). Less often has sense of place been measured for permanent residents of high amenity areas, and taken seriously the potential impact of environmental amenities in fostering attachment. By implication, if we suspect that the process by which attachment is created differs between visitors and residents, research on high amenity places may have been privileging the visitor experience at the expense of other types of encounter and attachment.

Many visitors to high amenity "gateway" communities may not recognize that these places are "peopleed" with year-round residents leading ordinary lives—raising children, working, living, and dying. The "place attachment" approach described above focuses on outdoor recreationists (e.g., Bricker and Kerstetter 2001; Mitchell et al. 1993; Moore and Graefe 1994; Williams et al. 1992) and tends to be published in natural resource or recreation and leisure journals. In contrast, community sociology research has examined attachment and satisfaction with the community, rather than with natural amenities as the locus of attachment and satisfaction (e.g., Kasarda and Janowitz 1974, Ladewig and McCann 1980, St. John et al. 1986, Theodori 2000, Wilkinson 1991). Communities include public and private spaces, social relationships, community services, the potential for collective action, and many other facets that may distinguish them from the "environmental" sites that typify place attachment research. In fact, it is interaction with other people, rather than places (read: environment) that is a defining characteristic to many definitions of community (e.g. Wilkinson 1991, Theodori 2000). There is an unfortunate disconnect between these perspectives, with few linkages between the experiences and perceptions of visitors to public lands 'playgrounds' (and accompanying "escape" meanings) and year round community residents who are somehow expected to neglect the physical environment that surrounds them, but in reality may have constructed notions of home that reflect the presence of the physical environment. It is important to understand the amenities because (from a rural development standpoint) they are the main source of competitive advantage for many rural places. Policy makers tend to pay a lot of attention to this (and maintaining the quality) for recreationists and seasonal residents, but perhaps forget how important they are for people who have chosen to make these settings their permanent residence.
Photographic Methods for Resident Place Attachment

Much research on place attachment (e.g. Kyle et al. 2004, Stedman 2003, Williams and Vaske 2003, Moore and Graefe 1994) has made use of survey research methodologies and multivariate modeling. Other researchers (e.g., Krueger, 1996; Hunmon, 1992) suggest a holistic, phenomenological sense of place that cannot be broken down into specific, measurable components and then “reassembled” using multivariate models. Regardless of which approach is preferred, it is clear that we are dealing with a complex phenomenon. Photo-based approaches may offer an advantage for understanding such multifaceted constructs.

We base our approach on Visitor Employed Photography (VEP) but expand considerably the range of participants and phenomena considered. VEP, as used in recreation research, has typically engaged a relatively narrow range of phenomena: it has primarily been used by those wanting to understand the perceptions of visitors to parks and recreation places. This early work is strongly cognitive/perceptual/aesthetic, where aspects of the physical setting have certain attributes that can create, for example, “perceptually exciting nodes” based on the density of stimuli at a given site, or energy gradients where there are distinct edges, such as between forest and field (Cherem & Driver, 1983). Asking visitors or tourists to take their own pictures (e.g., Cherem and Driver 1983, Haywood 1998) is not without potential pitfalls. Chenowith (1984) notes that research subjects may not necessarily take photos that are representative of their entire recreational experience. For example, when researchers assign the task of photographing a travel route with which respondents are not familiar, participants may save too many pictures and then ‘burn’ them at the end. Markwell (1996) noted an opposite tendency in his study of pictures taken on a nature tour: beginnings of trips were over represented, due perhaps to the initial novelty of the trip. The bottom line is that people are being asked to photograph a landscape/

setting with which they are not intimately familiar. In contrast, the fields of visual anthropology / sociology have used photographs to assess a wide range of concepts such as inequality, the construction of reality, power and conflict (Rose 2000, Goi 2001, Harper, 1986), but analysis often consists of analyzing photos as text in an ex-post fact manner, or asking participants to evaluate researcher-taken photos.

Photo-based approaches, as described above, offer some significant advantages for the study of place attachment: they are capable of conveying multilayered meanings: photographs can be “off” multiple things simultaneously (e.g., experiences, settings, and social relationships at the same time). The photographs serve as a reference point and a focus of the interviews. Most settings, as suggested in Sack (1997) are simultaneously repositories for both ecological and sociocultural phenomena. Taking a picture, and then talking about it, allows these themes to emerge simultaneously (the interviews allow us to better elucidate the content of the photo and the degree to which it represents sociocultural or ecological phenomena, and how these combine in potentially unique ways). At the same time, photos are “placed” in ways not easily captured in survey research: a photo is necessarily taken at a specific locale, which allows more setting specificity than asking people to respond to attributions of their community or recreation setting. In the study of place, it simply makes sense to learn a bit about the specific places to which people are attached.

We offer a number of suggestions for modifying VEP methodology to incorporate resident attachment. First, research subjects include local residents, rather than limiting research to visitors. Related, methods should reflect this to include a broader range of lived experience. Finally, the researcher should not assume that the content of the picture is revealed simply by
examine it. Rather, the photographer intent should be revealed by triangulating through an
interview process that allows feedback with the researcher.

**Research Questions, Setting, and Methods**

In this research project we explore the potential utility of the photographic approach to
understanding sense of place in high amenity communities. As such, we are interested in how
year round residents integrate nature and culture in their daily lives. What meanings are held for
the local landscape, what experiences that give rise to these meanings, and how has the
management of protected areas shaped these sentiments. Our project involved six communities
in three Canadian provinces, but in this paper, we report only on Jasper, Alberta, within Jasper
National Park.

Although many “high amenity” communities in the United States lie adjacent to public
lands (Kramisch & Petrezek, 2003), in Canada it is relatively common for entire communities
to be located within the boundaries of national parks. People own their homes but not the land
they sit on; the land is leased from the Federal Government. The mountain parks (e.g., Jasper)
have a “need to reside” clause that allows only those with jobs to reside in the Park boundary.
As well, the boundaries of the town site are rigidly controlled and maintained: these places
cannot sprawl. Therefore, some of the issues of rapid growth around high amenity communities
in the United States are different in this context.

We provided 23 Jasper residents with 24 exposure single use cameras and instructed to
take two photographs each (in case one photo was of poor quality) of 12 things that “most
attached” them to their community, that provide the most meaning to them, or that they would
most miss if they were to move away. Participants were selected to (as much as possible)
represent a wide range on variables such as gender, age, length of residence in the community,
and occupation (Table 1). Snowball sampling based on previous contacts in the community was
combined with respondents to public notices, and “cold contacts” where individuals were
approached in certain contexts linked to their characteristics of interest (i.e., workplaces) or
simply approached in public settings (i.e., coffee shops or town parks). We encountered a great
deal of enthusiasm among potential participants; our refusal rate among those contacted directly
was virtually nil. In hopes to maximize the diversity of participants, we asked those who agreed
to participate to suggest someone with a potentially contrasting view.

**Table 1 about here.**

We attempted to keep the instructions of what/where to photograph somewhat open to
avoid unduly affecting the location and content of participant pictures, but mentioned that
anything was “fair game”, photos of people or things right in the town site (e.g. their home, their
church), or nearby places that they visit, where they recreate (e.g., trails, lakes, fishing spots).
Our field researchers arranged with the subjects a time to pick up the completed cameras and
conduct a follow-up interview. We made two sets of prints, one for the participant to keep
(placed in a small photo album) as a “thank you” for participating. Interviews lasted between 45
minutes and three hours. We began with respondent personal history in the community to put
them at ease and provide us with important background context. We then examined the 12
photos one by one and asked the participant to describe what the picture was “of,” what they
were attempting to represent, and why they took it. We also asked them to “place” the photo on
detailed map of the local area, allowing us to examine the spatial distribution of important
places to respondents (these data are still being analyzed). All of the interviews were digitally audio recorded with the permission of the participant (they were instructed that they could turn the recorder off at any time, and also shown how to do it themselves should they wish). This research produced a large amount of data in the form of over 300 photographs and 250 hours of recorded interviews.

Results

As described earlier, we had a keen interest in the relationship between socio cultural and ecological attachments to place. Our initial analysis strategy (see Beckley et al. 2004 for more detail) was to attempt to categorize each photograph based on examining it along with the interview data. The research team, through several iterations, created a set of categories based on this division (table 2).

Table 2 about here

Each of the four members of the research team independently categorized each photo into one of the 12 categories, based on the content of the photo and accompanying interview data. Generally the research team independently agreed on the category in which to place a photograph. While the number of 100% matches is relatively low (36%), it was common (72%) for at least three of four of us to be in agreement. Only rarely (2%) did all four members of the team disagree on the content of a photograph. However, we were somewhat frustrated with the results of this categorization process: the act of picking a single category for a photo (placing a picture into an "either/or" category) seemed to defeat much of the purpose of the photo-based approach, namely the complexity of the interaction between nature and socio cultural elements in fostering place attachment. As a response to this frustration, we opted for a more purely qualitative approach that allowed us to explore the number and types of intersections between social and

environmental sources of attachment. As discussed earlier, and in contradistinction to previous approaches (e.g., Eisenhauer et al. 2000, Kaltenborn 1997) that have tended to dichotomize sources of attachment into either social or natural elements, we envision that in high amenity settings that include permanent residents, these elements are not so easily divided: whether hiking with a long-term group of friends, viewing spectacular mountain scenery as one goes about his or her daily routine, it is clear that nature and culture inform each other.

Even in a community such as Jasper, some of the meanings expressed seem to be based in what we might think of as more typical community attachment vectors, such as social relations. These photos conveyed a sense that the spectacular physical environment appears nearly irrelevant. In some ways, these are ordinary places with meanings of home that are based in the steady accretion of sentiment.

(148): This is my alley. I love my alley. Like no kidding, we are out here with coffee, breakfast, beers... it's like our social meeting place. Someone comes out and chats, and it's really fun. We have really good conversations out in this stupid alley. It's really a unique little spot.

Some of the meanings expressed by Jasper residents are tied to traditional images of small town living, as respondents emphasized the importance of Jasper's relatively small size and livability to their place attachment. One Jasper resident (not pictured) placed his bicycle in the foreground of every picture as a confirmation of the importance of not needing an automobile to get around town. Another resident photographed the downtown area of Jasper and said:

(94) This is my downtown, my post office, my bank. Because when you put them on a map... I can walk to all these places. I can walk to the post office, I can walk to the bank, I can walk downtown. I live in a pedestrian community. That is critical to me.

It also appears that some of the neglect of the natural surroundings as potential sources of attachment is to a degree deliberate, expressed as resistance to the amenity "boon town" nature of Jasper. Such places put so much emphasis on beautiful natural surroundings and the
recreation opportunities they contain that many participants took pains to show us “the other side” of living in Jasper. Not simply being reducible to a “tourist town” was clearly important to many Jasper residents. For example, one Jasper participant, in taking a picture of a local church (not pictured), said “It is extremely important to me to communicate to you that citizens live here, as opposed to tourist-serving robots I am just a citizen... I’m going to show you the mundane.” Another participant photographed the post office and said

(569): This is where everybody meets. That is very, very important. I bet you’ve gotten pictures from everybody on the post office... This is where the locals can meet locals.

The latter participant in particular emphasizes the distinction between local and nonlocal people and how important it is to have a place that is not overrun by visitors (as are many other public spots, such as restaurants and parks).

For community residents, attachment is built through cumulative experience. This is completely consistent with treatments of place attachment that emphasize the accumulation of experience over time as key to developing strong attachment to ordinary places: the role of repeat, layered experiences is a key differentiation between permanent residents and visitors (although see Stedman 2003 for a middle ground argument concerning second home owners).

Social networks as are also “placed” this way: another Jasper resident, in taking a photo of a local coffee shop (not pictured) says “we used to go down there at about 12:45 pm and have coffee and meet people down there, and have lunch. That’s why we go. It’s not that we can’t make coffee at home... But no, we go down there, meet people and yack. Stay about an hour.”

However, this type of picture and response was far from typical: it is clear that for most participants, nature is intertwined with other everyday elements. This conjoining of elements is a major driver of place attachment in these communities, and may represent a major difference between residents and visitors. How are nature and culture linked (i.e., why did we have so much trouble placing photos in a single category?). One linkage that quickly becomes apparent is the spatial link between nature and home. The close proximity of the outdoors with home emerged repeatedly: the closeness of nature, whether as a source of recreation opportunities or...
visual scenery, is seen as an extension of home. Nature is also not simply “out there” in the
grand scenery that visitors come to the area to see, but becomes part of home as well:

(165): I took three pictures on this bike trip. This one I thought was kind of neat because
you can see the town site behind it. That’s just to show you how close to town you’ve got
such a cool opportunity to do stuff.

(217): 'The little town in the Rockies', there it is. I took this because it was the
mountains and the town nestled right in the valley there. It really speaks to a lot of the
reasons of why I came here, why I came back. Obviously the scenery is phenomenal,
but...you can have your home in this environment.

Nature as sheltering, and becomes part of home meanings rather than escape meanings. Another
resident stated: “the mountains, I never get tired of them...they are kind of soothing, there’s a
protective feeling about them.”

The rivers, mountains, and forests in the Jasper region are of course not merely scenic,
but also important resources for myriad recreational activities. It is clear that the possibilities of
such recreational activities are a major source of participant attachment to the landscape.

Although recreation-based photos might appear similar to what we would expect from
participants in more typical VEP approaches, one thing that differentiates many of these year
round residents, from visitors is the cumulative nature of their recreational experiences; the
emphasis in the sense of place literature on deeper place attachment being driven by layered
experience (especially in home places or ordinary places) is strongly exhibited here. Consider
the following:

(219): Pyramid Mountain. Like, I did so many things up there. It was a beach when I
was a kid. It was the party place when I was a teenager. You know, bath parties and
that sort of thing up there. Uh, skating parties in the winter...Just a lot of really good
memories up there.

(179): This next picture is...on the Bald Hills trail. We come back to this area, at least
once every year. I hike this with my Thursday hiking group, which can have anywhere
from 4-6 people, but this day there was only 4 of us. It’s always nice to have more
people come along, see it more people to share with...the people I hike with, they’re just

other people that I’ve met. Some of them have grown up here, but they were older than
me so the only common denominator really is the fact that we love to hike.

Especially for long term residents, it is very difficult to separate out the social and the natural
landscape into “either-or” labels: the degree to which these interpenetrate, and the memory of
past events mix with current ones might be argued to foster increased attachment in these special
places. Surely a different kind of attachment is fostered than for one time visitors who may or
may not ever expect to return to these places. It is also important to remember that, in a place
such as Jasper, many people’s work identity is bound up in the natural landscape as well: a
disproportionate number of people have work that involves natural resources, whether through
Parks Canada, or service jobs that are related to the provision of outdoor recreation. For
example, as one Parks Canada employee described:

(190): So this is hiking...hiking is also part of work, too, which I really like... here
Canada owns all this land, so it’s a little different. Sure beautiful to be a part of it. It’s a
little different, don’t feel ownership as much, but working here as a warden, you
definitely feel fairly connected to it.

One of the things our research hints at are specific meanings that are associated with the
management of protected areas. Interestingly, Jasper residents rarely, if ever, mentioned
recreating outside of the park, even though there are vast lands close by. In contrast, most
residents of a nearby resource dependent community, although within easy driving distance of
JNP, preferred to recreate in the foothills area outside of the park. (see Stedman et al. 2004).

Some Jasper residents were uneasy about restrictive regulations. For example, one participant
(no photo) mentioned that “hiking in a national park is a little bit like hiking through a corridor
bubble” that separated her from the natural world. The restrictive regulations that accompany
protected area status (i.e., camping in designated areas only, no hunting, no motorized recreation)
leads to a “nature under glass” feel. In the words of one participant:
(141) ...sometimes if I want to get to a particular outcropping or something I will just cut through the bush. A lot of people aren’t okay with doing that though. It’s almost, like, even when people come to get close to nature, they are separate, they don’t step off of that pathway.

Summary and Discussion

Our research utilizes a traditional methodology usually used in the study of recreationists (VEP) and applies it more broadly, to understand place attachment of residents of high amenity rural communities. This approach surely reveals a different side of Jasper than would be the case with traditional visitor-centered approaches: we received pictures not solely of elk, mountains, and rivers, but of churches, post offices, and schools. It is very clear that residents have a multiplicity of types of ties to the social and natural environment. Substantively, this approach revealed that attachment, as reflected in the photographs, is both to the sociocultural and the ecological landscapes. For our resident participants, “home” is nested in the natural world and is enriched by the proximity of natural elements. Meanings of home and escape from home exist in close proximity to each other, allowing an expanded vision of one’s community to include the natural world. Attachment to the landscape is nested temporally as well: the accumulation of experience appears to be crucial to developing place attachment. Although we did not seek to test the strength of attachment, participants repeatedly revealed to us special places made special not solely on the basis of their visual beauty nor outstanding recreational quality, but also based on the memories of accumulated experiences, including social relationships. Our approach substantiates other studies that theorize the relationship between socio-economic and environmental factors in place attachment (Beckley, 2003), or examine the relationship using very different methods, such as quantitative survey research, than those we apply here (Eisebauer et al., 2000; Stedman, 2003). These previous approaches, while useful, have difficulty integrating nature and culture. We believe that our photographic approaches make progress on this front.

For example, based on theory (e.g., Tuan 1977) we might expect that over time, the environmental amenity value of a place like Jasper might “wear off” for permanent residents with their attachment becoming ever-more based on social relationships. Our research suggests that the answer is more complicated. True, attachment is based on notions of home and putting down roots, but proximity and opportunities afforded by the physical landscape apparently become written into an expanded notion of home that includes what previous research (Tuan 1977, Stedman 2003) might term “escape” meanings based on chosen places. As well, in a place like Jasper, the social and the environmental appear to inform each other to the degree to which they are nearly inseparable. The environment is “peopled” with family and friends, interactions are with the physical environment, but the most meaningful interactions tend to have a social component as well. The environmental thus informs the socio-political in other ways. Clearly that there are ripple effects: the high amenity physical environment attracts visitors that strongly affect the social interactions of year rounders, who may avoid popular public spots, while also taking advantage of infrastructure (i.e., recreational facilities, restaurants, etc) associated with places of high amenity. Finally, another ripple effect appears to be deliberate discourse that emphasizes the mundane over the spectacular as a form of public resistance to the myriad visitors, and to public policy that is targeted toward visitor interests more than those of permanent residents.

It has been amply demonstrated elsewhere that environmental amenities are often associated with population growth in rural areas. High amenity places are fast-growing places (McGranahan 1999). There is a huge demand to live in places like Jasper (its population and
potential land speculation is kept low only by purposeful policy). What we tend to lack is detailed indepth information on how these amenities are experienced by residents of these places (somewhat rephrased, we know what GETS people there, but know less about what KEEPS them there? Our approach thus entails meaningful implications for rural development. Place attachment, whether that of visitors or residents matters: sites to which people are no longer attached are more likely to be abandoned for better opportunities, and less likely to be defended in the face of unwanted change (Stedman 2001). We may be able to consider an indicator of effective rural policy the degree to which such policy maintains (or increases) place attachment.

Photo approaches seem potentially quite useful for understanding place attachment. Photos can represent multiple elements simultaneously, and hence avoids problems with dichotomizing phenomena into “either/or” categories. Photographic methods also anchor the participant in real sites in the landscape; these sites in turn are linkable to “on the ground” policy: what kinds of experiences, meanings, and attachment are tied to what types of policy (e.g., zoning) decisions? Institutions can play a large role in driving meanings and attachment: either “directly” through communication of meanings (“this is what you should think and feel”), or indirectly, through the provision of certain experiences (Stedman 2003). Our research demonstrates that institutions such as Parks Canada may play a role in experiences and meanings; there surely are lessons for other high amenity communities that struggle with the challenges of allocating of certain land uses across certain areas, or balancing uses between potentially-competing interests. This competition over uses and meanings may be especially fierce in high amenity rural communities. Permanent residents of these places are not so easily juxtaposed against visitors and newcomers: they too appreciate the mountains, rivers, and forest. But knowing how their experience of place is simultaneously with the social and environmental, the contemporary and the historical, the spectacular and the mundane, may carry strong implications for effective rural development of high amenity places.

References


Brandenburg, A. M. & M. S. Carroll. (1995.) Your place or mine?: The effect of place creation on environmental values and landscape meanings. Society and Natural Resources, 8, 381-398.


### Table 1. Participan Characteristivcs

<table>
<thead>
<tr>
<th>Category</th>
<th>Jasper (N=23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
</tr>
<tr>
<td>Age Groups</td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>2</td>
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<tr>
<td>25-34</td>
<td>4</td>
</tr>
<tr>
<td>35-44</td>
<td>8</td>
</tr>
<tr>
<td>45-64</td>
<td>6</td>
</tr>
<tr>
<td>65 and above</td>
<td>3</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>0-2 years</td>
<td>4</td>
</tr>
<tr>
<td>3-5 years</td>
<td>5</td>
</tr>
<tr>
<td>10-29 years</td>
<td>6</td>
</tr>
<tr>
<td>30 years and more</td>
<td>8</td>
</tr>
<tr>
<td>Born here</td>
<td>6</td>
</tr>
<tr>
<td>From away</td>
<td>17</td>
</tr>
</tbody>
</table>

### Table 2. Summary of categories created from the photographs and narratives

<table>
<thead>
<tr>
<th>Category</th>
<th>Socio-economic or Ecological</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation Infrastructure</td>
<td>S</td>
<td>Sports field; playgrounds</td>
</tr>
<tr>
<td>History and Heritage</td>
<td>S</td>
<td>Memorials; old churches</td>
</tr>
<tr>
<td>Family and Friends</td>
<td>S</td>
<td>Relatives; friends</td>
</tr>
<tr>
<td>Home</td>
<td>S</td>
<td>House; garden; yard</td>
</tr>
<tr>
<td>Work</td>
<td>S</td>
<td>Job, activities; co-workers</td>
</tr>
<tr>
<td>Social Cohesion and community</td>
<td>S</td>
<td>Pride in volunteers; town festivals; landmarks</td>
</tr>
<tr>
<td>opportunity/area</td>
<td>E</td>
<td>Hiking trails, hunting spots</td>
</tr>
<tr>
<td>Landscape/Natural assets</td>
<td>E</td>
<td>General beauty; sunsets</td>
</tr>
<tr>
<td>Forest Area</td>
<td>E</td>
<td>Specific forest lands</td>
</tr>
<tr>
<td>Water Area</td>
<td>E</td>
<td>Lakes, shores, beachcombing</td>
</tr>
<tr>
<td>Flora/fauna, Natural things</td>
<td>E</td>
<td>Flowers; animals; habitat</td>
</tr>
<tr>
<td>Work place or type</td>
<td>E</td>
<td>Natural employment setting</td>
</tr>
</tbody>
</table>
Out-Migration from the Northeast US: The Roles of Economic and Amenity Differentials

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Madison migration paper Shields et al.doc
Abstract

Population growth in many parts of the Northeast has been stagnant for the past 50 years compared to other regions. This has had important consequences, including the loss of congressional seats after the 2000 US Census. In this paper we study gross migration flows out of Northeast states. Drawing on previous work, we offer a theoretical framework that suggests amenities and labor market conditions play an important part in individual migration decisions. We then turn our attention to empirical analysis of these factors' influence on county-to-county migration patterns, using data from the 2000 Census. While migration determinants have been oft-addressed in the literature, there are a number of critical specification issues that have received scant attention in econometric studies. The consequence is that our understanding of the relative importance of various hypothesized factors may not be complete. In this paper, we present empirical evidence from new parametric and non-parametric models that account for both "preference bundling" and zero-migration flows.

1. Introduction

Population growth in a number of Northeast states and sub-state regions has long been stagnant. [Insert numbers for the Northeast and other regions] For example, while Pennsylvania's population (12.2 million) has grown by only 4 percent since 1970, the US has grown by 38 percent. This is consistent with long term trends. Since 1950, Pennsylvania's population increased by just 17 percent, while the US has grown by 86 percent. This has a number of implications, including the fact that the state lost two congressional seats from 1990-2000.

One of the most important causes of this relative decline in population is a substantial net out-migration from the state. According to the US Census Bureau, Pennsylvania ranked 8th among all states in net out-migration for the period 1995-2000. From 1995-2000, 669,000 people moved into the state, while 800,000 left the state, resulting in a net loss of 131,000 people. The state's in-migration rate of 56 people per 1000 residents ranked the state 8th lowest in the nation.

In this paper we take a closer look at gross out-migration for Northeast states over the period 1995-2000. Specifically, we examine the Census Bureau's county-to-county migration data in a family of econometric models in an attempt to better understand the relative importance of various factors hypothesized to affect household location decisions, particularly amenities and employment opportunities. Overall, we find that out-migration from Northeast counties is driven by employment opportunities, earning differentials and, especially, amenity differentials. This is an important finding because it provides clues about the relative likelihood of success of alternative strategies for reversing out-migration.

This paper contains four remaining sections. In the next section we briefly review the migration literature, emphasizing recent findings on employment and amenities. We then offer descriptive statistics on the roles of three sets of relative variables in out-migration: amenities, earnings, and unemployment and employment growth. In section four we develop econometric models to examine gross out-migration for the Northeast counties, each examining the three sets of relative variables as well as several other local characteristics. In the final section we offer preliminary conclusions and directions for future research.

2. Literature

Regional migration theory is rooted in the expected utility framework of microeconomics. In a household location framework, the problem is one of choosing the location (r) that maximizes the household's utility subject to regional prices and income:
\[ v(p, y; \theta) = \max u(x; \theta) \quad \text{if} \quad p_x = y, \]

The function \( v(p, y; \theta) \) is an indirect utility function, which gives the maximum utility attainable at given local prices \( p \) and income \( y \). Accounting for moving costs, if a household expects to attain greater utility in a different region, there is a high likelihood it will move. Simply put, the probability that a household will move to region \( j \) from region \( k \) is:

\[ Pr(\text{migrate}) = Pr(E(v_j(p, y; \theta)) > E(v_k(p, y; \theta))) \]

where \( E(v_j(p, y; \theta)) \) is the expected indirect utility of the household. Given this simple framework, the relevant migration factors are those that affect the consumption bundle (e.g., regional prices and wages) as well as place and preference arguments of the household utility function (e.g., expected employment stability and local amenities).

Nearly all studies that investigate regional migration focus on how regional differences in expected income and amenities determine migration behavior. Equilibrium in such a system is characterized in terms of zero net migration, where expected income differentials compensate for differences in local amenities (Graves, 1979; Molho, 1965). Greenwood (1975; 1985), Clark (1982) and Mueller (1982) each give detailed histories of the theoretical and empirical developments in migration theory.

**Empirical Evidence on the Income and Employment Determinants of Migration**

The role of expected income in the household migration decision depends on differential economic opportunities that consist of two parts—the expected wage and the probability of receiving that wage (Treyz et al., 1993). Regarding expected wages, migration theory focuses on earnings differentials across regions. Appealing to the neoclassical theory of factor mobility, it is argued that labor responds to wage rate differentials by moving until a new equilibrium is reached (e.g., Borts and Stein, 1964; Smith, 1974; 1975). While regional wage differentials have (halfly) declined over time (Dicken and Gerking, 1989), empirical evidence suggests they have not yet fully equilibrated (Eberts and Schwartz, 1994). Still, it is clear that migration has led to a decline in inter-regional wage variations, though the process has been fairly lengthy (Greenwood and Hunt, 1984).

One difficulty with these early migration studies is that they assume full employment, with wages changing until the market clears (Isserman et al., 1986). Absent these conditions it is important to examine the probability that a household will receive the regional wage when investigating expected income. Accordingly, the second component of relative economic opportunity is the probability of getting a job.

While the basic concept is simple, determining the probability of employment is tremendously difficult. As noted by Isserman et al. (1986), information is needed on job vacancies and the number of people seeking work (including discouraged workers who would reenter the job market if a job became available); these data are not generally available at any level. Because of these difficulties, a number of proxies for opportunity have been used as determinants of migration. These opportunity measures include population (Greenwood and Sweetland, 1972), the employment-to-population ratio (Dahlberg and Holmmand, 1978), and the number of new hires (Fields, 1976; 1979).

The most prevalent measures of opportunity, though, are employment and employment growth (e.g., Muth, 1971; Duffy and Greenwood, 1980; Piuits, 1982; Bartik, 1993). Muth (1971) provides an early investigation into the importance of job opportunities in explaining net migration. Using data for urban areas in the 1950s, Muth finds that both jobs and wages are important in the household migration decision. Treyz et al. (1993) provide recent support for the importance of relative regional wages and employment opportunities on migration in the US.

When examining the effect of employment on migration it is necessary to also consider local unemployment. In the household's expected utility decision, areas with high relative local unemployment offer a lower expected probability of employment, leading to lower expected earnings. Thus, regions with high unemployment are unlikely to attract in-migrants, while current residents that are currently unemployed may move elsewhere. Graves (1979) provides evidence that in-migration is minimal in areas with relatively high local unemployment rates.

**Empirical Evidence on the Location Specific Determinants of Migration**

A second aspect considered in migration studies is the importance of location-specific amenity factors such as weather and public services. The theoretical argument is that amenities provide non-earnings-based utility to households, drawing new residents to the region (Graves, 1979; Graves and Linneman, 1979). In this framework, equilibrium is achieved as people move into an amenity rich region, increasing the local labor supply and subsequently reducing wages to the point that regional wage differentials exactly compensate for local amenities.

Graves (1979) provides one of the earliest examinations into the importance of weather in household location decisions. Examining net population migration in the 1960s, Graves demonstrates that when income levels and unemployment rates are taken into account, certain climatological amenity variables are important. These variables include the influence of heating and cooling-degree days, annual temperature variance, relative humidity and wind speed. Other researchers have investigated the importance of local public services on the migration decision. In a survey of migration and the local level of local public services Chamey (1993) concludes that higher levels of public expenditures on a
number of goods serve as an incentive for migration. Of course, higher expenditures could also mean higher taxes, a factor that can discourage the household location decision (Yinger, 1982).

In sum, the theoretical and empirical evidence suggests that expected earnings, regional employment opportunities and locational amenities influence migration. From this, the basic migration modeled looks like:

\[ migration = m(empgrow, relwage, relunemp, A) \]

where emprow is local employment growth, relwage is the relative average local wage, relunemp is relative local unemployment, and A is a vector of location-specific amenities.

3. Conditional Expectations

As the recent literature suggests, regional scientists continue to struggle with sorting out the relative importance of amenities and employment opportunities in household migration decisions. In this section, we provide nonparametric analysis of select relative conditions in order to provide an initial investigation into these factors. Specifically, we examine the proportion of movers who migrated to "better" places, considering several separate regional factors.

The first step is to create a county specific data set for each US county. This dataset contains information on a set of amenities, employment growth, unemployment rates and earnings per worker. We then merge this data set with the county-to-county migration data from the 2000 census, which tracks the number of people moving between 1995 and 2000. We then have several attributes of the origin and destination counties and a count of the number of people who moved from one county in the Northeast states to another county outside of the Northeast states.

The next step is to examine the proportion of members of the population who improve their lot with respect to each of the hypothesized factors. Specifically, we examine the frequency of the two possible outcomes:

\[ IMPROVE_i = 1 \text{ if } CONDITION_i > CONDITION_i \] else \[ IMPROVE_i = 0 \]

Here, CONDITION refers to characteristics of region i and j. The variable IMPROVE takes on a value of one if the destination county is "better" than the origin county with respect to a particular indicator. For example, if a destination county has a higher level of amenities than the origin county, then the move is said to be improving.

In the third step, we sum the number of people who make an improving move and divide it by the total number of people who move to determine the proportion of the population that potentially sought and obtained a particular attribute.

For the CONDITION variable we consider the following attributes: unemployment rate, recent employment growth, earnings per worker, natural amenities, housing affordability, recreational services, superfund sites, political competition, cancer rate, crime rate, and student-to-teacher ratio. We measure these attributes at the county-level. Because the Census data shows that a large proportion of out-of-state moves are made to contiguous states, we also offer conditional rates for moves to contiguous states.

The unemployment rate is for 1995, and is derived from the Bureau of Labor Statistics Local Area Unemployment Statistics (LAUS) for each county. The employment growth variable is the moving average of annual percent change in total employment for 1994, 1995 and 1996. The earnings per worker are calculated by personal earnings divided by employment for each county in 1995. The employment and earnings data are drawn from Bureau of Economic Analysis Regional Economic Information System (BEA-REIS) for U.S. counties.

The natural amenities data were obtained through the ERS (1999) and they assign a score based on environmental qualities that people are purported to prefer. The components of this measure that enhance a location's livability are: warm winter, winter sun, temperate summer, low summer humidity, topographic variation, and water area. These six variables were scored and combined to form a natural amenities scale, which is continuous and is used in the econometric specifications. From this scale, a discrete ranking system was computed with a range of 1 to 7, where 1 is a low natural amenity rank and 7 is a high rank.

The housing affordability is calculated as the median housing value divided by the median household income for each county in 1989 and is drawn from the 1990 US Census. The recreational service variable is measured using establishment counts of amusement and recreational facilities and museums, zoological and botanical gardens. This is extracted from the County Business Patterns CD for 1995. The superfund data are obtained from the Environmental Protection Agency's website and represent the total number of superfund sites in a county on the National Priority List in 1990. Political competition is defined as the absolute value of the difference between a county's vote for the democratic candidate in 1992, and the national vote (Rupasingha and Goetz, 2003); a higher value of this variable indicates less local competition among the political parties.

The cancer risk variable represents the index of an Average Individual's Added Cancer Risk per 1,000,000, which is the individual's estimated additional risk of getting cancer due to lifetime exposure to outdoor hazardous air pollutants in a county. These data are based on EPA exposure estimates derived from 1990 emissions data (see Goetz, et al. for details). The crime rate is measured as
serious crimes per 100,000 populations from USA Counties CD-ROM for 1995. The student-to-teacher ratio is derived from National Center for Educational Statistics Common Core of Data for each county for school year 1995. Summary statistics for these variables are provided in Table 1.

### Table 1. Summary Statistics for all Northeast counties.

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>County-county outflow</td>
<td>89.10</td>
<td>715.59</td>
<td>17.00</td>
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<tr>
<td>Unemployment rate (%) difference</td>
<td>-0.84</td>
<td>4.10</td>
<td>-0.93</td>
</tr>
<tr>
<td>Employment growth rate difference</td>
<td>1.07</td>
<td>2.82</td>
<td>0.93</td>
</tr>
<tr>
<td>Earnings per worker ($1000) difference</td>
<td>-4.42</td>
<td>8.31</td>
<td>-4.09</td>
</tr>
<tr>
<td>Natural amenity rank difference</td>
<td>0.10</td>
<td>1.21</td>
<td>0.00</td>
</tr>
<tr>
<td>Housing affordability difference</td>
<td>-0.73</td>
<td>1.40</td>
<td>-0.89</td>
</tr>
<tr>
<td>Recreational service difference</td>
<td>-48.30</td>
<td>217.44</td>
<td>-19.00</td>
</tr>
<tr>
<td>Superfund sites difference</td>
<td>-1.08</td>
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<td>0.00</td>
</tr>
<tr>
<td>Political competition difference</td>
<td>1.54</td>
<td>9.04</td>
<td>1.20</td>
</tr>
<tr>
<td>Cancer risk difference</td>
<td>-66.02</td>
<td>156.52</td>
<td>-39.00</td>
</tr>
<tr>
<td>Crime rate difference</td>
<td>127.61</td>
<td>285.08</td>
<td>-115.00</td>
</tr>
<tr>
<td>Student teacher ratio difference</td>
<td>0.50</td>
<td>3.99</td>
<td>0.40</td>
</tr>
</tbody>
</table>

From this table, we see that the average outflow to another state from a Northeast county was 89 people. We also see that the destination counties, on average, had lower unemployment rates, higher 3-year average employment growth rates, better natural amenities, better housing affordability (a lower ratio of housing value to household income), fewer superfund sites, and a lower cancer risk. However, the destination counties, on average, also had lower average earnings per worker, less political competition, lower recreational services, as well as a higher crime rate and student-to-teacher ratio (classroom size).

The results for the share of out-migrants from the Northeast who make "improving moves" support the hypothesis that regional differences matter (Table 2). Of all out-migrants, 68 percent moved into labor markets with faster employment growth and 60 percent moved into labor markets with lower unemployment rates. Only 37 percent of all out-migrants made "amenity-improving" moves and 35 percent made earnings-improving moves. Greater housing affordability (54.5%) and lower cancer risk (60.7%) were also important factors.

### Table 2. Percent of Northeast Out-Migrants Making "Improving" Moves

<table>
<thead>
<tr>
<th>Category</th>
<th>All States</th>
<th>Non-Adjacent States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment</td>
<td>59.58</td>
<td>60.76</td>
</tr>
</tbody>
</table>

Overall, then, we find preliminary evidence that people leaving the Northeast states were responding in a manner that was fairly consistent with the hypotheses.

### 4. Econometric Models

In this section we return to the theoretical migration framework described above, and present an econometric model of gross in- and out-migration flows for Pennsylvania. Specifically, we model the following (with $Δ$ denoting the simple difference in the value of the variable in the destination county minus that in the origin county):

$$
\text{number of migrants}_{ij} = \hat{f}(Δ\text{unemployment rate}_{ij}, Δ\text{employment growth rate}_{ij}, Δ\text{earnings per worker}_{ij}, Δ\text{natural amenity rank}_{ij}, Δ\text{housing affordability}_{ij}, Δ\text{recreational service}_{ij}, Δ\text{superfund site}_{ij}, Δ\text{political competition}_{ij}, Δ\text{cancer risk}_{ij}, Δ\text{crime rate}_{ij}, Δ\text{student teacher ratio}_{ij}, Δ\text{adjacency}_{ij})
$$

We also estimate separate equations for the number of out-migrants from each county of any particular Northeast state to county $j$ in a different state. We estimate equations for the 12 Northeast states of Pennsylvania, New York (without New York city), New Jersey, Maryland, Delaware, Massachusetts, Connecticut, Rhode Island, New Hampshire, Maine, Vermont and West Virginia.

Most measures capture the differences between a particular indicator in the destination county and the origin county. Population (1995) in the origin county is included to control for the pool of potential migrants at risk of out-migration. Adjacency is a dummy variable that takes a value of 1 if the destination county is in a state contiguous to the origin county. Its inclusion is designed to control for "attachment" factors, such as proximity to family and friends. Two dummy variables are included to control the origin county's urbanization and adjacency to metropolitan areas. The variables are derived from 1993 rural-urban continuum code (Balse code) from Economic Research Service.
For the total Northeast out-migration equation we use three estimation procedures. First, we consider only those instances where a migration flow is observed between two counties (i.e., \( m_{ij} \geq 0 \)). For the Northeast, this criterion yields 86,034 observations. The general model we estimate is:

\[ y_{ij} = x_{ij} \beta_2 + e_{ij}, \quad e_{ij} | x_{ij} \sim N(0, \sigma_e^2) \]

where

\[ y_{ij} > 0 \]

This would be the simple OLS model were it not for the restriction. However, the use of OLS in this case results in inefficient parameter estimates. Instead a truncated regression via a maximum likelihood estimator is the appropriate method (Hayashi (2003) derives the estimator).

Results of this estimation are provided in the second column of Table 3. Because of the large sample size, it is not surprising that most variables are statistically significant at the 1 percent level.

<table>
<thead>
<tr>
<th>Variable</th>
<th>OLS</th>
<th>Truncated</th>
<th>Tobit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>49.01***</td>
<td>-1603.00***</td>
<td>-605.61***</td>
</tr>
<tr>
<td>Unemployment rate difference</td>
<td>-1.02</td>
<td>-12.15***</td>
<td>0.62**</td>
</tr>
<tr>
<td>growth rate difference</td>
<td>-4.30</td>
<td>-42.52***</td>
<td>2.07***</td>
</tr>
<tr>
<td>earnings per worker difference</td>
<td>1.92</td>
<td>13.78***</td>
<td>9.86***</td>
</tr>
<tr>
<td>Natural amenity difference</td>
<td>-2.21</td>
<td>-22.62***</td>
<td>8.52***</td>
</tr>
<tr>
<td>Housing affordability difference</td>
<td>12.79</td>
<td>115.84**</td>
<td>61.47**</td>
</tr>
<tr>
<td>Recreational service difference</td>
<td>0.06</td>
<td>0.16</td>
<td>0.34***</td>
</tr>
<tr>
<td>Super fund sites difference</td>
<td>3.74</td>
<td>28.85**</td>
<td>-0.17 **</td>
</tr>
<tr>
<td>Political competition difference</td>
<td>0.47</td>
<td>4.15**</td>
<td>1.02**</td>
</tr>
<tr>
<td>Origin population</td>
<td>0.19</td>
<td>0.78</td>
<td>0.78***</td>
</tr>
<tr>
<td>Adjacent state</td>
<td>19.26</td>
<td>139.60***</td>
<td>349.38***</td>
</tr>
<tr>
<td>Rural, adjacent to metro</td>
<td>-36.58***</td>
<td>-418.54***</td>
<td>-238.82***</td>
</tr>
<tr>
<td>Rural, not adjacent to metro</td>
<td>-41.49***</td>
<td>-482.50***</td>
<td>-392.92***</td>
</tr>
<tr>
<td>Cancer risk</td>
<td>0.13</td>
<td>1.60</td>
<td>0.44**</td>
</tr>
<tr>
<td>Crime rate</td>
<td>-0.0002***</td>
<td>-0.015***</td>
<td>0.0023**</td>
</tr>
<tr>
<td>Student-teacher ratio</td>
<td>-1.56***</td>
<td>-12.02***</td>
<td>7.80**</td>
</tr>
</tbody>
</table>

Adj-R2: 0.0153
LogL: 86034
Number of observations: 86034
Nonzeroed values: 86034

* P<0.1, ** P<0.05, *** P<0.01

Sample results are as follows. For every one percentage point lower unemployment rate, 12 more people moved out of Northeast county. ceteris paribus (truncated model). A one-point higher amenity index score led to 23 fewer people moving to the comparison county; this is non inconsistent with the earlier (unconditional) analysis showing that only about one-third of movers achieved gains in terms of natural amenities. The coefficient for differences in employment growth is not statistically significant in truncated regression model. Every one-thousand dollar higher average earnings per worker in a destination county led to 13 more movers to that county; this is expected when one considers the basic migration theory. As expected, adjacency seems to be an important destination characteristic. Residents living in rural counties (either adjacent or not adjacent to metro areas) are less mobile compared to their urban counterparts.

While the truncated model offers an improvement over OLS, information is lost by restricting the model to only those cases where positive migration flows are observed. But it may be as important to consider the fact that people did not move from one county to another as it is to consider the observed migrations. In general, if people move to "better" labor markets and "better" places to live (in terms of amenities) one would expect very little migration to "inferior counties." Thus, use of a truncated sample could still result in selection bias. The Tobit model allows us to properly consider a mass of zeros, which characterizes the county to county out-migration vector. Hayashi (2003) provides the derivation of the maximum likelihood estimator. The basic form of the Tobit model is:

\[ y_{ij} = x_{ij} \beta_2 + e_{ij}, \quad e_{ij} | x_{ij} \sim N(0, \sigma_e^2) \]

\[ y_{ij} = y'_{ij} \quad \text{if } y_{ij} > 0 \]

\[ 0 \quad \text{if } y'_{ij} = 0 \]

We present the Tobit results in the third column of Table 4. Here, we interpret the parameters as the effect of various characteristics on the likelihood of moving to any particular county. For example, we expect 349 people to move to a county in an adjacent state, ceteris paribus.

Overall, more than half of the signs are consistent with those from the truncated model. The notable exceptions are the employment growth rate difference, natural amenity difference, unemployment rate difference, student teacher ratio, superfund site difference and crime rate. The employment growth rate difference is now positive, as predicted by theory. In this specification, every one-percentage point higher employment growth rate in a destination county is associated with 2 additional out-migrants to that county. A one-point higher natural amenity index differential attracts 9 out-migrants to that county. The sign on the unemployment rate became positive in Tobit model. However, the coefficient is only marginally significant given the large number of observations in
Table 5. Out-migration estimation results for the Northeast states.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>Northeast</th>
<th>Pennsylvania</th>
<th>New York</th>
<th>New Jersey</th>
<th>New Hampshire</th>
<th>Maine</th>
<th>Vermont</th>
<th>West Virginia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-3.05</td>
<td>-2.98</td>
<td>-3.08</td>
<td>-3.32</td>
<td>-2.97</td>
<td>-2.99</td>
<td>-2.86</td>
<td>-2.81</td>
<td>-2.87</td>
</tr>
<tr>
<td>Unemployment rate difference</td>
<td>0.52</td>
<td>0.51</td>
<td>0.52</td>
<td>0.53</td>
<td>0.52</td>
<td>0.52</td>
<td>0.52</td>
<td>0.51</td>
<td>0.51</td>
</tr>
<tr>
<td>Growth rate difference</td>
<td>2.48</td>
<td>2.46</td>
<td>2.48</td>
<td>2.49</td>
<td>2.46</td>
<td>2.48</td>
<td>2.45</td>
<td>2.49</td>
<td>2.48</td>
</tr>
<tr>
<td>Earnings per worker difference</td>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
<td>0.86</td>
<td>0.85</td>
<td>0.86</td>
<td>0.85</td>
<td>0.86</td>
<td>0.86</td>
</tr>
<tr>
<td>Natural disaster difference</td>
<td>8.33</td>
<td>8.45</td>
<td>8.31</td>
<td>8.29</td>
<td>8.33</td>
<td>8.30</td>
<td>8.30</td>
<td>8.29</td>
<td>8.29</td>
</tr>
<tr>
<td>Recreational service difference</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
</tr>
<tr>
<td>Labor force participation difference</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
</tr>
<tr>
<td>Political competition difference</td>
<td>0.29</td>
<td>0.28</td>
<td>0.28</td>
<td>0.28</td>
<td>0.29</td>
<td>0.28</td>
<td>0.28</td>
<td>0.28</td>
<td>0.28</td>
</tr>
<tr>
<td>Degree of urbanization</td>
<td>0.66</td>
<td>0.65</td>
<td>0.65</td>
<td>0.65</td>
<td>0.66</td>
<td>0.65</td>
<td>0.65</td>
<td>0.65</td>
<td>0.65</td>
</tr>
<tr>
<td>Crime rate</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
</tr>
<tr>
<td>School teacher ratio</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
</tr>
<tr>
<td>Adjacent state</td>
<td>8.33</td>
<td>8.33</td>
<td>8.33</td>
<td>8.33</td>
<td>8.33</td>
<td>8.33</td>
<td>8.33</td>
<td>8.33</td>
<td>8.33</td>
</tr>
<tr>
<td>Rural, not adjacent to metro</td>
<td>-0.95</td>
<td>-0.95</td>
<td>-0.95</td>
<td>-0.95</td>
<td>-0.95</td>
<td>-0.95</td>
<td>-0.95</td>
<td>-0.95</td>
<td>-0.95</td>
</tr>
</tbody>
</table>

LogL: -79836.11
Number of observations: 722984
Nonzero values: 88034

Table 6. Out-migration estimation results for the Middle and South Atlantic states.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>North</th>
<th>South</th>
<th>Middle</th>
<th>Atlantic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-2.96</td>
<td>-3.04</td>
<td>-2.92</td>
<td>-2.96</td>
<td>-2.94</td>
</tr>
<tr>
<td>Unemployment rate difference</td>
<td>0.52</td>
<td>0.52</td>
<td>0.52</td>
<td>0.52</td>
<td>0.52</td>
</tr>
<tr>
<td>Growth rate difference</td>
<td>2.49</td>
<td>2.49</td>
<td>2.49</td>
<td>2.49</td>
<td>2.49</td>
</tr>
<tr>
<td>Earnings per worker difference</td>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
<td>0.85</td>
</tr>
<tr>
<td>Natural disaster difference</td>
<td>8.30</td>
<td>8.30</td>
<td>8.30</td>
<td>8.30</td>
<td>8.30</td>
</tr>
<tr>
<td>Housing affordability difference</td>
<td>8.12</td>
<td>8.12</td>
<td>8.12</td>
<td>8.12</td>
<td>8.12</td>
</tr>
<tr>
<td>Recreational service difference</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
</tr>
<tr>
<td>Labor force participation difference</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
<td>-0.12</td>
</tr>
<tr>
<td>Political competition difference</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
</tr>
<tr>
<td>Degree of urbanization</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
<td>0.66</td>
</tr>
<tr>
<td>Crime rate</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
<td>0.0015</td>
</tr>
<tr>
<td>School teacher ratio</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
</tr>
<tr>
<td>Adjacent state</td>
<td>8.36</td>
<td>8.36</td>
<td>8.36</td>
<td>8.36</td>
<td>8.36</td>
</tr>
<tr>
<td>Rural, not adjacent to metro</td>
<td>-0.93</td>
<td>-0.93</td>
<td>-0.93</td>
<td>-0.93</td>
<td>-0.93</td>
</tr>
</tbody>
</table>

LogL: -70923.11
Number of observations: 72563
Nonzero values: 88034

In Table 5, we provide the estimates for out-migration from the Northeast states. The 
model results show an unexpected positive sign for the interaction between the number of federal workers and the unemployment rate difference. This suggests that increased federal employment may lead to higher out-migration from these states.
There are many similarities among Northeast states in terms of the factors accounting for out-migration. For example, except for West Virginia, 11 Northeast states have consistent negative signs on the unemployment rate difference. A one-percentage point lower unemployment rate difference will lead to between 2 and 42 out-migrants in different Northeast states. In general, employment growth rate differences also have expected signs in most Northeast states. A one-percentage point higher employment growth rate in a destination county is associated with between 2 and 27 out-migrants to that county. The earnings differences appear to be a reliable predictor for out-migration across Northeast states. The coefficient for this variable is statistically significant, with positive signs. Similarly, the housing affordability also has consistent positive sign across Northeast states in out-migration. This variable may be better interpreted as a control for cost-of-housing differentials between destination and origin counties.

Natural amenities are rather important in out-migration decisions. In most states, a higher amenity index in the destination county will lead to more out-migrants to that county, except in the cases of New York, Delaware, and West Virginia. Once again, out-migration is driven by adjacency; with the exception of Rhode Island, out-migrants from all other Northeast states move into a county in a state adjacent to the state containing the origin county. Recreational services also have the expected effect on out-migration. An increase in destination county recreational services will increase the number of out-migrants to that county.

Superfund sites, cancer risk and crime rate have unexpected effects on out-migration from most Northeast states. These variables may be correlated with origin population, and the results for these variables should be interpreted with caution.

5. Discussion and Conclusions

Our results support a number of conclusions. First, our non-parametric and parametric methods show that employment opportunities, earnings differentials and natural amenities are important factors in out-migration decisions. These results are relatively robust across different Northeast states. Thus, we conclude that relative labor market conditions, such as employment growth, unemployment rate, and earning differential are important in individuals' out-migration decisions.

Our second notable finding concerns the role of various amenities. We considered several measures, including natural amenities index, superfund sites, political competition, cancer risk, crime data and student-teacher ratio. In general, we found that amenities are important determinants of out-migration from most Northeast states. However, other measures provide unexpected results. We tentatively conclude that other location-specific amenities (except natural amenities) are also important determinants. However, since we already considered labor market conditions, earning differentials and natural amenity in the estimation, the net effect of the other amenity differences may not be substantial. The measures of other amenities may also be subject to multicollinearity. We will examine this issue more closely in the future.

As a last point of departure, we intend to take a closer look at the extent and nature of rural-metro differences. The current analysis shows that a relatively high propensity exists for metro residents to move out of the state. However, rural residents may have different motivations for out-migrating than metro residents and we will examine their out-migration decisions separately.

References


Seasonal Residents: Members of Community or Part of the Scenery?
Greg Clendinning and Donald R. Field
University of Wisconsin-Madison
Department of Forest Ecology and Management

Amenity rich rural areas in the United States have experienced rapid population growth and
dramatic social and economic transformations over the past 30 years. Growth and development
is sometimes characterized not only by population growth of permanent residents but also by
dramatic increases in the numbers of non-permanent residents such as seasonal homeowners.
Seasonal homeowners, while not considered in population estimates, often have significant
impacts on the social fabric of communities. The limited body of research on seasonal
homeowners suggests that these temporary residents are socially isolated from their host
communities, almost to the extent of forming a distinct and parallel community to that of year
round residents. This paper examines the social integration, or lack thereof, of seasonal
homeowners in one particular amenity rich region: the Pine Barrens of northwestern Wisconsin.
Using data from a mail survey administered to 800 households, the social ties, community
participation and perceived integration of seasonal residents is examined.
"There is a real commitment to take care of the community, shared by people who live here full-time and those who come for summers," said Kate Wanner, a New York novelist. (Hughes 2004, p. 56)

Introduction

Rural regions across the United States, particularly those rich in natural amenities, have been experiencing dramatic demographic, social and economic transformations over the past 30 years. One of the key characteristics of this rural change has been substantial population growth due largely to in-migration of urban residents to rural settings. Migrants include retirees seeking a life in the rural countryside, younger newcomers looking for a slower pace of life and work environment and professionals who can commute to work or work remotely from their place of urban employment (Beale and Johnson 1998, Beyers and Nelson 2000, Davis et al. 1994, Frey and Johnson 1998, Johnson and Fuguit 2000, McGinnaham 1999, Nelson and Doeker 1990).

One aspect of rural regional change that has been largely ignored is change due to the rapid increase in the number of seasonal homeowners since the 1960s (American Society of Planning Officials (ASPO) 1976, Green and Clendenning 2003, Marans and Wellman 1978). Though seasonal homeowners are not considered in population estimates they can have significant impacts on local infrastructure and services, surrounding natural resources, and community social structure (Fitchen 1991, Green and Clendenning 2003). As Fitchen (1991, p. 97) notes, "Recreational land development is not really a local demographic trend in the strict sense of the term, as it does not refer to people who reside in the area... But where it is occurring, it is an important population trend, in the broader sense, in that it represents a change in the relationship of people and places..." The impact of seasonal homeowners upon the quality of life in many communities located in amenity regions is an issue of contemporary concern to community leaders, rural planners and public land managers.

The literature on community is largely devoid of any discussion of the role of seasonal homeowners in the social fabric of rural communities. Instead, seasonal homeowners are generally considered to be tourists or an adversarial force that threatens the social and cultural well-being of the community. The popular image of the recreational home is that of a haven for personal renewal, where seasonal homeowners do not consider their time spent at the seasonal home as part of their real life. The U.S. Census Bureau defines seasonal homes as vacant units used or intended for use only in certain seasons, for weekends, or other occasional use throughout the year (U.S. Census Bureau 2002). The seasonal home represents an escape to spend time with family, recreating and relaxing (ASPO, 1976; Cross 1992, Halsey, 1998; Jackson, 1986). From this perspective the seasonal homeowner is a glorified tourist, a visitor and transient who is disconnected from and disinterested in local affairs. In addition, some research suggests that seasonal homeowners are socially isolated from their host communities, almost to the extent of forming a distinct and parallel community to that of permanent residents. For example, Halsey (1998) argues that the life and experiences of seasonal homeowners are "clearly separate from the rural milieu within which it is set (p. 20)." Seasonal homeowners are thought to have few, if any, social ties to the community, little attachment to the community as a social setting, and little, if any, social solidarity and cohesion with year-round residents. As Coleman observed: "...resort towns – are composed of 'natives,' a permanent, old-time group, and 'outsiders,' who are sometimes summer residents, sometimes year-rounders, but who in any case have come to town to rest or play, not to make a living (Coleman 1957, p. 7)." Similarly,
Burby (1971) argued “This is stark evidence of the tendency for recreational households to view themselves as creating communities of limited liability where they can temporarily escape the problem of their primary communities and ignore similar problems of the communities in which their second homes are located (Burby 1971, pp 133-134).” The extant literature has largely ignored the possibility that seasonal homeowners may in fact participate in community affairs, have extensive social networks, and feel socially integrated into the community.

This paper will explore the social integration of seasonal homeowners by examining the feelings of community attachment, social ties, and community participation of seasonal homeowners in an amenity rich rural region of northwestern Wisconsin. Of particular interest is the extent to which seasonal homeowners develop social ties with permanent residents or whether instead seasonal homeowners largely limit their social relations to other seasonal homeowners, developing parallel ‘communities of limited liability.’ This paper will work from the interactional perspective of community, in which social interaction is the critical element of community (see Luloff 1999, Wilkinson 1991). In this paper we will compare the levels of community attachment, social ties, and community participation of seasonal homeowners and permanent residents and examine the effects of sociodemographics on these same measures of community integration for seasonal homeowners.

Seasonal Homeowners and Host Communities

Much of the literature on seasonal homeowners focuses on the divisions and conflicts between seasonal homeowners and permanent residents. For example, Halseth’s (1998) study of two ‘cottaging’ regions in Canada (areas with an abundance of seasonal homes) outside of Ottawa and Vancouver focused on three themes affecting local communities: the physical and social separation of cottages and cottage owners from the rest of the community, and the antagonistic views of development held by residents and cottage owners. In the two study areas cottages are geographically isolated from the host community, concentrated on lakeshores. This geographic isolation has helped create in essence a second, parallel cottage community. Cottagers socialize together and organize to seek collective interests that are distinct from the host community.

While some community organizations include both cottagers and local residents, their conflicting interests preclude widespread socializing and forming of a common vision of the local community and landscape. Divisions are most evident in land use planning and development efforts, where cottagers seek to protect the landscape from development, preserving the lakes and forests as well as exclusivity of their cottages. Year-round residents, in contrast, tend to have mixed views of development. They recognize that development may provide economic opportunities, but they also see development as a threat to their lifestyles and control over local community (Halseth 1998).

Jordan (1980) provides another rare glimpse into the social relations and interactions between “summer people” (seasonal homeowners) and the permanent residents of a resort village in Vermont. In Jordan’s study (1980) the village residents, who are economically dependent upon tourism, struggle to remain socially distant and culturally distinct from the summer people. The summer people, for their part, wish to experience more ‘authentic’ aspects of rural village life as they spend more time and more summers at their homes. In response, residents have created elaborate and fake cultural events for the summer people such as festivals, church services, and parades. Authentic cultural events, such as weddings, governing and commuting are reserved for
winter when the summer people are conspicuously absent. Further differentiation between the
‘natives’ from the ‘summer people’ is the way in which they view the community. To residents,
the village is home, a place for family, work, raising children, while to seasonal homeowners it is
an escape from the drudgery of everyday life, a place for relaxation. Residents of the village hold
a three tenet public ideology: life in the village is simple and pure; residents are a select and
distinct group with a special heritage and identity; ‘and a view of life in Vacation Village as a
continual struggle pitting the natives against the summer people and tourists for control over the
land and way of life of the natives (p. 43).’ Thus, the influx of seasonal homeowners, while
economically beneficial, has been socially and culturally disruptive, leaving many residents of
the village despondent about the future of the village: “Native Vermonters tryply fear that most of
Vacation Village will eventually be owned by summer people, and the area will function as an
elaborate playground for tourism (p. 48).”

Struggles and divisions between seasonal homeowners and permanent residents over issues such
as land use, economic development and the environment are commonly found in the literature
(see Burby 1971, ASPO 1976, Gartner 1987, Girard and Gartner 1993, Green et al. 1996, Maranz
nd Wellman 1978). For example, Green et al. (1996) examined the attitudes toward land use
management and economic development among seasonal homeowners and permanent residents
in Forest County, Wisconsin. They found that permanent residents were less supportive of land
use regulations and much more supportive of economic development efforts than seasonal
homeowners. As seasonal homeowners spend more time at their seasonal homes their support for
land use controls increases. The authors suggest that as seasonal homeowners spend more time at
their home, they develop more extensive relationships with other seasonal homeowners. These
social relationships reinforce support for land use controls, attitudes at odds with permanent
residents. Thus, seasonal homeowners are thought to develop distinct communities that are
poorly integrated with permanent residents. Interestingly, those seasonal homeowners that felt
welcome in non-lake activities were more supportive of local economic development efforts.
Thus, those seasonal homeowners that developed social ties with permanent residents were
thought to develop shared interests in the community similar to those of permanent residents
(Greene et al. 1996). Similar conclusions were reached by Burby in his research of lakeshore
owners in North Carolina and Georgia: “Cleavages and conflicts between recreationists and
native residents in recreation areas may hinge on the extent to which households are integrated
into the life of shoreline neighborhoods and community organizations in nearby areas (Burby
1971, p. 115).” Burby (1971) argued that it is critically important to find ways to bridge
differences between recreational homeowners and permanent residents by promoting social
interaction and integration between the two populations.

Other research suggests that seasonal homeowners may indeed develop attachments, social
relations and ties to their seasonal home communities, bridging the differences between seasonal
homeowner and permanent resident. Recent work in sense of place has found that seasonal
homeowners develop attachments to their seasonal homes and the surrounding landscape
(Kaltenborn 1997a and 1997b, Stedman 2002). Buller and Hoggart’s (1994) study of British
seasonal homeowners in rural France found that seasonal homeowners generally fell into two
categories: those who wished to integrate into the local community and those who did not. In a
study of Swedish retirees who spent winters in Spain, Gustafson (2002) found that the retirees
tried to create a social space for themselves that was distinct from both tourists as well as the
Spanish community, a place between tourism and migration. The seasonal homeowners sought out places and experiences that were, in their minds, more authentically Spanish and local than what a tourist might experience. Though few Swedish seasonal homeowners immersed themselves completely into Spanish culture and society, many sought to temporarily adopt local customs and cultural behaviors while at their seasonal home. Gustafson argues that Swedish seasonal homeowners exist in a ‘grey world’ between migration and tourism as they have developed place attachments to both their permanent residence and their seasonal home. Their multiple place attachments in turn create ambiguous social roles, social categorization, self-identification and effect collective efforts to address social problems (Gustafson 2002).

Recent work by the geographer McHugh echoes Gustafson’s (2002) idea that seasonal homeowners inhabit a ‘grey world’ between migration and tourism: “It has become increasingly evident that many people live and spend time in more than one place, moving between locales on a recurrent basis. Despite this recognition, we have a limited understanding of the incidence, determinants, and consequences of multiple residences and associated forms of cyclical mobility (McHugh et al. 1995, p. 251).” McHugh and others argue that social ties and place ties are critical to developing a better understanding of mobility and migration.

From this review it is apparent that the social role of seasonal homeowners in their host communities is rather ambiguous. While some research argues that seasonal homeowners are tourists who have come to play and escape the problems of their home communities, there is evidence that seasonal homeowners develop deep attachments to their seasonal homes and social relations with residents of the communities. However, it is unclear the extent to which seasonal homeowners develop social ties with permanent residents, integrating into the community, or whether instead seasonal homeowners largely limit their social relations to other seasonal homeowners, developing parallel ‘communities of limited liability.’ Most research that has examined this question suggests social distinction between seasonal and permanent residents, but some research suggests that at least a sub-population of seasonal homeowners bridge the gulf between the ‘summer people’ and the ‘locals’ (see for example Buller and Hoggart 1994).

Thus, an examination of the relationships between seasonal homeowners and their host communities is in order. Are seasonal homeowners members of the local community? Are they attached to the community and are they interested in local affairs? Do they develop social ties? Do they participate in local affairs?

Community Theory

A brief review of community theory will help guide our examination of the relationship between seasonal homeowners and their host communities. Community will be examined as a multidimensional concept in which social interaction is the critical element. There are three fundamental elements of community: a geographic area, common ties and social interaction (Hillory 1955, p. 118; see also Wilkinson 1991). Similarly, Hunter (1975) suggests three theoretical dimensions of community:

1. Community as a functional spatial unit meeting sustenance needs;
2. Community as a unit of patterned social interaction;
3. Community as a cultural-symbolic unit of collective identity (p. 538).
These three theoretical dimensions of community are useful in guiding our understanding of the social role of seasonal homeowners, and these dimensions are widely adopted in the literature by a diverse group of scholars (see Greider et al. 1991, Kasarda and Janowitz 1974, Logan and Molotch 1987, Luleff 1990, Lyon 1989, Wilkinson 1979 and 1991). For example, Wilkinson defines a community by three critical elements: "...a locality, a local society, and a process of locality oriented collective actions (Wilkinson 1991, p. 2)." First, it is a locality or territory where people live and meet their daily needs together. Second, there is a local society, consisting of a comprehensive network of associations for meeting common needs and expressing common interests. Third, there is a holistic institutional structure through which the process of locality oriented collective actions takes place and local identity and solidarity are expressed (Greider et al. 1991, Luleff 1990, Wilkinson 1991).

This conceptualization has much in common with numerous other community scholars, including proponents of the systemic model of community social organization who conceptualize the local community as "a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and ongoing socialization processes (Kasarda and Janowitz 1974, p. 329)." Alternatively, Lyon (1989) describes the study of community as follows: "...to study people living in and identifying with a particular place and to give special attention to the type, quality and bases of their interaction (p.7)." Thus, the community is a multidimensional concept, rooted in social interaction, and encompasses sentiments of community attachment, identity, solidarity and cohesion (see also Greider et al. 1991).

This paper adopts the notion that the critical element of community is social interaction. As Wilkinson (1991, p. 11) explains, "Social interaction delineates a territory as the community locale; it provides the associations that comprise the local society; it gives structure and direction to processes of collective action; and it is the source of community identity." By interacting, individuals take the point of view of the other, building a social bond of shared meaning (Wilkinson 1991). This bond becomes a fundamental part of the individual's social being, connecting the individual to society through shared meanings. In this way, the community is a continuing social process in which people are engaged: "...it arises from a process of social interaction. In short, it is a social product (Hunter 1974, p. 194)." Similarly, Wilkinson argues "It is natural because people, by the nature of being human, engage in social relationships with others on a continuing basis and they derive their social being and identities from social interaction. Community, likewise, is ubiquitous by virtue of the fact that all people engage in it almost all of the time... (Wilkinson 1991, p. 18)." Thus, the community question appears open to examining the place of seasonal homeowners in a local community and society. Seasonal homeowners share a territory, albeit intermittently and for short periods of time, with the permanent residents of the community. As other research has shown, they identify with their home and the surrounding landscape – it is important to their self-identification and family relations. And the literature on migration has begun to recognize the "grey world" of seasonal homeownership in the migration process. Thus, seasonal homeowners are a poorly understood part of the local community.

The Setting: The Pine Barrens of Northwestern Wisconsin

This research was conducted in the Pine Barrens of northwestern Wisconsin, an area that covers 1,500 square miles and spans five counties. With over 12,000 lakes, the entire northern third of the state has been a tourist destination since the early 20th century as lakeside resorts and cottages
date back to the turn of the century (Gough 1997, Murphy 1931, WI Department of Natural Resources 1996). Our study focuses on the portion of the Pine Barrens that is located within two counties: Burnett and Washburn. These two counties are particularly rich in natural amenities, with over 1,400 lakes and thousands of acres of forests and public lands found within their borders. Located within a two-hour drive of the Minneapolis-St. Paul metropolitan region as well as several other mid-sized cities, the Pine Barrens is a highly desirable setting for seasonal home development, retirement, and ex-urban development. The two county sub-region of our study site is particularly impacted by seasonal homes as 45% of all homes in Burnett County and 35% of all homes in Washburn County are seasonal. In addition, since 1970, the number of seasonal homes has increased by 76 percent in Burnett County and by 112 percent by Washburn County (Northwest Regional Planning Commission (NWRPC) 2000, US Census Bureau 2001).

Research Question

The central research question of this paper is: To what extent are seasonal homeowners socially integrated into and attached to their host communities? Social integration and community attachment are perhaps best understood as a multifaceted phenomena that include a subjective feeling of sentiment (or affective attachment) and local social involvement or social interaction (see Fischer et al. 1977, Hunter 1974 and 1975, Kasarda and Janowitz 1974, Sampson 1988, Goudy 1990). Local social involvement is in turn multidimensional and includes local social ties (i.e. ties to family, friends and neighbors) and community involvement such as membership in local organizations, participation in civic activities and volunteer work. As Fischer et al. (1977) argue: "...attachment to place refers to individuals' commitments to their neighborhoods and neighbors. This commitment takes two general forms: social involvement and subjective feeling (p. 139).

Thus, our intent is to examine how seasonal homeowners participate in the local communities, how they interact socially with permanent residents and other seasonal homeowners, and how attached they are to the communities in which they own their seasonal homes.

In this paper we will begin with a simple comparison between seasonal and permanent residents on the two central aspects of social integration and community attachment:

1. Community sentiment (or affectual attachment)
2. Local social involvement, measured by:
   a. Social bonds
   b. Community involvement and participation

We will then focus on seasonal homeowners and examine the effects of sociodemographic variables on community sentiment and social involvement and interaction.

METHODS

Sampling

The target population of the study is the adult home-owning population of the Pine Barrens within Burnett and Washburn counties. The study population is defined as adults of households owning improved residential property that is located within the boundaries of the Pine Barrens within Burnett and Washburn counties, as defined by previous research (see NWRPC, 2000;

1 We limited our sample to residential property records with an improvement (i.e. a structure such as a house or mobile home). We excluded vacant residential property because we were interested in examining how homeowners (both seasonal and permanent) interacted in the communities and thought about resource management issues.

Using property tax records as the sampling frame, simple random sampling was used to draw the sample. Following procedures used by Girard and Gartner (1993), type of residence (seasonal and permanent) was determined by the zip code of the property tax billing address. Our sample consisted of 422 permanent residents (53% of sampled households) and 378 seasonal homeowners (47% of sampled households). The distribution of permanent and seasonal households in our sample approximates that of our population: the population contains approximately 55% permanent and 45% seasonal households.

Data Collection

Data were collected with a self-administered mail questionnaire. Prior to administration, the survey was peer reviewed and then pre-tested with two groups: a group of permanent residents and a group of seasonal homeowners. Pre-test participants were recruited with the help of a local University of Wisconsin Extension agent. A modified version of Dillman's (2000) Tailored Design Method was used to implement the survey with seven total mailings: a pre-notification letter, the survey, a reminder postcard, a replacement survey, 2 additional postcard reminders and a specially delivered third copy of the survey (Cleneding et al. 2004). These procedures yielded a response rate of 82.8% (n = 653). Return rates for seasonal homeowners and permanent residents were comparable, with seasonal homeowners having a slightly higher response rate of 85.4% (n = 317) compared to 80.4% (n = 336) for permanent residents.

Measurement Procedures

The survey instrument collected data on community sentiment and local social involvement. Community sentiment was measured in two ways. First, we measured interest in local affairs with Kanschel and Janowitz's (1974) survey question: "How interested are you in knowing what goes on in this community?" Respondents answered on a 5-point likert scale where very interested was scored as five and very disinterested was scored as one. Second, an additive scale measuring community sentiment and perceived social integration was used. We used a scale of four questions, previously used by Smith et al. (2001) and Kranzuch and Greider (1984). Respondents were asked to respond to the following statements using a 5-point likert scale (strongly disagree = 1, somewhat disagree = 2, neither agree nor disagree = 3, somewhat agree = 4, strongly agree = 5):

- The more time I spend in this community, the more I feel I belong
- I feel I am fully accepted as a member of this community
- If I was in trouble, most people in this community would go out of their way to help me
- Most people in this community can be trusted

The four items were combined into a scale that we have labeled "community attachment." The inter-item correlation of the four measures was high (cronbach's alpha = .826) and factor analysis found the items to be unidimensional (DeVellis 1991).

Local social involvement was measured by collecting data on local social bonds and on community involvement and participation. For local social bonds, the survey instrument was...
designed to collect data not only on a respondent's social ties in the community, but also to
determine the extent to which respondents had ties with the other type of resident. Using a
modified version of Fischer's (1982) question on social ties, respondents were asked to indicate
how many friends and family they had in the local community and within a one hour drive. In
addition, respondents were asked to indicate how many friends and family ties were permanent
residents and how many were seasonal residents. Similarly, respondents were asked to estimate
the percentage of their neighbors that were permanent residents and seasonal homeowners.
Finally, respondents were asked to indicate the frequency with which they socialized with the
other type of resident (never = 1, rarely = 2, sometimes = 3, often = 4)².

Community participation was measured in a three ways: by the number of community groups to
which residents belonged, the number of hours spent per month volunteering time for community
organizations (less than one hour per month, one to four hours per month, five to ten hours per
month, and more than ten hours per month), and participation in four community activities
during the past year (attending a community event, contacting a public official, working on a
community project, attending a public meeting).

Several demographic variables were included in our analysis: length of residence (measured in
years), number of days spent at the seasonal home (measured in days), likelihood of migrating to
the community (very unlikely = 1, somewhat unlikely = 2, somewhat likely = 3, very likely = 4),
age (measured in years), level of education (less than a high school degree = 1, high school
degree or GED = 2, some college = 3, 2 year technical degree = 4, four year college degree = 5,
advanced degree = 6), annual household income (less than $25,000 = 1, $25,000-$24,999 = 2;
$25,000-$49,999 = 3; $50,000 - $74,999 = 4; $75,000 - $99,999 = 5; over $100,000 = 6),
children (one or more child in the household = 1, no children = 0), and previous residence in the
Pine Barrens (previously resided in the Pine Barrens = 1, no previous residence = 0).

There are several anticipated effects of our demographic variables. Considering community
sentiment first, length of residence has consistently been found to be the strongest predictor of
affective attachment (Fischer et al. 1977, Gouby 1990, Kasarda and Janowitz 1974, Hummon
1992, Sampson 1988). In addition, higher levels of education and income, age and presence of
children are often associated with higher levels of affective attachment (Fischer et al. 1977,
and community participation, length of residence has also consistently been found to be the
strongest predictor of both. Higher levels of education and income are both associated with
community participation, but both are often associated with fewer local social ties. Fischer et al.
(1977) suggest that this is because wealthier, better educated individuals have more resources
with which they are able to retain strong social ties with physically distant friends and family,
and are thus less reliant on the local community for social ties. Increasing age is often associated
with increased community participation but lower numbers of family and friendship ties while
presence of children is associated with higher levels of community participation and local social
1988). Local social ties and community participation are in turn associated with community
sentiment. As Kasarda and Janowitz (1974) argue, the establishment of friendship and family
and local organization ties has the effect of strengthening community sentiment. In addition,
² For seasonal homeowners the question read: "How often do you interact with year-round residents?" For
permanent residents the question read: "How often do you interact with recreational homeowners (those people that
live here seasonally and those that come to visit their homes occasionally)?"
number of days spent at a seasonal home has been found by Kaltenborn (1997a and 1997b) to be
significantly associated with place attachments. It is quite possible that the amount of time spent
at the seasonal home, rather than the number of years of ownership, has a larger impact on
community sentiments, social ties and community participation. The likelihood of migrating was
used because past research has found that substantial proportions of seasonal homeowners intend
to retire to their seasonal residence or make it their full-time residence before retirement. We
suggest that this is similar to Freudenburg’s (1986) notion of anticipated length of residence.
Freudenburg (1986) argues that a person who expects to reside in a community for a long period
of time will have more incentive to develop social ties than someone who expects to leave the
community. We hypothesize that seasonal homeowners who intend to move to their seasonal
home on a full-time basis are more likely to develop social ties, become involved in community
affairs and feel more attached to the community. Further, we suggest that seasonal homeowners
who once resided in the community will have higher levels of attachment, more extensive social
ties and participate more in community activities, have more extensive ties with permanent
residents and socialize more often with permanent residents.

Analysis Procedures

Data were analyzed with SAS version 8 (SAS Institute, 1999). We used independent samples t-
tests to examine differences in mean levels of attachment and number of social ties between
seasonal homeowners and permanent residents. Chi square analysis was also used to test for
differences in social ties. We applied ordinary least squares (OLS) regression and logistic
regression to analyze the effects of the sociodemographic variables on community sentiment,
social ties and community participation. Community attachment, community interest, number of
friends (a continuous variable ranging from 0 to 100; any responses that were over 100 or that
were written as ‘hundreds’ were coded as 100), socializing with permanent residents and
attendance of community events (a summed scale ranging from 0 (no participation) to 4) were
analyzed with OLS regression. Family ties (1 = family ties, 0 = no family ties), having friends or
family ties with the permanent residents as binomial variables (one or more friend or family tie
with permanent residents = 1, absence of friend or family ties with permanent residents = 0),
membership in community groups (membership in one or more groups = 1, no group
memberships = 0) volunteering (one or more hours of volunteering per month = 1, less than one
hour of volunteering per month = 0) were analyzed with logistic regression.

RESULTS

No differences were found in level of interest in community affairs between seasonal
homeowners and permanent residents (see Table 1), but permanent residents have significantly
higher levels of attachment than seasonal homeowners (see Table 2). However, while seasonal
homeowners have lower levels of attachment, all measures are positive, suggesting that seasonal
homeowners have developed attachments to the communities in which they own seasonal homes.

TABLES 1 AND 2 ABOUT HERE

Social Bonds

Next we compared the social bonds of each type of resident and levels of social interaction
between seasonal homeowners and permanent residents. Not surprisingly, permanent residents
have larger social networks than seasonal homeowners (see Table 3). However, seasonal
homeowners do have fairly extensive social networks in the study host communities. In fact,
nearly ninety percent have at least one friend in the area and nearly 45 percent have family in the
community (see Table 4). Because of the large variation in the number of social ties we also
examined social ties by grouping respondents into categories of ties (0, 1 to 5, 6 to 10, 11 to 20 and over 20). Examining this categorization of social ties reveals that seasonal homeowners clearly have smaller social networks as fewer than 30% of seasonal homeowners have more than 10 friends in the community (whereas nearly 65% of permanent residents have more than 10 friends) and fewer than 15% of seasonal homeowners have more than 5 family ties in the community (while over 36% of permanent residents have more than 5 family ties; see Tables 5 and 6).

**TABLES 3, 4, 5 AND 6 ABOUT HERE**

**Relations with Permanent Residents**

Turning to social ties with the other type of residents, we can see that permanent residents tend to be more socially isolated from seasonal homeowners rather than vice versa. Seasonal homeowners have larger numbers of friends and family ties that are of the other residence type (i.e. permanent residents; see Table 7). In addition, seasonal homeowners live in areas in which a higher proportion of their neighbors are of the other residence type. This may be due in part to the fact that a substantial portion of permanent residents (18%) live in cities and villages in the Pine Barrens while only 2% of seasonal homeowners have homes in cities and villages.

**TABLE 7 ABOUT HERE**

These differences in cross-group interaction are made more apparent when we compare the percentage of respondents in each residence group that have at least one friend or family member that is from the other residence group (Table 8). While nearly 99% of permanent residents have friends in the community, fewer than 50% have a single friend that is a seasonal resident. In contrast, nearly 70% of seasonal homeowners have friends that are permanent residents.

Similarly, while over 75% of permanent residents have family in the community, fewer than 20% have family members that are seasonal homeowners while over 25% of seasonal homeowners have family ties to permanent residents.

**TABLE 8 ABOUT HERE**

In addition, we asked respondents to estimate the frequency with which they socialized with the other type of resident. We can see that seasonal homeowners assess higher rates of social interaction with permanent residents (Table 9). This may be due to base levels of social interaction that respondents are drawing upon. That is, seasonal homeowners visit their homes occasionally and thus have lower levels of social interaction than a permanent resident. Thus a relatively small amount of social interaction may be perceived as 'sometimes' or 'often.' In contrast, permanent residents, on average, have more frequent social interaction with other members of his or her home community and may judge the same amount of social interaction as 'rarely' or even 'never.'

**TABLE 9 ABOUT HERE**

**Community Participation**

Another critical measure of community is the extent to which residents participate in community affairs - do seasonal homeowners and permanent residents belong to community groups, participate in public events and meetings, volunteer their time for community groups? Not surprisingly, permanent residents have significantly higher levels of participation in all measures of community participation than seasonal homeowners except for one: contacting public officials. Permanent residents belong to more community groups (Table 10), volunteer more of their time (Table 11) and participate in more community activities (except contacting public officials; see Table 12). The most common community organization to which seasonal homeowners belong are lake associations (40% of seasonal homeowners are members of lake...
associations). Lake associations address needs and concerns that most directly affect seasonal homeowners (over 70% of seasonal homeowners own lakefront property). Thus, membership in a lake association may reflect an interest in preserving their property and enjoyment of the lake rather than concern for issues of community-wide concern. However, it may be that the interests of those seasonal homeowners who belong to more than one community organization (15% of our respondents) may extend beyond lake issues.

**TABLE 10 ABOUT HERE**

Community participation can also be examined by the time spent volunteering for local organizations. From Table 11 it is clear that the number of hours spent volunteering for community groups is rather minor for seasonal homeowners. Nearly 90 percent give less than an hour of their time per month to community groups. However, as with community organization memberships, there is a subpopulation (10%) that is more engaged, volunteering at least one hour per month to community organizations.

**TABLE 11 ABOUT HERE**

Civic participation is also commonly measured by attending public meetings and events, contacting public officials and working on community projects (see Oliver 2001, Verba et al. 1995). As with time and membership with community groups, permanent residents are significantly more active than seasonal homeowners. However, substantial numbers of seasonal homeowners do attend local events (62 percent) and contact public officials (nearly 45 percent). Once again we see a subpopulation of seasonal homeowners who work on community projects (11% of seasonal homeowners) and attend public meetings (nearly 19% of seasonal homeowners).

The image of the seasonal homeowner as a disengaged and ephemeral tourist does not seem to fairly portray seasonal homeowners in the Pine Barrens. Instead, nearly all seasonal homeowners have social ties in the area and socialize with permanent residents. In addition, there is at least a subpopulation that is engaged in community affairs: they belong to community groups, volunteer their time for these groups and engage themselves in the most mundane of community activities such as contacting public officials and attending public meetings. This subpopulation of seasonal homeowners challenges the image of seasonal homeowners as having shallow and fleeting experiences with their seasonal homes, only using them as an escape from reality. Instead, some engage reality in very tangible ways as they attend zoning meetings and volunteer for local community projects.

**Sociodemographic Factors Associated with Seasonal Homeowners’ Community Integration and Attachment**

The next step in our analysis was to examine the association of sociodemographic characteristics with community sentiment, social ties and community participation. These include length of residence, level of education, income, age, and presence of children in the household. Analysis reveals that number of days spent at the seasonal home and likelihood of relocating to the seasonal home are both highly significantly associated with community attachment (Table 13). In addition, previous residence in the Pine Barrens is associated with increased attachment. The only variable associated with interest in community affairs is the number of days spent in the community at the seasonal home (though the overall model does not approach significance). Interestingly, rather than length of residence it is actual use of the home that is associated with
attachment. Similarly, those who intend to relocate to their seasonal home are more attached, confirming our hypothesis that anticipated residence influences feelings of attachment.

**TABLE 13 ABOUT HERE**

**Social Ties and Community Participation**

Next we turn our attention to social ties. From the analysis we can see that number of friends is most strongly predicted by number of days spent at the seasonal home, followed by previous residence in the Pine Barrens and intention to migrate (Table 13). Meanwhile, having family ties is associated with previous residence (where seasonal homeowners who did not previously reside in the Pine Barrens are much less likely to have family ties) and the number of days spent at the seasonal home (Table 14).

An important aspect of social relations in areas with seasonal homeowners is the level of cross-resident ties. Most literature on seasonal homeowners suggests that they are socially isolated from permanent residents, developing few ties to the permanent residents of the host communities. This research suggests otherwise as most seasonal homeowners have friendship and family ties with permanent residents and most socialize with permanent residents. Examining friendship and family tie with permanent residents, length of residence and number of days spent at the seasonal home are associated with having at least one friend who is a permanent resident (Table 14). For family ties with permanent residents, previous residence is strongly while length of residence and likelihood of migration are somewhat associated.

**TABLE 14 ABOUT HERE**

Another measure of the social integration of seasonal homeowners is the frequency with which they socialize with the permanent residents. More frequent socializing is positively associated with the number of days spent at the seasonal home and expected migration to the Pine Barrens while income is negatively associated with socializing with permanent residents. It is possible that extremely wealthy seasonal homeowners simply view their home as an escape and do not try to develop social ties with permanent while they are at their home.

**TABLE 15 ABOUT HERE**

Next we examined levels of participation in community affairs by seasonal homeowners. Membership in at least one community group is associated with the number of days spent at the home and level of education (Table 16). Level of education is commonly found to be a strong predictor of activism in community groups in the community and political science literature (see Kasarda and Janowitz 1974, Oliver 2001, Verbs et al. 1995). The significance level of number of days is not surprising as those who spend more time in their homes have more of an opportunity to belong to groups. The logistic regression model for volunteering at least one hour per month to community organizations did not approach significance, though the number of days spent was significant in the model (Table 16).

**TABLE 16 ABOUT HERE**

As with membership in organizations, participation in community events is associated with the number of days spent at the seasonal home, level of education and likelihood of migrating (Table 17).

**TABLE 17 ABOUT HERE**
Conclusions

It is clear from this analysis that seasonal homeowners in the Pine Barrens inhabit a 'grey world' between migration and residence. Far from being socially and physically isolated from permanent residents with little concern for community affairs, seasonal homeowners have instead developed fairly extensive social networks in the Pine Barrens as well as strong attachments and interest in the communities. Importantly, the social networks and social interaction for most seasonal homeowners includes not only other seasonal homeowners but also permanent residents of the host communities. However, it is also clear that seasonal homeowners are not extremely active in more formal community affairs. While nearly half of all seasonal homeowners belong to at least one community organization, most of these homeowners belong only to their local lake association. Similarly, few devote an hour or more to community organizations, work on community projects or attend public meetings. However, there is a fairly substantial subpopulation that is rather active in community affairs in a place where they are part-time residents: they devote hours of time to community projects, belong to community groups and attend community events.

Interestingly, rather than length of residence it is actual use of the home that is most often and most strongly associated with feelings of attachment, development of social ties and participation in community affairs. This intuitively makes sense as someone who spends more time at their home can be expected to have more interactions with neighbors, friends, family, and casual acquaintances in the community while also having more time to dedicate to community organizations and events. Similarly, those who intend to migrate to the Pine Barrens can be expected to have more of an incentive to develop and interact with social ties and participate more in community affairs. Of the other demographic variables, only education and income are ever significantly associated with community integration. High levels of income are associated with lower levels of interaction with permanent resident, perhaps indicating that the wealthiest seasonal homeowners have less interest or opportunity to socialize with permanent residents. Education, as is commonly found in the literature, is positively associated with membership in community organizations and participation in community events.

Rural communities with an abundance of seasonal homes are becoming more complex places where social roles and relationships have become more ambiguous and uncertain. The distinctions between resident and seasonal homeowner are blurring, particularly in places like the Pine Barrens that have both a long history of cottages and resorts (dating back to the turn of the 20th century; see Murphy 1931) and a contemporary trend of the steady conversion of seasonal homes to permanent residences (nearly 18% of current permanent residents were once seasonal homeowners and 47% of current seasonal homeowners indicate that they are likely to establish permanent residence in the Pine Barrens). The findings of this research confirm the importance of Wilkinson’s (1991) social interaction theory in understanding community, where community is a multidimensional concept that encompasses social ties, community participation and community sentiment and solidarity. As Wilkinson argued so succinctly: "So long as people interact, community in this sense will persist (Wilkinson 1991, p. 34)." To better understand the ways in which seasonal homeowners may integrate into their host communities, it is important to focus on the essential element of social interaction.
References


Murphy, Raymond E. 1931 “The geography of the Northwestern Pine Barrens of Wisconsin.” *Transactions of the Wisconsin Academy of Science, Arts and Letters.* 26: 96-120.


Wisconsin Department of Natural Resources. 1996. *Northern Wisconsin’s Lakes and Shorelands: a report examining a resource under pressure*. 
Table 1. Comparing respondent's level of interest in community affairs

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest in community affairs</td>
<td>328</td>
<td>4.34</td>
<td>0.89</td>
<td>315</td>
</tr>
</tbody>
</table>

1 Interest in community affairs measured as 1 = very disinterested and 5 = very interested

Table 2. Comparing respondent's level of community attachment

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel I belong here</td>
<td>336</td>
<td>4.24</td>
<td>1.05</td>
<td>317</td>
</tr>
<tr>
<td>I feel I am a member of the community</td>
<td>336</td>
<td>4.24</td>
<td>1.08</td>
<td>317</td>
</tr>
<tr>
<td>Others in community would help in emergency</td>
<td>336</td>
<td>4.16</td>
<td>1.06</td>
<td>317</td>
</tr>
<tr>
<td>Others in community are trustworthy</td>
<td>336</td>
<td>4.06</td>
<td>1.06</td>
<td>317</td>
</tr>
<tr>
<td>Community Attachment</td>
<td>331</td>
<td>16.96</td>
<td>2.97</td>
<td>315</td>
</tr>
</tbody>
</table>

1 Respondents were asked to agree or disagree with each statement, where 1 = strongly disagree and 5 = strongly agree

Table 3 Mean number of friends and family ties, by type of resident

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of friends</td>
<td>320</td>
<td>25.25</td>
<td>26.06</td>
<td>309</td>
</tr>
<tr>
<td>Number of family</td>
<td>327</td>
<td>8.44</td>
<td>14.51</td>
<td>308</td>
</tr>
</tbody>
</table>

Table 4 Percentage of respondents with at least one friend and family tie

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one friend</td>
<td>316</td>
<td>98.75</td>
<td>270</td>
<td>87.38</td>
</tr>
<tr>
<td>At least one family tie</td>
<td>247</td>
<td>75.54</td>
<td>170</td>
<td>44.51</td>
</tr>
</tbody>
</table>

Table 5 Number of friends, by type of resident

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4</td>
<td>1.25</td>
<td>40</td>
<td>12.99</td>
</tr>
<tr>
<td>1 to 5</td>
<td>46</td>
<td>14.38</td>
<td>83</td>
<td>26.95</td>
</tr>
<tr>
<td>6 to 10</td>
<td>66</td>
<td>20.63</td>
<td>95</td>
<td>30.84</td>
</tr>
<tr>
<td>11 to 20</td>
<td>93</td>
<td>29.06</td>
<td>51</td>
<td>16.56</td>
</tr>
<tr>
<td>over 20</td>
<td>111</td>
<td>34.69</td>
<td>39</td>
<td>12.66</td>
</tr>
</tbody>
</table>

Table 6 Number of family, by type of resident

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>62</td>
<td>25.15</td>
<td>171</td>
<td>55.52</td>
</tr>
<tr>
<td>1 to 5</td>
<td>126</td>
<td>38.65</td>
<td>92</td>
<td>29.87</td>
</tr>
<tr>
<td>6 to 10</td>
<td>50</td>
<td>15.34</td>
<td>22</td>
<td>7.14</td>
</tr>
<tr>
<td>11 to 20</td>
<td>34</td>
<td>10.43</td>
<td>15</td>
<td>4.87</td>
</tr>
<tr>
<td>over 20</td>
<td>34</td>
<td>10.43</td>
<td>8</td>
<td>2.60</td>
</tr>
</tbody>
</table>

Table 7 Mean number and percentages of social ties that are other type of resident

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean number of friends, other type of resident</td>
<td>318</td>
<td>4.01</td>
<td>9.56</td>
<td>308</td>
</tr>
<tr>
<td>Mean number of family ties, other type of resident</td>
<td>325</td>
<td>0.52</td>
<td>1.94</td>
<td>304</td>
</tr>
<tr>
<td>Mean percentage of neighbors, other type of resident</td>
<td>311</td>
<td>25.66</td>
<td>29.33</td>
<td>300</td>
</tr>
</tbody>
</table>

Table 8 Percentage of respondents with at least one friend and family tie that is other type of resident

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one friend, other type of resident</td>
<td>154</td>
<td>48.83</td>
<td>210</td>
<td>68.18</td>
</tr>
<tr>
<td>At least one family tie, other type of resident</td>
<td>55</td>
<td>16.92</td>
<td>81</td>
<td>26.64</td>
</tr>
</tbody>
</table>
Table 9 Frequency of interaction with other type of resident

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 322)</td>
<td>(n = 286)</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Never</td>
<td>51</td>
<td>15.84</td>
</tr>
<tr>
<td>Rarely</td>
<td>71</td>
<td>22.05</td>
</tr>
<tr>
<td>Sometimes</td>
<td>129</td>
<td>40.06</td>
</tr>
<tr>
<td>Often</td>
<td>71</td>
<td>22.05</td>
</tr>
</tbody>
</table>

Table 10 Number of Community Groups

<table>
<thead>
<tr>
<th>Number of Community Groups</th>
<th>Permanent Residents (n = 315)</th>
<th>Seasonal Homeowners (n = 308)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>0</td>
<td>120</td>
<td>38.1</td>
</tr>
<tr>
<td>1</td>
<td>54</td>
<td>17.14</td>
</tr>
<tr>
<td>2</td>
<td>63</td>
<td>20</td>
</tr>
<tr>
<td>3 or more</td>
<td>78</td>
<td>24.76</td>
</tr>
</tbody>
</table>

Table 11 Number of hours spent volunteering per month with community groups and events

<table>
<thead>
<tr>
<th>Number of hours</th>
<th>Permanent Residents (n = 322)</th>
<th>Seasonal Homeowners (n = 303)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>less than 1 hour</td>
<td>162</td>
<td>50.31</td>
</tr>
<tr>
<td>1 to 4 hours</td>
<td>69</td>
<td>21.43</td>
</tr>
<tr>
<td>5 to 10 hours</td>
<td>51</td>
<td>15.84</td>
</tr>
<tr>
<td>10 or more hours</td>
<td>40</td>
<td>12.42</td>
</tr>
</tbody>
</table>

Table 12 Participation in community events

<table>
<thead>
<tr>
<th></th>
<th>Permanent Residents</th>
<th>Seasonal Homeowners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Attended a local event ¹</td>
<td>290</td>
<td>87.61</td>
</tr>
<tr>
<td>Contacted a public official ²</td>
<td>157</td>
<td>47.72</td>
</tr>
<tr>
<td>Worked on a community project ³</td>
<td>145</td>
<td>43.04</td>
</tr>
<tr>
<td>Attended a public meeting ⁴</td>
<td>138</td>
<td>42.07</td>
</tr>
</tbody>
</table>

1 Total n for permanent residents = 331 and for seasonal homeowners = 315
2 Total n for permanent residents = 329 and for seasonal homeowners = 315
3 Total n for permanent residents = 330 and for seasonal homeowners = 314
4 Total n for permanent residents = 328 and for seasonal homeowners = 315

Table 13 Multiple regression analysis of community attachment, interest in community affairs and number of friends, seasonal homeowners.

<table>
<thead>
<tr>
<th>Community Attachment</th>
<th>Interest in Community Affairs</th>
<th>Number of Friends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of residence</td>
<td>0.0014</td>
<td>0.09</td>
</tr>
<tr>
<td>Number of days spent at home</td>
<td>0.18 ***</td>
<td>0.283 ***</td>
</tr>
<tr>
<td>Likelihood of migration</td>
<td>0.257 ****</td>
<td>0.181 ***</td>
</tr>
<tr>
<td>Education</td>
<td>-0.004</td>
<td>-0.056</td>
</tr>
<tr>
<td>Age</td>
<td>0.056</td>
<td>0.069</td>
</tr>
<tr>
<td>Income</td>
<td>0.03</td>
<td>-0.011</td>
</tr>
<tr>
<td>Children</td>
<td>-0.09</td>
<td>-0.05</td>
</tr>
<tr>
<td>Previous residence</td>
<td>0.12 *</td>
<td>0.233 ****</td>
</tr>
<tr>
<td>Model F-value</td>
<td>3.38</td>
<td>0.81</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.075</td>
<td>0.178</td>
</tr>
<tr>
<td>Model p-value</td>
<td>&lt;.0001</td>
<td>0.6</td>
</tr>
</tbody>
</table>

* p < .1, ** p < .05, *** p < .01, **** p < .001.
Table 14: Likelihood of having any family ties and friendship or family ties with permanent residents in the community, seasonal homeowners

<table>
<thead>
<tr>
<th>Family Ties with Permanent Residents</th>
<th>Family Ties with Permanent Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Wald</td>
</tr>
<tr>
<td>Length of residence</td>
<td>0.014</td>
</tr>
<tr>
<td>Number of days spent at home</td>
<td>0.007</td>
</tr>
<tr>
<td>Likelihood of migration</td>
<td>0.217</td>
</tr>
<tr>
<td>Education</td>
<td>-0.142</td>
</tr>
<tr>
<td>Age</td>
<td>0.007</td>
</tr>
<tr>
<td>Income</td>
<td>-0.133</td>
</tr>
<tr>
<td>Children</td>
<td>0.025</td>
</tr>
<tr>
<td>Previous residence</td>
<td>-1.19</td>
</tr>
<tr>
<td>Wald Chi-sq</td>
<td>2.13</td>
</tr>
</tbody>
</table>

*p < .1, **p < .05, ***p < .01, ****p < .001.

Table 15: Multiple regression analysis of socializing with permanent residents by seasonal homeowners.

<table>
<thead>
<tr>
<th>Socializing with Permanent Residents</th>
<th>B</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of residence</td>
<td>0.085</td>
<td>1.12</td>
</tr>
<tr>
<td>Number of days spent at home</td>
<td>0.23</td>
<td>3.43 ****</td>
</tr>
<tr>
<td>Likelihood of migration</td>
<td>0.19</td>
<td>2.58 ****</td>
</tr>
<tr>
<td>Education</td>
<td>0.06</td>
<td>0.9</td>
</tr>
<tr>
<td>Age</td>
<td>-0.001</td>
<td>-0.01</td>
</tr>
<tr>
<td>Income</td>
<td>-0.15</td>
<td>-1.97 **</td>
</tr>
<tr>
<td>Children</td>
<td>-0.015</td>
<td>-0.2</td>
</tr>
<tr>
<td>Previous residence</td>
<td>0.11</td>
<td>1.55</td>
</tr>
<tr>
<td>Model F-value</td>
<td>3.64</td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.0867</td>
<td></td>
</tr>
<tr>
<td>Model p value</td>
<td>0.0005</td>
<td></td>
</tr>
</tbody>
</table>

*p < .1, **p < .05, ***p < .01, ****p < .001.

Table 16: Likelihood of seasonal homeowners belonging to at least one community organization and volunteering at least one hour per month.

<table>
<thead>
<tr>
<th>Community Organizations</th>
<th>Estimate</th>
<th>Wald</th>
<th>Odds Ratio</th>
<th>Volunteering</th>
<th>Estimate</th>
<th>Wald</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of residence</td>
<td>-0.009</td>
<td>0.55</td>
<td>0.991</td>
<td>0.022</td>
<td>1.49</td>
<td>1.022</td>
<td></td>
</tr>
<tr>
<td>Number of days spent at home</td>
<td>0.018</td>
<td>19 ****</td>
<td>1.018</td>
<td>0.01</td>
<td>3.14 *</td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>Likelihood of migration</td>
<td>-0.078</td>
<td>0.28</td>
<td>0.925</td>
<td>-0.067</td>
<td>0.07</td>
<td>0.935</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>0.197</td>
<td>2.97 *</td>
<td>1.218</td>
<td>0.282</td>
<td>2.17</td>
<td>1.326</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.007</td>
<td>0.18</td>
<td>1.007</td>
<td>-0.033</td>
<td>1.37</td>
<td>0.987</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>0.11</td>
<td>0.88</td>
<td>1.117</td>
<td>-0.241</td>
<td>1.65</td>
<td>0.786</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>-0.06</td>
<td>0.11</td>
<td>0.887</td>
<td>0.354</td>
<td>1.25</td>
<td>2.029</td>
<td></td>
</tr>
<tr>
<td>Previous residence</td>
<td>-0.178</td>
<td>0.37</td>
<td>0.335</td>
<td>0.347</td>
<td>1.954</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald chi-sq</td>
<td>23.09</td>
<td>8.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model p value</td>
<td>0.002</td>
<td>0.37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .1, **p < .05, ***p < .01, ****p < .001.

Table 17: Multiple regression analysis of participating in community events by seasonal homeowners.

<table>
<thead>
<tr>
<th>Community Events</th>
<th>B</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of residence</td>
<td>0.013</td>
<td>0.18</td>
</tr>
<tr>
<td>Number of days spent at home</td>
<td>0.326</td>
<td>5.08 ****</td>
</tr>
<tr>
<td>Likelihood of migration</td>
<td>0.134</td>
<td>1.87 *</td>
</tr>
<tr>
<td>Education</td>
<td>0.181</td>
<td>2.63 ***</td>
</tr>
<tr>
<td>Age</td>
<td>-0.017</td>
<td>-0.19</td>
</tr>
<tr>
<td>Income</td>
<td>-0.011</td>
<td>-0.15</td>
</tr>
<tr>
<td>Children</td>
<td>-0.076</td>
<td>-1.01</td>
</tr>
<tr>
<td>Previous residence</td>
<td>-0.03</td>
<td>-0.46</td>
</tr>
<tr>
<td>Model F-value</td>
<td>5.33</td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.129</td>
<td></td>
</tr>
<tr>
<td>Model p value</td>
<td>&lt;.0001</td>
<td></td>
</tr>
</tbody>
</table>

*p < .1, **p < .05, ***p < .01, ****p < .001.
The Role of Wilderness and Public Land Amenities in Explaining Migration and Rural Development in the American Northwest*

Gundars Rudzitis
Department of Geography
University of Idaho

John Hintz
Department of Geography
University of Kentucky

Christy Dearden
Department of Agricultural Economics and Rural Sociology
University of Idaho

* This is a Rough First Draft and may contain more tables than will appear in the final book chapter. Comments and suggestions are welcome. Please do not quote without permission of the authors.
Introduction: The Neo-Classical Model and Emergence of Contrary Evidence:

Traditionally, neo-classical migration models were based on the assumption that people moved for economic reasons such as employment or increased income. In a classical article, University of Chicago economist Larry Sjaastad (1962) set the decision to move within a cost-benefit framework where individuals evaluated the relative trade-offs as the basis to move or stay. He was aware of non-economic, or what he called psychic costs, which included attachments people had to the places where they were currently living. However, since measuring these psychic costs would be very difficult, his solution was to:

"Ignore psychic costs of migration since they involve no resource cost; likewise we should ignore non-money returns arising from locational preferences."

The non-economic facets of people's lives in the decision to move were not part of the cost-benefit calculus. Economic motivations and income maximization were what drove migration trends. Places were important only in the sense that they attract or repel people to produce resources for the larger economy. No attempt was made to understand why people live in places. The role of the physical environment and its major component, land, was dismissed, as was the social and cultural environment. This limited view of migration was, however, soon to change as the role of Nature and its environmental components, especially climate, became the means of incorporating a physical environment variable into statistical models.

Starting in the 1960s and 1970s studies began to cast doubt on these assumptions. Also the growth of non-metropolitan counties at faster rates than metropolitan counties for the first time in the nation's history was unexpected, and needed to be explained. Some of this early research was done at the University of Chicago (Berry, 1978; Berry and Dahmen, 1977; Dahmen, 1983; Gillard, 1980; Lamb, 1975; Morgan, 1977).

Economist George Tolley and a cadre of his students, post-docs and visiting scholars began asking questions about the environment, and how to value it. Amenities that are location-specific became a central focus of migration research. Because of their tie to specific places people usually have to migrate to attain the particular combination of amenities they desire (Diamond, 1980; Diamond and Tolley, 1982; Graves and Linneman; Graves, 1979, 1980, 1983; Harris, Tolley and Harell, 1968; Krumm, 1983; Tolley, 1974).

This approach, sometimes called the quality of life model, argues that people migrate and live where they do for non-economic reasons and, that jobs follow people. If given a choice, people and firms live and locate where they do for reasons having to do with the social, cultural, and physical environment. Such non-economic amenities attract and retain people and businesses. Consequently, maintaining a place's unique character can be an important economic development strategy. It puts quality of life and environmental quality at center stage, instead of off stage or in a peripheral and minor supporting role. However, perhaps the earliest statement of the importance of amenities in regional growth was the classic 1954 article by geographer Edward Ullman of the University of Washington. Later, economist Thomas Michael Power built on much of the research cited above in his innovative text, The Economic Value Of The Quality of Life (1980) as well as subsequent books expanding these arguments (1988; 1996; Power and Barrett, 2001).

Most of the studies cited above used secondary data and a regression-modeling format to try and explain migration patterns. At about the same time sociologists were conducting survey research suggesting that, during the 1970s people's preferences were changing toward a desire to live in rural areas. Previously, people had moved to metropolitan areas for urban amenities, but
those leaving metropolitan areas during the 1970s were more likely to list quality-of-life factors
than economic ones as part of their migration decision (Williams and Sofranko, 1979). Fuguit
and Zuiches (1975) found that people who show a preference for rural living may be looking for
particular community attributes not associated with metropolitan life. Attributes such as low
crime rate, good air and water quality, a good environment for raising children, and a lower cost
of living were desired.

Migration Towards Public Lands, Wilderness and the Wild:

During the 1960s, wilderness counties had population increases three times greater than
other non-metropolitan areas, and in the 1970s, wilderness counties grew at twice the rate of
other non-metropolitan counties. In the 1980s, their population increased 24 percent — six times
faster than the national average of 4 percent for non-metropolitan counties as a whole and almost
twice as fast as counties in the non-metropolitan West (Rudzitis, 1996). These trends have
continued into the 1990s, as wilderness counties grew three times faster than the national average
and more than twice as fast as metropolitan areas.

(Table 1 Here)

The amenities of these protected wilderness areas and other public lands appeared to
keep residential populations stable and attract new migrants. However, while research into why
people moved during the 1970s showed the importance of amenities and other non-economic
factors, little survey research was done in the 1980s that could be compared with the previous
research.

Rudzitis and Johansen (1989) replicated some of the 1970 survey research showing non-
economic reasons important in the decision to move to non-metropolitan wilderness counties.
They found that public lands and particularly the presence of federal wilderness was an important
reason why people moved or lived in these counties (Rudzitis and Johansen, 1991). Duffy-Deno
(1998) examined whether local economies may be adversely affected by designation of federal-
owned wilderness in the eight states of the intermountain western United States. He found no
evidence that the existence of federal wilderness is directly or indirectly associated with
population or employment growth between 1980 and 1990. Much of the economic concern over
the designation and presence of federal wilderness is on its perceived effect on resource based
industries. The Duffy-Deno study found no empirical evidence that county-level resource-based
employment is adversely affected by the existence of federal wilderness. Indeed, there is some
evidence of a positive association between federal wilderness and nonresource, nonfederal
county employment growth. On average, from a utilitarian perspective wilderness designation
causes little aggregate economic harm to county economies, promoting instead increases in total
population and employment.

In the Northwest, Morrill and Downing (1986) also found environmental characteristics
to play a major role in pulling people to the small towns of the region. More recent research also
indicates that migrants are citing reasons other than employment opportunity as why they moved
to or live in the American West. Social and natural amenities continue to be important in their
decision. Counties with amenities continue to grow and migration decisions are increasingly
being based on natural and social amenities and quality-of-life factors (Carlson, et. al., 1999;
Judson, et. al., 1996; Rudzitis, 1996, 1999; Wardwell and Lyle, 1997; McGranahan, 1999;
Johnson, 2001; Swanson, 2001; Ohrman, 1999; Beyers and Nelson, 2000; Shumway and Davis,
1996; Shumway and Otterstrom).

Incomes, Chickens and Eggs:

A basic assumption of the neo-classical model is that people move (particularly across
state lines) to get higher paying jobs and more incomes. Recent studies in the American West have shown that, contrary to the neo-classical model, many migrants move to amenity-rich areas despite a decrease in income (von Reichert and Rudzitis, 1992; Mortill and Downing, 1986; Judson et. al, 1996; Wardwell and Lyle, 1997). For example, Von Reichert and Rudzitis (1992) found that contrary to the economic theory of migration, almost 50 percent of the migrants reported lower incomes, and only 28 percent had increased their income, with the rest showing no change.

People who have low current incomes or are unemployed are also expected to do more long-distance moves to improve their wages. However, again, evidence does not bear this out. For example, the 2000 Current Population Survey found that unemployed and lower income persons were less likely than employed and higher income people to move for a work-related wage reason. Indeed, lower income groups are less likely than higher income groups to move for work-related reasons (U.S. Census, 2001).

Migration and regional development models also normally assume that people follow jobs. Firms migrate into a region and create job opportunities. Then, people move in seeking the newly created jobs. Or do people migrate first, and then jobs follow? This is the old "chicken or egg" analogy. However, there have not been many attempts to test whether people are following jobs, or jobs are following people in the American West. A few studies have tried to get at this issue within a simultaneous-equations framework.

These studies; whether looking at wilderness counties (Rudzitis and Johansen, 1989), the Pacific Northwest (von Reichert, 1992), or the interior Rocky Mountain West (Vias, 1997, 1999) find that jobs are following people and not the other way around. Indeed, Vias (1997, 1999) in a study of non-metropolitan counties in the Rocky Mountain West found that population was

driving employment growth, and that there was a negative relationship between employment and population. Other studies have found that up to a third of the people migrating into the rural American West move first and plan to find or create jobs after moving to an area (Rudzitis, 1996; von Reichert and Rudzitis, 1994).

The basic assumptions of the neo-classical model do not seem to hold up under empirical scrutiny. A host of other factors we don't have space to discuss in detail could also influence migration. These include unexpected changes such as rising incomes, changes in the divorce rate, shifting employment and occupational structures, unexpected deterioration in physical and social environments, changing immigration levels, decreasing or increasing transportation costs and shifting societal attitudes. An advantage of the amenity approach in explaining migration is its greater inclusiveness.

Wilderness and American Northwest Migration Models:

Wilderness and American Northwest Migration Models  We present some regression-based models of migration into the American Northwest for the decades of the 1970s, 1980s and 1990s. They validate some of the criticisms of the neo-classical models and illustrate the limitations of such an approach.

The regression models are derived from the literature discussion earlier. They include economic, demographic, social and amenity county-level variables. The models attempt to see how well these variables explain net migration into the American Northwest region. The region is defined as including Washington, Oregon, Idaho, Western Montana and parts of northern Utah and Nevada. There is no consensus on which functional form is the most appropriate migration models. We tested linear, semi-log and log-log migration models and found that the linear formation consistently had the highest adjusted R-Squared values, and so report those results. A
The major obvious difference is the explanatory power of the regression models over time. The R-Squared values were higher for that 1970s and 1990s models compared to the 1980s model.

(Table 2 here)

In the 1970s model neither the manufacturing nor the services variables are significant suggesting that prior changes in the economic structure of those counties was not very important in attracting migrants. The income variable is significant, with a negative sign. Contrary to what traditional models predict, people are not moving towards places with higher incomes. Instead people appear to be trading off amenities and lifestyle for either lower incomes, or the expectation that their incomes will rise in the near future. The unemployment variable is significant but with a positive sign. Migration increased in counties with higher unemployment rates. A portion of this migration might explain the lower income levels of these counties suggesting a supply of excess labor in these areas.

The rent variable, serving as a surrogate for amenities (Graves ; Roebeck,) is highly significant with a positive sign. The percent public land variable is not significant, perhaps because of the large amounts of federal lands in the region. For example, Idaho has 62 percent federal lands. The metropolitan-nonmetropolitan dummy variable and the crime variable also are not significant. The percentage aged 65 years and older is significant at the 0.07 percent level with a negative sign. Counties with higher concentrations of older persons do not attract migrants as well as those with younger age structures. The popular notion that much of the in-migration and population growth of counties in the inner West is driven by retired people moving towards places with higher concentrations of older persons is not borne out in the Northwest. The R-Squared is 0.31

The 1980s migration model has a much lower R-Square of 0.13. The only significant variables are income, again with a negative sign, and rent with a positive sign. The unemployment and the percent aged 65 and older variables significant in the 1970s model are not significant in the 1980s model. The 1980s had recensions at both ends of the decade, which might provide a partial explanation for poorer explanatory power of the model.

The 1990s migration model has the highest R-Square of 0.40. Again, income with a negative sign and rent with a positive one are significant. The metro-nonmetro dummy is closer to being significant (0.15), but with a negative sign, suggesting that net migration rates are higher for non-metropolitan counties. The 1990s model is similar to the 1970s model suggesting that events such as the recession and subsequent shutdowns of timber mills during the 1980s may have played a role as people and the region adjusted to these changes taking place.

The models affirm the difficulties of using economic logic for explaining migration shifts in the region. The use of lagged (or period) employment changes did not explain migration trends suggesting again that migration either is independent of, or leads such changes. It provides some indirect evidence for the jobs follow people model of regional development. The lack of significance of the unemployment variable or its positive sign during the 1970s gives little credence to the neoclassical assumption that people migrate towards areas with low unemployment rates. The insignificance of the metro/nonmetro dummy variable shows no significant difference between urban and rural areas. The negative sign on the income variable is also counter to the traditional neoclassical migration assumptions. The percent public lands county variable is not significant, probably because of the proximity throughout the region to such lands.

We also tested models in the region using more detailed distance and public lands
variables. We used both "proximity" and distance variables. The proximity to federal lands, such as wilderness, was calculated, using GIS to define the percentage of each county that contains or is within 50 miles of federally designated wilderness. The distance variable was also calculated using GIS to estimate how far each county centroid was from the nearest wilderness boundary as well as other National Forest, Nation Parks and a composite "High Amenity Lands" defined as the sum of federal wilderness, National Forests, National Parks and National Wildlife Refuges in a county.

As individual variables run separately the national forest distance variable was least significant in explaining migration. Distance to wilderness was considerably more significant, especially in the 1970s model, but not in the 1980s. The distance to national parks variable was of greater significance than the wilderness variable in explaining migration. Amenities around national parks such as Yellowstone, Glacier, Olympic, and other parks in the region attracted new migrants strongly in the 1970s, and less so in the 1980s. We also found that the distance variable was better than the proximity variables, whether wilderness or national parks in explaining migration trends. The composite high amenity lands variable was significant in the 1970s but not in the 1980s.

We also derived a GIS based metropolitan accessibility variable that was calculated as the distance from each county to the nearest of the regions three first order metropolitan areas. We would expect a negative sign on this variable if areas further from metropolitan areas are growing at a slower rate. We also tested metro accessibility by scoring each county on their relative distance to all metropolitan statistical areas in the region. The lower the score, the more remote the county relative to the MSA's. Individually these variables were not significant in explaining in-migration.

We tested an expanded model that included a public lands amenity variable and a metropolitan accessibility variable with four economic variables, country level average property tax rate, unemployment rate, medium family income and the average housing rent. Five of the six (Table 3 here)
variables were significant in the 1970s model. Both amenity variables were significant, percentage of high amenity lands with a positive sign, and distance to wilderness with a negative sign. Counties with higher percentages of high amenity public lands as well as counties closest to wilderness areas attracted more in-migrants. Metropolitan accessibility was negatively significant indicating that counties more remote from MSA's were attracting more in-migrants.

We also tested a Eastside-Westside dummy variable since the majority of population in the Northwest lives west of the Cascades from Seattle, Washington south to Eugene, Oregon to test whether the Northwest was "behaving" as two distinct regions, a densely populated, fast growing Westside, and a more rural, slower growing Eastside. However, the dummy variable was not significant. Of the other variables, unemployment was just barely significant with a negative sign, rent was highly significant with a positive sign, as was property tax with a negative sign, and medium household income also with a negative sign. People are moving to counties with lower unemployment, higher rents, lower property taxes and lower incomes.

The migration models for the 1980s differed from the 1970s with lower R-Squares. Only rent and medium income are significant at the 5 percent level with positive and negatives signs, respectively, as in the 1970s models. Unemployment is not significant while the property tax variable is at the 10 percent level but with a positive sign. The switch in the property tax sign may reflect the more rapid growth of metropolitan areas in the 1980s and the continuing growth of higher cost-of-living rural counties in the region. The high amenity public lands, distance to
wilderness or metropolitan accessibility variables were not significant, and thus there is little evidence that people were basing their decisions of where to move on the availability of high amenity public lands. The low R-Square values indicate the inability of these models to adequately explain migration trends during this period. This was also a period during which the Northwest region became more economically diverse and less ethnically homogeneous (Rudzitis, Hintz and Watrous, 1996).

Similar models were run for the geographically diverse wilderness counties nationwide, and in those regressions the percent public lands is significant with a positive sign. The climatic variables in the wilderness counties regressions are also significant and with the correct sign. However, in those regressions the R-Square values are also relatively low suggesting a limited ability to explain how and why people are moving into and out of these counties. We turn briefly to a consideration of survey-based data to see if we can gain greater insights into the motivations of people moving into the Northwest, and how well the macro-level regression models correlate with the micro-based survey data. We also wanted to see if there were significant attitudinal differences between in-migrants and residents in the region.

Northwest Survey Results

The survey data is based on one thousand random respondents selected using a stratified cluster sampling method. There a total of 574 completed returned out of 926 deliverable surveys for a 62% response rate using a modified total design method (Dillman, 1978) for a margin of error of plus or minus 4% at the 95% confidence level.

Only 29 percent had lived in the region all their lives compared to 71 percent who had moved to the area. Of the newer residents in their county, most, or approximately 25 percent moved in since 1990, followed by 18 percent who moved in between 1985-1989 and 13 percent between 1980-1984. So 43 percent moved in during the last ten years and 55 percent since 1980. Clearly, migration is an important component in the changes taking place in the region. The largest group came from California (18%) followed by Idaho (17%), Washington (16%), and Oregon (11%). These four states provide 62 percent of the migrants moving into the region, although there are in-migrants from 40 states in the United States and abroad. A greater percentage (57%) moved from metropolitan areas than nonmetropolitan areas (43%).

We asked a partially open ended question of why people moved to or live in their present county. They were given two statements to choose from, as well as an "Other" category in which they could write in their own response. These were then combined into distinct categories.

(Table 4 here)

Thirty-six percent of the respondents chose the first statement (I decided to move here because of a job opportunity) while the second statement (I decided to move here because I wanted to live here, and then I looked for/created a job) was chosen by 28 percent. These are people living in the region largely for reasons related to the social and physical Environment. The responses under "Other" were divided into distinct categories. The most cited of these was lived here all or most of my life (17%). Access to family/friends was given by just 6 percent of the respondents.

Another means used to determine the relative importance of different reasons for moving/living in their county was the use of a scaled question asking respondents the relative importance of each of the factors. The question used a scale that ranged from 1, not important, to 7, extremely important. Table 5 shows the 7 point scale collapsed into three categories, Unimportant, Neutral, and Important for each of the factors.
The employment category was cited by 64 percent as an important reason for being in the county. Clearly having a job underlies the ability of people to be able to live where they want to whether or not employment is their primary motivation for being in the region. The other social and physical Environmental scaled questions show the relative importance of the individual factors. Under the social environment category, social services is cited as important by only 22 percent. Other social environment factors include cost of living (54%), quality of schools (50%), family & friends (62%), crime/safety (75%), and pace of lifestyle (76%). Under the Physical Environment category, landscape, scenery, and environment is given by 78 percent, followed by outdoor recreation (72%), and climate (65%). The use of a scaled approach shows a consistent emphasis on the importance of area characteristics associated with the physical environment.

An evaluation of how different groups vary in their responses shows some social and demographic differences. Table 6 shows how groups differed in how important they thought each of the factors was to their decision to move to or stay in the area.

Employment was most important to those aged 35-49 years, followed by those aged 20-34, which is not surprising. It was also more important to females, migrants and those currently living in a metropolitan area. The youngest two groups also found outdoor recreation to be more important in their decision than did the other age groups. Landscape, scenery and environment was less important for the oldest age group. Climate was more important to those aged 35 and older. Cost of living was more important to those aged 20-34, by females, migrants and those living in a metropolitan area, and least important to those aged 65 and older. Other social environment factors tend to be more important to females and those aged 35-49 years. Nonmigrants found access to family and friends more important while migrants and those in metropolitan areas found crime/safety to be more important.

Overall, the survey findings show that employment is not the only important factor for why people move to the Northwest. People also consider factors related to the social and physical environment. The most important social factors include crime/safety and pace of lifestyle. Social environment factors tend to be more important to females and those aged 35-49 years.

Demographic characteristics are varied for the most important factors related to the physical environment. The most important physical factors include landscape, scenery and environment, and outdoor recreation. It appears people value the quality of the social and physical environments in which they live, in addition to wanting to be able to support themselves through employment.

We conducted a stepwise discriminant analysis to determine whether any differences between newcomers and long-term residents were strong enough to differentiate between the two groups using attitudinal and demographic variables. The discriminant function as shown in Table 7 was highly significant.

The discriminant function shows that migrants and non-migrants can be differentiated primarily based on age, educational attainment, cost of living and the importance of access to family and friends. The value of the standardized discriminant function for age is almost two times larger than any of the other factors suggesting that the major differences between migrants and long-term residents is demographic rather than attitudinal. Other variables such as outdoor recreation, climate, income, quality of schools and crime rate have relatively
high values for the standardized discriminant function but low values for the total canonical structure, and thus less influence. Other selected variables such as sex, employment opportunity, social services, landscape and pace of life had much less influence in the equation.

The findings of the macro regression and micro-level survey analysis are compatible which is encouraging. Often macro modeling efforts using aggregate data ignore the findings of survey-based research that focuses on individual migration decisions. Researchers who use macro models may not put much faith in survey-based results, or in what people say they will do or why they did what they did. Hopefully, these results can help to alleviate some of the suspicions that exist between the two groups. Our results for the American Northwest suggest that the two approaches can result in similar conclusions. Each approach supports and informs the findings of the other.

**Conclusion and Future Research Directions**

We have shown that economic factors play only a partial role in explaining migration in the American Northwest. Theories and regional development strategies dependent on economic motivations alone are too reductionistic and simplistic. Traditional economic models of regional development don't consider the context of peoples' lives and how they interact with, shape and are affected by their social and spatial environments.

The amenity modeling approach better explains recent growth trends in the American Northwest and elsewhere. However, we also need to consider the attachments people form with places or their "sense of place." It is attachment to a place or region that keeps people from moving away during times of economic distress, a loyalty to landscapes and communities. (Tuin 1976; Marsh 1987; Berry 1987; Relph 1986; Bolton 1992; Rudzitis 1982, 1991, 1996; Pena 1998; Feldman, 1990; Gustafson, 2001.) Current regional development models ignore loyalties and ties to place and "wild" landscapes. If attachments to place are important, how they are formed becomes critical in understanding how local and regional communities maintain their vitality. In the American Northwest, this uniqueness is rooted in a physical environment that interacts with the social lives of the people who live there. The interaction with wilderness and other wildlands creates a "sense of place" and "roots."

There have been some recent attempts to extend theory and develop models that incorporate sense of place and culture in developmental models (Rudzitis 1998, 2005; Tolley and Rudzitis 1999). Some indirect evidence of an increased demand for a greater sense of place in as shown in our regression models and survey research in the Northwest is the willingness of people to accept lower wages to live in such places. Apparently, the difference in incomes between the places people left and their new living environments is compensated by greater amenities and other noneconomic factors. Areas surrounding wilderness and other public lands also have lower real wages. However, despite having lowered incomes, migrants to these counties are highly satisfied with where they presently live.

Another indirect indicator of a greater attachment and sense of place is the high level of agreement when people in high amenity counties are asked if their lives are now happier, less stressful and more enjoyable (Rudzitis and Johansen, 1991). People who are more satisfied with where they live feel more attached to their communities and are less likely to move (Fernandez and Dillman 1979; Heaton et. al., 1979; Samson 1998; Rudzitis and Johansen 1989; Stimmer and others; Bolan, 1997; Carlson and others, 1998).

Sense of place may be an important variable in explaining regional growth however
measurement of it in quantitative terms may not be possible. Developing hypotheses based on the existence of sense of place may have to rely on indirect evidence requiring efforts at least as challenging as attempts to actually measure it. Regardless, the amenity-based evidence supports the potential benefits of moving towards a more place-based theory of migration and regional development within which sense of place or "home" might be the ultimate amenity. Clearly, there is a need both for further conceptual work, and similarly as our empirical work in this chapter suggests that here too much remains to be done.

References


Relph, E. (1986), Place and Placelessness, Toronto: University of Toronto Press.


Tolley, G.S., Rudzitis, G. and B. Baden (2000), "Regional Economic Theory, Sense of Place,


Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent County Population Change</th>
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<tr>
<td></td>
<td>Metropolitan</td>
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<tr>
<td>1960-1970</td>
<td>17.1</td>
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<tr>
<td>1970-1980</td>
<td>10.6</td>
</tr>
<tr>
<td>1980-1990</td>
<td>11.6</td>
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<td>1990-2000</td>
<td>13.9</td>
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Source: Rudzitis, 1996 and calculations by authors.

Table 2

American Northwest Net Migration Models

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<tr>
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<tbody>
<tr>
<td>Constant</td>
<td>-0.1010</td>
<td>-0.0436</td>
<td>-0.1878</td>
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<tr>
<td>Lagged Manufacturing Jobs</td>
<td>-0.0077</td>
<td>0.0016</td>
<td>-0.0095</td>
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<tr>
<td>(0.717)</td>
<td>(0.928)</td>
<td>(0.619)</td>
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<tr>
<td>Lagged Service Jobs</td>
<td>-0.0307</td>
<td>-0.0065</td>
<td>-0.0237</td>
</tr>
<tr>
<td>(0.162)</td>
<td>(0.732)</td>
<td>(0.567)</td>
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<tr>
<td>Median Family Income 1990</td>
<td>-0.0002</td>
<td>-0.0005</td>
<td>-0.0009</td>
</tr>
<tr>
<td>(0.027)</td>
<td>(0.087)</td>
<td>(0.064)</td>
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<tr>
<td>Unemployment</td>
<td>0.0074</td>
<td>-0.0003</td>
<td>-0.0440</td>
</tr>
<tr>
<td>(0.008)</td>
<td>(0.958)</td>
<td>(0.527)</td>
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<tr>
<td>Crime Rate</td>
<td>-0.0007</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>(0.839)</td>
<td>(0.396)</td>
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<tr>
<td>Median Rent</td>
<td>0.0024</td>
<td>0.0009</td>
<td>0.145</td>
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<td>(0.000)</td>
<td>(0.020)</td>
<td>(0.000)</td>
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<tr>
<td>Percent Aged 65</td>
<td>-0.9090</td>
<td>-0.4760</td>
<td>-0.429</td>
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<tr>
<td>(0.077)</td>
<td>(0.210)</td>
<td>(0.210)</td>
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<tr>
<td>Percent Public Lands</td>
<td>0.0014 (0.979)</td>
<td>0.0133 (0.746)</td>
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<tr>
<td>----------------------</td>
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<tr>
<td>Metropolitan/Nonmet</td>
<td>-0.0309 (0.583)</td>
<td>-0.0023 (0.953)</td>
<td>-6.778 (0.153)</td>
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<td>Dummy</td>
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<td>Adjusted R$^2$</td>
<td>0.31</td>
<td>0.10</td>
<td>0.40</td>
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<tr>
<td>F</td>
<td>4.51</td>
<td>1.98</td>
<td>8.708</td>
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Table 3
Expanded In-Migration Models

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<th>1970s</th>
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<th>1980s</th>
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<tr>
<td>Intercept</td>
<td>.2191</td>
<td>.2563</td>
<td>.1247</td>
<td>.1284</td>
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<tr>
<td>Property tax</td>
<td>-.0738 (0.000)</td>
<td>-.0097 (0.000)</td>
<td>.0077 (0.067)</td>
<td>.064</td>
</tr>
<tr>
<td>Rent</td>
<td>.2410 (.000)</td>
<td>.2201 (.000)</td>
<td>.1629 (.000)</td>
<td>.1592 (.000)</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-.0239 (0.069)</td>
<td>-.0200 (0.103)</td>
<td>-.0043 (0.006)</td>
<td>-.0050 (0.645)</td>
</tr>
<tr>
<td>Median Household Income</td>
<td>-.0962 (0.036)</td>
<td>-.0885 (0.048)</td>
<td>-.1004 (0.006)</td>
<td>-.0994 (0.007)</td>
</tr>
<tr>
<td>Composite High Amenity</td>
<td>.0786 (.006)</td>
<td>-.266E-04 (.967)</td>
<td></td>
<td></td>
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<tr>
<td>Public Lands Proximity</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Distance to Wilderness</td>
<td>-.0270 (0.000)</td>
<td>-.0015 (0.781)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan Accessibility</td>
<td>-.0158 (0.004)</td>
<td>-.0175 (0.001)</td>
<td>-.0043 (0.327)</td>
<td>-.0040 (0.343)</td>
</tr>
<tr>
<td>Adjusted R-Squared</td>
<td>.50</td>
<td>.52</td>
<td>.19</td>
<td>.19</td>
</tr>
</tbody>
</table>

F value 26.0 28.4 5.93 5.94

Table 4
WHY DID YOU MOVE TO THIS COUNTY?

<table>
<thead>
<tr>
<th>Valid Percent</th>
<th>Cum Percent</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.6</td>
<td>35.6</td>
<td>189</td>
<td>33.1</td>
</tr>
<tr>
<td>63.5</td>
<td></td>
<td>146</td>
<td>25.9</td>
</tr>
<tr>
<td>80.8</td>
<td></td>
<td>92</td>
<td>16.1</td>
</tr>
<tr>
<td>84.4</td>
<td></td>
<td>19</td>
<td>3.3</td>
</tr>
<tr>
<td>86.3</td>
<td></td>
<td>10</td>
<td>1.8</td>
</tr>
<tr>
<td>92.1</td>
<td></td>
<td>10</td>
<td>1.1</td>
</tr>
<tr>
<td>93.2</td>
<td></td>
<td>10</td>
<td>1.1</td>
</tr>
<tr>
<td>93.8</td>
<td></td>
<td>12</td>
<td>4.0</td>
</tr>
<tr>
<td>94.7</td>
<td></td>
<td>4</td>
<td>9.0</td>
</tr>
<tr>
<td>95.7</td>
<td></td>
<td>4</td>
<td>9.0</td>
</tr>
<tr>
<td>100.0</td>
<td></td>
<td>4</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>571</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 5
RELATIVE IMPORTANCE OF FACTORS IN DECISION TO MOVE TO OR STAY IN AREA
(Percentage of respondents)
<table>
<thead>
<tr>
<th>IMPORTANT</th>
<th>NEUTRAL</th>
<th>UNIMPORTANT</th>
<th>MEAN*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape, Scenery &amp; Environ.</td>
<td>77.5</td>
<td>13.3</td>
<td>9.0</td>
</tr>
<tr>
<td>Pace of Lifestyle</td>
<td>76.4</td>
<td>16.0</td>
<td>7.6</td>
</tr>
<tr>
<td>Crime Rate</td>
<td>75.4</td>
<td>17.7</td>
<td>6.9</td>
</tr>
<tr>
<td>Outdoor Recreation</td>
<td>72.1</td>
<td>18.7</td>
<td>9.2</td>
</tr>
<tr>
<td>Climate</td>
<td>65.2</td>
<td>25.5</td>
<td>9.3</td>
</tr>
<tr>
<td>Employment Opportunity</td>
<td>64.1</td>
<td>17.3</td>
<td>18.6</td>
</tr>
<tr>
<td>Access to Family &amp; Friends</td>
<td>61.5</td>
<td>17.8</td>
<td>20.6</td>
</tr>
<tr>
<td>Quality of Schools</td>
<td>55.5</td>
<td>25.8</td>
<td>18.7</td>
</tr>
<tr>
<td>Cost of Living</td>
<td>54.3</td>
<td>38.1</td>
<td>7.6</td>
</tr>
<tr>
<td>Social Services</td>
<td>22.3</td>
<td>66.7</td>
<td>31.0</td>
</tr>
</tbody>
</table>

* The mean was figured based on values given on the seven-point scale in which 1, 2 & 3 = unimportant; 4 = neutral; 5, 6 & 7 = important. This is not a percentage.

### Table 6

<table>
<thead>
<tr>
<th>AGE</th>
<th>EMPLOYMENT</th>
<th>COST OF LIVING</th>
<th>QUALITY OF SCHOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-34 years</td>
<td>70.4</td>
<td>61.1</td>
<td>57.0</td>
</tr>
<tr>
<td>35-49 years</td>
<td>75.0</td>
<td>56.9</td>
<td>62.4</td>
</tr>
<tr>
<td>50-64 years</td>
<td>60.4</td>
<td>52.6</td>
<td>50.0</td>
</tr>
<tr>
<td>65 years or older</td>
<td>57.9</td>
<td>44.1</td>
<td>64.4</td>
</tr>
</tbody>
</table>

### MIGRANT

Native/Moved | Prior to 1985 | Moved 1985-present | 63.3 | 52.6 | 56.9 |

Metropolitan | 68.3 | 56.5 | 54.8 |
Nonmetropolitan | 57.1 | 50.7 | 56.7 |

### CURRENT COUNTY

Metropolitan | 64.7 | 22.6 | 60.2 |
Nonmetropolitan | 66.2 | 21.9 | 63.7 |

### Table 7

STEPWISE DISCRIMINANT ANALYSIS

<table>
<thead>
<tr>
<th>Migrant vs. Non-migrant</th>
<th>Standardized Discriminant Function</th>
<th>Total Canonical Structure</th>
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</thead>
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<tr>
<td>Age Category</td>
<td>0.7188</td>
<td>0.6699</td>
</tr>
<tr>
<td>Educational Attainment</td>
<td>-0.4083</td>
<td>-0.3299</td>
</tr>
<tr>
<td>Yearly Gross Income</td>
<td>0.2614</td>
<td>0.1185</td>
</tr>
<tr>
<td>Sex</td>
<td>-0.0845</td>
<td>-0.1953</td>
</tr>
<tr>
<td>Employment Opportunity</td>
<td>-0.0021</td>
<td>-0.0891</td>
</tr>
<tr>
<td>Cost of Living</td>
<td>-0.2503</td>
<td>-0.2188</td>
</tr>
<tr>
<td>Quality of Schools</td>
<td>0.3024</td>
<td>0.1155</td>
</tr>
<tr>
<td>Climate</td>
<td>-0.3720</td>
<td>-0.0754</td>
</tr>
<tr>
<td>Social Services</td>
<td>0.0910</td>
<td>0.0571</td>
</tr>
<tr>
<td>Access to Family &amp; Friends</td>
<td>0.3848</td>
<td>0.2950</td>
</tr>
<tr>
<td>Outdoor Recreation</td>
<td>0.4383</td>
<td>0.0774</td>
</tr>
<tr>
<td>Crime Rate</td>
<td>-0.3331</td>
<td>-0.1579</td>
</tr>
<tr>
<td>Landscape, Scenery &amp; Environ</td>
<td>0.1171</td>
<td>-0.0331</td>
</tr>
<tr>
<td>Pace of Lifestyle</td>
<td>-0.0805</td>
<td>-0.0806</td>
</tr>
</tbody>
</table>

PERCENT CLASSIFIED CORRECTLY

56.42
<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Eigenvalue</td>
<td>0.1281</td>
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<tr>
<td>Percent of Variance</td>
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<tr>
<td>Cumulative Variance</td>
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<tr>
<td>Canonical Correlation</td>
<td>0.3369</td>
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<tr>
<td>Will's Lambda</td>
<td>0.8865</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>14</td>
</tr>
<tr>
<td>Significance Level</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

* These are the only standardized discriminant function values reported by the analysis.
Analyzing the Relationship Between Amenities and Change in the Well-Being of Nonmetropolitan Localities

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DRAFT
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Chicago, IL
2002

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Introduction

A growing body of recent research has linked the presence of amenities in nonmetropolitan localities to changes in migration patterns, population levels, and business location (see, for example, Beale and Johnson, 1998; Goe et al., 2003; Gottlieb, 1994; McGranahan, 1999; Nord and Cromartie, 1997; Rudzitis, 1999). Overall, the findings from this body of research suggest that nonmetropolitan localities that possess high levels of amenities have enjoyed an increase in their well-being. However, an examination of this literature also indicates that there has been little consistency in how the concept of amenities has been conceptually defined and operationalized in empirical research. Moreover, there is a need for a more comprehensive theoretical specification of the processes by which amenities may exert causal influence on the process of rural development. This purpose of this paper is to move one step toward this goal by: (a) providing a more comprehensive analysis of the concept of amenities as they may be found in nonmetropolitan communities and localities; (b) proposing a new method for operationalizing and measuring such amenities; and (c) investigating how different types of amenities are related to changes in the well-being of nonmetropolitan U.S. localities in the 1980-2000 period.

Defining Amenities

As will be discussed below, the concept of amenities has been used to refer to the climatic conditions found in nonmetropolitan areas (see, for example, McGranahan, 1999). It has also been used to refer to the available stock of natural resources such as forests, mountains, hills, lakes, and rivers, among others (see, for example, McGranahan, 1999; English et al., 2000).

Finally, the concept of amenities has also been used to refer to the availability of opportunities for recreational activity (see, for example, Beale and Johnson, 1998; English et al., 2000). Employing an adaptation of the definition developed by Power (1988:142), we define amenities as qualities of a locality that make it an attractive place to live and work. Amenities provide benefits (or in economic terms, utility or use value) to people through the direct consumption of specific aspects of land, natural resources and human activity (OECD, 1994;1996). Using this definition, amenities could include wildlife and flora, recreational areas, cultivated landscapes, unique settlement patterns, historic sites, and social and cultural traditions, among other aspects.

Power (1988:142) contends that amenities must be “non-marketed” qualities of a locality. Qualities such as climatic conditions and the local stock of natural resources (e.g. presence of mountains and rivers) are not necessarily allocated through markets. However, such non-marketed qualities can be viewed as components of the “landscape” of a locality (Zukin, 1991). We contend that a definition of amenities must include “marketed” qualities of a locality as well. Access to recreational activities, historical sites, and even areas containing natural resources is frequently allocated through markets. Thus, there is a relationship between non-marketed and marketed forms of amenities. A local landscape rich in non-marketed amenities can allow for the development of marketed forms such as recreational services, historical sites, and cultural attractions. This represents one important way in which amenities can contribute to the development of nonmetropolitan localities and communities by promoting business formation, job growth, and inducing income from tourism. In addition, amenities can promote un-related forms of economic development. For example, an attractive landscape can induce investment in new housing developments, shopping centers, and office complexes.

Why are amenities valued? Individuals may secure several types of benefits from
amenities. The most immediate is user value, which is linked to direct, physical use of the amenity. Amenities also may be valued for future use (option value) rather than the immediate future. In some cases, people may not have any plans to use the amenities, but are simply happy to know that they exist (existence value). Finally, nonmetropolitan amenities may be valued because individuals wish to leave the amenity intact for future generations (bequest value) even if they derive no direct utility themselves. These are obviously ideal types, and many amenities may have several different values to individuals.

For the purposes of our discussion, there are several important characteristics of amenities that may influence development prospects. First, amenities are restricted in an absolute sense—nonproductivity. In other words, the use of the amenity is restricted to a specific territory and helps distinguish the territory from others. It is nearly impossible to re-create a historic site or a wildlife area. Second, the consumer value of the amenity is extremely sensitive and it is impossible to restore the value once it has been destroyed—irreversibility. An example would be the benefits derived from a wilderness area. It would be very difficult to reverse the damage once it occurs. Third, amenities are positively and strongly correlated with income, a phenomenon economists refer to as high income elasticity. As demand for living in high amenity areas increases, the cost of living in these places may become very high. At the same time, people may choose to live in high amenity areas, even though the wages may not be as high as other areas or the opportunities for employment are not as great. In fact, some economists have suggested that wages should be lower and unemployment higher in these areas because of the other benefits associated with living in these areas (Power 1996). Finally, amenities are generally nonsubstitutable; they are unique in a sense. A wildlife area is unique and cannot be substituted with another type of amenity or even another wildlife area.

Potential Relationships Between Amenities and the Development of Nonmetropolitan Localities

What is the relationship between amenities and development? An OECD study (1994) identified four potential relationships between amenities and development (see Table 1). A primary concern is that development will lead to the destruction of amenities (Cell A). This relationship is most likely to occur where there is rapid growth in a region and the expansion of the built environment and/or population begins to threaten or deplete the local stock of amenities. For example, this occur when the construction of new housing developments and shopping centers involves the destruction of forest space within a locality.

(Table 1 about here)

The opposite relationship is also possible; that is, non-development can also lead to the destruction of amenities (Cell B). One example of this type of relationship is the effects of depopulation on the maintenance of old buildings and the landscape. Some types of amenities may require a minimal level of support, or investment, to maintain them. For example, historic sites and cultural amenities may require a minimal level of development to provide the resources to save these amenities.

Preservation of amenities also may affect development. Preservation can lead to nondevelopment (Cell C). In this scenario, activities supporting the preservation of amenities leads to a slowdown or decline in the economy. One example of this situation would be curtailing economic activities by setting aside land for a natural area or park. This issue, for example, was the basis of much of the conflict in the Northwest U.S. over the spotted owl (Freudenburg et al., 1998).

Finally, preservation or promotion of amenities can lead to further development (Cell D).
An example of this type of relationship might be eco-tourism projects that preserve the natural environment, and also help contribute to local economic development by creating new jobs and attracting consumer dollars into the region. It is our contention that this relationship between the preservation of amenities and economic development would be the most conducive to promoting an increase in the well-being of nonmetropolitan localities.

**Defining Locality Well-Being**

A locality is defined as a spatially-bound system of social relationships within which households and their constituent members engage in work and other activities in order to meet their material living needs (Bloomquist et al., 1993; Bradley and Lowe, 1984; Jonas, 1988; Lobo, 1990). Simply put, a locality is a geographic territory that encompasses a local labor market, residential spaces, and business spaces, and other essential institutions, within which a local population meets its material living needs. As such, a locality could encompass one or more communities (here defined as a geo-political settlement), and their surrounding trade areas.

We define **locality well-being** as being based upon the extent of access, and level of equity in access to key societal resources required for a locality to provide for the material living needs of human beings. The first dimension of this construct - extent of access - refers to the stock of key societal resources held by a locality that may be applied to meeting material living needs. This dimension is hereafter referred to as the **absolute** dimension of locality well-being.

In societies organized on the basis of a capitalist market economy such as the United States, the material living needs for the population are predominantly met through formal employment in a labor market in exchange for wages and other forms of income. In turn, the earned income allows population members to meet sustenance needs and other wants and desires through procuring goods and services through markets. Thus, key resources affecting locality well-being would include the local stock of jobs and income. In addition to these economic resources, the competitive status of a locality within the context of a market economy would be dependent upon the stock of persons required to innovate, and staff, form, maintain, and expand local business enterprises and other institutions focused on meeting living needs.

The second dimension of the construct locality well-being - level of equity in access - refers to extent to which the stock of local economic resources is equitably distributed among households within the locality. This second dimension is hereafter referred to as the **relative** dimension of locality well-being. Households are used as the social unit of reference because they represent the key unit under which the process of meeting material living needs is organized within a locality. Localities in which the local stock of resources is more equitably distributed among households would have higher levels of well-being as presumably the greatest good would be met for the greatest number. In sum, based on the logic presented, localities that possess a larger stock of societal resources with economic resources being more equitably distributed among households would have the highest levels of locality well-being.

**The Relationship Between Amenities and Change in Locality Well-Being**

Theoretically, the types of amenities possessed by a nonmetropolitan locality have the potential to promote change in the well-being of nonmetropolitan localities through influencing the pattern of local economic development, and by engendering desirable lifestyles and experiences for residents and tourists. The possession of an attractive stock of amenities has the capacity to promote the expansion of the population within a nonmetropolitan locality, both permanently and/or on a temporary basis. Such amenities can serve as an important pull factor inducing the immigration of permanent or seasonal residents into a locality where they can enjoy the lifestyles and experiences that the amenities permit. In support of this proposition, Beale and
Johnson (1998) and McGarahan (1999) found that nonmetropolitan counties that possessed higher levels of amenities had higher rates of in-migration and population growth. In addition, English et al. (2000) found higher levels of amenities in counties with high levels of tourism.

The stock of amenities possessed by a nonmetropolitan locality, and the population growth associated with it, can influence the pattern of economic development within a nonmetropolitan locality. As noted above, the presence of a particular stock of amenities may influence investment in infrastructure (e.g., ski areas) and business start-ups (e.g., whitewater rafting services) that allows the population to engage in recreational activities and/or interface with the local amenity base. Moreover, the amenity base may also serve as a backdrop, or part of the local landscape, which induces and enhances investment (local or exogenous in origin) in other types of business or commercial endeavors (e.g., housing developments, shopping complexes, commercial buildings). In turn, such investment can create new jobs within the locality. In support of this logic, McGarahan (1999) found employment growth to be higher in nonmetropolitan counties with high levels of amenities.

It has been proposed that amenities are an important factor influencing the location of business firms, particularly in industries with a highly skilled, mobile workforce such as professional services, finance and high technology (for a review of this literature, see Gottlieb, 1994). In effect, business owners seek to locate firms from these industries in amenity rich areas because of the lifestyles and leisure experiences they allow the business owners, managers, and employees to enjoy. In turn, this reduces employee turnover and makes a company a more attractive place to work. In support of this logic, Florida (2000) found that the stock of local amenities was an important factor influencing where highly educated workers prefer to reside. In turn, this influences where high technology industries locate.

With amenity-related growth of the local population, tourism, and the number of businesses and jobs in the local economy, the income base within the locality expands as well. In effect, the interaction and reinforcement of these factors increases the absolute well-being of the locality. Simultaneously, the nature of the income stream brought into the locality by new immigrants, and the characteristics and wage rates of the new jobs being created can have important effects on inequality and the relative well-being of the locality. For example, the immigration of large numbers of wealthy residents into a locality with little previous wealth, combined with the creation of large numbers of low-wage jobs, could serve to increase inequality and reduce relative well-being. Alternatively, the immigration of new residents with similar incomes to existing residents, combined with the creation of large numbers of higher paying jobs, may serve to reduce inequality and increase relative well-being.

We now turn to empirically analyzing the relationship between the changes in the well-being of nonmetropolitan localities that took place during the post-1980 period and the presence of different types of amenities. The primary goal will be to determine whether or not the changes in locality well-being that were experienced by nonmetropolitan localities in the U.S. during this period can be linked to the presence of amenities; and, to identify particular types of amenities that are related to the improvements in locality well-being.

Data and Research Methods

In order to examine the relationship between the presence of amenities and change in the well-being of nonmetropolitan localities, a panel data set was constructed for the 1980-2000 period from multiple data sources. This time period was selected because: (a) as will be shown below, it was a period in which the well-being of nonmetropolitan localities in the U.S. tended to increase; (b) it encompasses two long-term expansions in the U.S. economy; and (c) it
corresponds to scarce, available data on the presence of amenities in the nonmetropolitan U.S. The two periods of economic expansion provided the potential for amenity-related investment and development in the nonmetropolitan U.S.

An Operational Definition of the Locality

Identifying an empirical referent for the theoretical concept of locality poses a difficult problem for social science research as the true geography of localities may not match the geographic spaces for which social science data are commonly collected. Given that a labor market represents a central institution of a locality as we have conceptually defined it, the commuter zone geography delineated by Charles Tolbert and Molly Sizer (1996) was used to approximate localities in nonmetropolitan America.

Using data drawn from the 1990 Census of Population and Housing that measures the location where residents of a county commute to work, Tolbert and Sizer (1996) delimited 394 labor market areas in the United States. These labor market areas were identified using a cluster analysis algorithm which delineated groups of interdependent counties based on the strength of their commuting flows and the combined size of their population. A labor market area consists of a set of counties that: (a) are interdependent as a result of having strong commuting ties among residents; and (b) have a minimum population of 100,000 persons.

Contained within each group of counties comprising a labor market area were subsets of counties entitled commuter zones. The subset of counties comprising a commuter zone exhibited strong interdependence in terms of the commuting patterns of residents, but had less than 100,000 in combined population. A comparison of commuter zones versus labor market areas for the nonmetropolitan U.S. indicated that the size of the geographic space of many labor market areas was much too large to be considered a reasonable approximation for the space in which a labor market would function. This was likely the result of having to meet the criterion of 100,000 in combined population. Thus, given their smaller geographic size, commuter zones were deemed to represent a better approximation of the geography of labor markets in the nonmetropolitan U.S.

Given this reasoning, the theoretical population for this study consists of all nonmetropolitan commuter zones in the U.S. as delineated by Tolbert and Sizer (1996). However, due to changes in county definitions and the lack of available data, nonmetropolitan commuter zones in Alaska and Hawaii had to be eliminated from the analysis. Therefore, the study population consists of the 466 nonmetropolitan commuter zones in the continental U.S.

The Operationalization & Measurement of Locality Well-Being

The absolute dimension of locality well-being was measured through the development of an index comprised of three indicators of the key economic and human resources discussed above: (a) total employment; (b) aggregate income (in constant 1999 dollars); and (c) total population. Data for these three indicators were collected for the years 1980 and 2000 for all 466 nonmetropolitan commuter zones in the continental United States. These data were collected from the Census of Population and Housing (U.S. Department of Commerce, Bureau of the Census, 1993, 2003).

The relative dimension of locality well-being was measured through the development of a statistical index that was comprised of four indicators of the level of equity in the distribution of economic resources among households within a locality: (a) the % of households with incomes that were less than or equal to one half of the average household income within a locality (the half share coefficient); (b) the % of households with incomes that were less than or equal to the average household income within a locality (the equal share coefficient); (c) the % of households
with incomes that were greater than or equal to twice the average household income in the
commuter zone (the double share coefficient); and (d) the % of households with incomes below
the poverty threshold. The data for these four indicators were also collected for the years 1980
and 2000 for all 466 nonmetropolitan commuter zones in the continental U.S. from the "Census of

The dimensionality of these indicators as measures of the two dimensions of locality
well-being was tested with factor analysis using the principal components method of extraction.
Moreover, the reliability of each index was tested through correlational analysis and the
computation of Cronbach's alpha. The results of the confirmatory factor analysis supported the
two-dimensional measurement model of the locality well-being construct. Both indices were
found to have a high degree of reliability for the years each index was measured. The results of
these analyses and a discussion of the methods used to construct each index and compute
composite index scores is presented in Appendix A.

The Operationalization and Measurement of Amenities

As noted above, key amenities of nonmetropolitan localities include natural resources,
outdoor recreational opportunities, and cultural/historical attributes. In effort to measure these
types of amenities, data were collected from the National Outdoor Recreation Supply Information
System (NORSIS) compiled by the Forest Service of the United States Department of
Agriculture. NORSIS is a county-level database that contains a wide range of indicators
measuring outdoor recreational facilities, natural resources, and cultural/historical attractions,
among other variables. Drawn from multiple sources, the majority of the variables in this
database were measured during the mid 1980s to early 1990s (see Betz, 1997). NORSIS data
were first extracted for all nonmetropolitan counties in the U.S. These data were then aggregated
into the 466 nonmetropolitan commuter zones (Tolbert and Sizer, 1996) as approximations of all
nonmetropolitan localities in the continental U.S. Statistical indices were then constructed to
measure the extent to which different types of amenities were present in these nonmetropolitan
localities.

Indices Measuring Natural Resource Amenities

The NORSIS data indicated that a wide range of natural resources that are present in the
nonmetropolitan U.S. It was reasoned that in order to be considered an amenity, the natural
resources present within a nonmetropolitan locality must somehow contribute toward providing
an appealing visual landscape or climate for residents and tourists. Natural resources fulfilling
this role could be either land-based, such as mountains or forests; or, they could be water-based,
such as rivers, lakes, or oceans. An index of land-based, natural resource amenities was
constructed from the following indicators:

a. Acres of Mountains
b. Acres of Forest & Grassland Managed by the USDA - Forest Service
c. Acres of Federal Land Managed by the National Park Service
d. Total Acreage Under the National Wilderness Preservation System

Analysis of the NORSIS data indicated that the spatial patterning of the different types of
water-based, natural resource amenities was not highly correlated across nonmetropolitan
localities. As a result, water-based, natural resource amenities were divided into three different
categories. The first type was river-based, natural resource amenities. An index measuring the
presence of this type of water-based, natural resource amenity was constructed from the
following indicators:

a. Total River Miles
b. River Miles With Recreational Value
c. River Miles With Scenic Value
d. River Miles With Wildlife Value²

The second type of water-based amenities was lake-based, natural resource amenities.

An index measuring the presence of this type of water-based amenities was constructed from the following indicators:

a. Acres of Water Bodies in Lakes >= 40 Acres in Size
b. Acres of Lakes and Streams
³

c. Acres Designated as Primary or Secondary Use in Water-Based Recreation

The third type of water-based amenities was ocean-based, natural resource amenities.

Unfortunately, the NORSIS database did not include measures of land or natural resource features that were unique to the beaches or coastlines of oceans. Based upon the data that were available, a binary variable was created that measured whether or not a nonmetropolitan locality had at least one county that abutted the ocean coast.

Indices Measuring Recreational Amenities

Seasonal climatology is an important factor influencing the types of outdoor recreational activities that can be found within a nonmetropolitan locality. Many forms of outdoor recreation are predominantly conducted in warm weather (e.g., golf), while other recreational activities are predominantly conducted in cold weather (e.g., snow skiing). The concept of recreational amenities refers to the infrastructure and services that permit outdoor recreational activities to be conducted. An index of warm weather, outdoor recreational amenities was constructed from the following set of indicators:

a. Number of Parks & Recreation Departments
b. Number of Local, County, or Regional Parks
c. Number of Amusement Places
d. Number of Public & Private Golf Courses
e. Number of Riding Academies & Stables
f. Number of Organized Camps

A second index of cold weather, outdoor recreational amenities was constructed from the following set of indicators:

a. Number of skiing centers/resorts
b. Number of cross-country skiing firms
c. Number of downhill skiing areas
d. Lift capacity per hour

Index Measuring Historical/Cultural Amenities

Any aspect of the historical legacy or culture of a nonmetropolitan locality could be considered an amenity if it results in the development of a facility, service, or some form of infrastructure for the purposes of educating and/or entertaining local residents and tourists. An index of historical/cultural amenities was constructed from the following indicators:

a. Number of Historic/Cultural Tourist Attractions
b. Number of Amusement/Entertainment Tourist Attractions
c. Number of Natural Resource Tourist Attractions

Methods for Constructing Indices

The dimensionality of each index was tested through factor analysis using the principal components method of extraction. While this procedure assumes that variables are normally distributed, the distributions of the amenities comprising each index were found to be highly skewed across the geography of the nonmetropolitan continental U.S. Therefore, prior to

²These data were drawn from the National Rivers Inventory, which is a comprehensive listing of the U.S.'s free-flowing, relatively undeveloped river segments with outstanding wild, scenic, or recreation potential. The National Rivers Inventory does not include rivers officially designated Wild & Scenic Rivers. It includes only those rivers eligible for, and with potential for, Wild & Scenic classification (Betz, 1997).

³This includes lakes, streams, and other bodies of water < 40 acres in size, and reservoirs, bays, gulfs, and estuaries >= 40 acres in size.

⁴This includes national monuments and historic/military sites operated by the National Park Service.
conducting the factor analysis, power transformations were used to correct the asymmetries in the distributions of the variables comprising each index (see Fox 1997:59-67). Given the differences in measurement scales used in measuring the amenity indicators, the variables comprising each index were then standardized into z scores, multiplied by their factor loadings, and summed to form an index score. The reliability of each index was assessed through correlational analysis and the computation of Chronbach’s alpha. The results of these analyses and the methods used to compute composite scores on each index are detailed in Appendix B. Each index was found to be a unidimensional measure with an acceptable degree of reliability.

Control Variables

In addition to amenities, other factors that were deemed likely to influence change in the well-being of nonmetropolitan localities included the structural attributes of the local labor market, the composition of households, the educational attributes of the labor force, and the spatial context of the locality. For purposes of statistical control, measures of these variables were incorporated into the analysis. Indicators of the structure of the local labor market that were utilized included measures of the sectoral distribution of employment during the study period. These included the percentage of total employment in a nonmetropolitan locality accounted for by: (a) construction; (b) non-durable manufacturing; (c) durable manufacturing; (d) transportation; (e) wholesale trade; (f) retail trade [except eating and drinking places]; (g) eating and drinking places; (h) repair services; (i) entertainment and recreation services; (j) health care; (k) educational services; (l) social services; (m) producer services; and (n) government.

An additional indicator of the structure of the local labor market that was utilized was the percentage of total employment accounted for workers employed on a temporary basis. A worker was considered employed on a temporary basis if he/she worked less than 40 weeks during the previous year. The percentage of the working age population (18 to 65 years of age) that held a college degree or had engaged in graduate work of some type was used as an indicator of the educational attributes of the local labor force. Three indicators of household composition were used. These included the percentage of households headed by females, the percentage of households headed by elderly persons (65 years of age or older), and the percentage of households headed by persons who were minorities (i.e., not Caucasian). Finally, spatial context was measured by a binary variable indicating whether or not a nonmetropolitan locality had at least one county that was adjacent to a metropolitan area.

Method of Data Analysis

In order to examine the relationship between the change in the well-being of nonmetropolitan localities and the presence of amenities, linear panel models were estimated using ordinary least-squares regression analysis. The method of estimating panel models with change scores advocated by Allison (1990) was used. Employing this method, the following model specification was used:

\[ y_{it} - y_{it-1} = \tau + \sum (\beta_i x_{it} + \beta_{i,t-1} x_{it-1} + \ldots + \beta_{i,T} x_{iT}) + \epsilon_{it} \]

With this model specification, measures of the independent variables are temporally subsequent to the measurement of the dependent variable at the base point in time, and prior to the measurement of the dependent variable at the end point of the time period examined. This allows the determination of whether the presence of the independent variables during the time period under examination is associated with the change in the dependent variable between the two time periods. Employing this model specification, change scores on the indices measuring the absolute and relative dimensions of locality well-being were each regressed on a vector of
independent variables that includes the six amenity indices, the binary measure of whether or not a locality abunted the ocean coast, and the control variables. Regression diagnostics (Fox, 1997; 1991) were used to assess the extent to which key assumptions of the regression model were met by the data.

Two panel models were estimated for both indices measuring the absolute and relative dimensions of locality well-being. The first model included only the amenity variables. The second model included the amenity variables and the control variables. This allowed an assessment of whether the introduction of the control variables affected the relationships between the amenity indices and the dependent variables. As will be seen below in the table of descriptive statistics for the study variables (see Table 2 below), scores on the indices measuring the absolute dimension of well-being, lake-based, natural resource amenities, and historical/cultural amenities were strongly skewed. This was also true for a number of the control variables. In these cases, appropriate power transformations were identified and employed that reduced the asymmetry in the distributions of these variables (see Fox, 1997:64-67). The transformed variables were then employed in the regression models.

It is important to note that it is not assumed that amenities exert a direct causal influence on the change in well-being of nonmetropolitan localities. Rather, as was described at the beginning of this chapter, it is assumed that a local stock of amenities can only exert an indirect causal influence on the well-being of a locality through influencing the pattern of local economic development and the nature of local lifestyles and experiences that such amenities permit for local residents and tourists. Thus, the panel models do not provide direct causal evidence that well-being increased within a locality as a result of the local stock of particular types of amenities. Rather, at best, they can only provide evidence that the largest increases in well-being tended to occur in nonmetropolitan localities with high (or low) levels of specific types of amenities. The intervening processes described earlier in the paper can therefore only be assumed.

Research Findings

Descriptive statistics for the variables in the panel models are provided in Table 2. These data indicate that locality well-being tended to increase among the 466 nonmetropolitan commuter zones in the U.S. over the 1980-2000 period. The mean change on the absolute well-being index was +4056.73, indicating that nonmetropolitan localities tended to have experienced an increase in population, employment and constant aggregate income. Out of the 466 localities that were examined, 439 (94.2%) experienced an increase on the absolute dimension of well-being while only 27 (5.8%) experienced a decline over the 1980-2000 period.

The locality surrounding Fredericksburg, Virginia experienced the largest increase in absolute well-being over the 1980-2000 period. Located in northern Virginia, approximately half way between Washington, D.C. and Richmond, this locality consists of the city of Fredericksburg and the four county area of Stafford, King George, Spotsylvania, and Caroline counties. During the 1980-2000 period, the total population within the Fredericksburg locality increased by 122,370 persons, total employment increased by 69,367 jobs, and real aggregate income increased by an estimated $4.1 billion (in constant 1999 dollars).

(Table 2 about here)

Over the course of the 1980-2000 period, relative well-being increased and inequality tended to decline within nonmetropolitan localities. The mean change in the relative well-being index between 1980-2000 was found to be -10.26 index points, indicating that income inequality and the poverty rate tended to have declined. It is important to note that these data do not address
changes in inequality between nonmetropolitan localities. Rather, they indicate that the central tendency was for inequality to decline within nonmetropolitan localities. Overall, 442 (94.8%) of the 466 nonmetropolitan localities experienced a decline in inequality over the 1980-2000 period while only 24 (5.2%) experienced an increase.

It was found that the commuter zone surrounding Lake Providence, Louisiana had the largest decline in inequality among all nonmetropolitan localities in the U.S. over the 1980-2000 period. Located in the northeast corner of Louisiana, this two county area consists of East Carroll Parish and West Carroll Parish. During the 1980-1990 period, the percentage of households with incomes less than or equal to one half of the average household income declined by 7.3%; the percentage of households with incomes less than or equal to the average household income declined by 2.9%; and the percentage of households with incomes greater than or equal to twice the average income increased by 11.7%. Finally, the percentage of households with incomes below the poverty threshold declined by 11.5%.

The face validity of the indices measuring the different types of amenities was also assessed by determining whether or not commuter zones with the highest scores on each index actually possessed the amenities in question. Important amenities were then identified. Table 3 lists selected findings from this assessment. Overall, this assessment provided support for the face validity of the amenity indices.

(Table 3 about here)

The results of the linear panel analysis for change in the absolute well-being index over the 1980-2000 period are presented in Table 4. The results for the panel model including only the seven amenity variables are listed under Model 1. This model fits the data with a strong goodness-of-fit (F statistic significant at the .001 level, adjusted $r^2$ is .679). The level of warm weather, outdoor recreation amenities was found to be positively related to the growth in absolute well-being that occurred during the 1980-2000 period among nonmetropolitan localities. A positive relationship was also found for the level of historical/cultural amenities. The level of land-based, natural resource amenities, river-based, natural resource amenities, lake-based, natural resource amenities, cold weather, outdoor recreational amenities, and location on the ocean coast, were not found to have a relationship with change on the absolute dimension of local well-being over the 1980-2000 period. In effect, growth in population, employment, and constant aggregate income tended to take place in nonmetropolitan localities that had high levels of warm weather, outdoor recreation and historical/cultural amenities. Of the two amenity variables that had a significant relationship, warm weather, outdoor recreation amenities was found to have the strongest effect on change in absolute well-being.

(Table 4 about here)

With the introduction of the control variables, the effects of these amenity variables remained positive and significant. (see Model 2 in Table 4). However, the effects for both variables diminished in magnitude, particularly that of historical/cultural amenities. While the introduction of the control variables into the model also changed the magnitude of the effects of several of the other amenity variables, none were found to be significant as a result of statistical suppression. The addition of the control variables modestly increased the goodness-of-fit of the panel model (adjusted $r^2$ increased from .679 to .760). Out of the control variables, the percentage of 1990 employment in nondurable manufacturing, durable manufacturing, producer services, and government were found to be positively related to growth in absolute well-being over the 1980-2000 period. The percentage of 1990 employment in social services, and the percentage of households in 1990 headed by elderly persons were both found to be negatively
related to change in absolute well-being. Finally, being located adjacent to a metropolitan area
was found to be positively related to change in absolute well-being.

The results of the linear panel analysis for change in the relative well-being index over
the 1980-2000 period are presented in Table 5. Again, the results for the panel model including
only the seven amenity variables are listed under Model 1. This model fits the data with a
relatively weak goodness-of-fit (F statistic significant at .001 level, adjusted $r^2$ is .162). The level
of land-based, natural resource amenities was found to be positively associated with the change
in scores on the relative well-being index over the 1980-2000 period. A positive relationship
indicates that nonmetropolitan localities with high levels of land-based, natural resource
amenities tended to experience an increase in inequality over the 1980-2000 period. The level of
lake-based, natural resource amenities was found to be negatively associated with change in
relative well-being over the 1980-2000 period. Thus, statistically controlling for the other types
of amenities, nonmetropolitan localities with high levels of lake-based, natural resource
amenities tended to experience declines in inequality over the 1980-2000 period.

(Table 5 about here)

The level of river-based, natural resource amenities, location on the ocean coast, warm
weather, outdoor recreation amenities, cold weather, outdoor recreational amenities, and
historical/cultural amenities were not found to have a relationship with change on the relative
dimension of locality well-being during the study period. Out of the two significant amenity
variables, the level of land-based, natural resource amenities was found to have the strongest

The introduction of the control variables into the linear panel model changed the
relationships between the two significant amenity variables and change in relative well-being.

The effect of land-based natural resource amenities was substantially diminished in magnitude,
but remained positive and significant (see Model 2 in Table 5). The effect of lake-based, natural
resource amenities was slightly diminished, remained negative, but was no longer significant.
While the introduction of the control variables into the model also changed the magnitude of the
effects of several of the other amenity variables, none were found to be significant as a result of
statistical suppression.

The introduction of the control variables increased the goodness-of-fit of the linear panel
model from a weak to a moderate level (the adjusted $r^2$ square increased from .162 to .317).
Among the control variables, the percentage of total employment in construction, the percentage
of total employment in repair services, and the percentage of households headed by elderly
persons were all found to be associated with declines in inequality over the 1980-2000 period.
Finally, the percentages of total employment in transportation and retail trade were found to be
associated with an increase in inequality during the study period.

Discussion

The findings indicate that the spatial distribution of amenities is highly skewed across
the nonmetropolitan U.S. In regard to all of the types of amenities examined, a small subset of
nonmetropolitan localities typically possesses inordinately higher levels compared to other
localities. A number of nonmetropolitan localities were found to have inordinately high levels
of two or more types of amenities. The locality encompassing Flagstaff, Arizona was found to
rank among the top ten localities on four types of amenities — land-based, natural resource
amenities, river-based, natural resource amenities, warm weather, outdoor recreation amenities,
and historical/cultural amenities — while having the second highest increase on the absolute well-
being index during 1980-2000. Nonmetropolitan localities that ranked among the top ten on two
types of amenities included: Altamont, OR; Lewiston, ID; Okanogan, WA; Port Angeles, WA; Rhinelander, WI; Claremont, NH; Glenwood Springs, CO; and Morristown, TN. All of those localities also experienced substantial increases on the absolute dimension of locality well-being.

These specific cases would suggest that having high levels of multiple types of amenities should be systematically related to increases in locality well-being during the study period. However, the results from the linear panel analyses indicate that across all nonmetropolitan localities: (a) only two types of amenities were related to change on the absolute dimension of locality well-being; and (b) only one type of amenity was related to change on the relative dimension of locality well-being. Controlling for the structural attributes of the local labor market, the composition of households, the educational attributes of the labor force, and spatial context, nonmetropolitan localities with high levels of warm weather, outdoor recreational amenities and high levels of historical/cultural amenities were found to have experienced the highest increases on the absolute dimension of locality well-being (i.e., population, employment, and constant aggregate income) over the 1980-2000 period. Moreover, employing the same control variables, nonmetropolitan localities with high levels of land-based natural resource amenities were found to have experienced higher levels of inequality over the study period.

Taken as a whole, the level of amenities possessed by a nonmetropolitan locality was found to be much more strongly associated with change on the absolute dimension of locality well-being compared to the relative dimension. Excluding the control variables, the seven amenity variables explained a much higher proportion of the variation in the change scores on the absolute well-being index compared to the relative well-being index. In turn, this suggests that the intervening processes by which amenities influence the local pattern of economic development and the lifestyles and experiences available to residents and tourists are more strongly tied to change on the absolute dimension of locality well-being.

The stock of amenities within a locality are often consciously utilized to promote local development; and, local amenities can be used as a central element in the social construction of the image of a locality, thereby prompting persons to perceive it as an attractive place in which live, work, visit, locate a business, or invest in certain types of economic activity. Given that the specification of the panel models is partly determined and limited by data availability, the empirical findings do not directly examine these intervening processes.

The panel models assume that there is a lag of approximately five to ten years before the effects of amenity, labor market structure, household composition, education attributes and spatial context variables on locality well-being would be felt. While this panel model specification would be useful for identifying net, long term effects, it seems reasonable that the actual time lag in these effects may be shorter in duration. Moreover, considered over time, there would likely be a feedback loop in these effects. For example, the local stocks of specific types of amenities may promote an increase in absolute well-being in a shorter time frame, which in turn, would promote investment and growth in particular types of amenities (e.g. golf courses, riding stables, cultural and historical attractions, etc.). This would seem particularly likely with those amenities that require investment in infrastructure and services in order that they be consumed or experienced (e.g., recreational and historical/cultural amenities); or, those that may be depleted as a result of the expansion of the built environment (e.g., deforestation) that would likely accompany growth.

This points to a second shortcoming in that the intervening processes by which particular types of amenities ultimately promote increases in locality well-being may involve dynamic processes among the intervening variables themselves. For example, the local stocks of specific
types of amenities may promote a particular pattern of economic restructuring, or changes in the composition of local households. In turn, these changes may promote increases in locality well-being. Logically, local stocks of amenities would seem to directly influence development of service industries focused on meeting the consumption and leisure-time needs of residents and tourists.

In closing, this research has identified an empirical link between the presence of specific types of amenities and change the well-being of nonmetropolitan U.S. localities over the 1980-2000 time period. While constrained by the availability of adequate data, further research is needed in order to understand the intervening processes by which: (a) higher levels of warm weather, outdoor recreational amenities and historical/cultural amenities led to higher levels of growth in population, employment, and real aggregate income in nonmetropolitan localities; and (b) by which higher levels of land-based natural resource amenities inhibited the decline in inequality that occurred within the vast majority of nonmetropolitan localities during the study period.

References


Blomquist, Leonard E., Christina Gringeri, Donald Tombaskovic-Devey, and Cynthia Truelove.


<table>
<thead>
<tr>
<th>(A) Economic Development Destroys Amenities</th>
<th>(C) Preservation of Amenities Contributes to Nondevelopment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(B) Lack of Development Destroys Amenities</td>
<td>(D) Preservation of Amenities Leads to Economic Development</td>
</tr>
</tbody>
</table>

### Table 2. Descriptive Statistics for Variables in Panel Models (N=466)

<table>
<thead>
<tr>
<th></th>
<th>Mean (Proportion)</th>
<th>Standard Deviation</th>
<th>Median</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Δ Absolute Well-Being Index, 1980-2000</td>
<td>4056.73</td>
<td>5227.32</td>
<td>2312.03</td>
<td>2.79</td>
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<tr>
<td>Δ Relative Well-Being Index, 1980-2000</td>
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<td>-10.43</td>
<td>0.23</td>
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<td><strong>Amenity Variables:</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Index of Land-Based, Natural Resources Amenities</td>
<td>2.92</td>
<td>6.30</td>
<td>0.62</td>
<td>1.03</td>
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<td>Index of River-Based, Natural Resources Amenities</td>
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<td>15.94</td>
<td>11.25</td>
<td>0.97</td>
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<tr>
<td>Index of Lake-Based, Natural Resources Amenities</td>
<td>46225.85</td>
<td>88777.50</td>
<td>25563.30</td>
<td>8.52</td>
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<td>Locality Abuts Ocean Coast</td>
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<td>...</td>
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<td>Index of Warm Weather, Outdoor Recreation Amenities</td>
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<td>-3.69</td>
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<td>Index of Cold Weather, Outdoor Recreation Amenities</td>
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<td>1.92</td>
<td>-1.55</td>
<td>2.05</td>
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<td>Index of Historical/Cultural Amenities</td>
<td>-0.70</td>
<td>0.24</td>
<td>-0.80</td>
<td>3.13</td>
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<td><strong>Control Variables:</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>% Total Employment in Construction, 1990</td>
<td>1.71</td>
<td>1.44</td>
<td>1.26</td>
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<tr>
<td>% Total Employment in Nondurable Manufacturing, 1990</td>
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<td>5.50</td>
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<td>6.21</td>
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<td>1.21</td>
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<td>% Total Employment in Transportation, 1990</td>
<td>3.88</td>
<td>1.20</td>
<td>3.72</td>
<td>2.64</td>
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<tr>
<td>% Total Employment in Wholesale Trade, 1990</td>
<td>3.25</td>
<td>1.12</td>
<td>3.17</td>
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<tr>
<td>% Total Employment in Retail Trade, 1990</td>
<td>12.07</td>
<td>1.82</td>
<td>12.23</td>
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<tr>
<td>% Total Employment in Eating and Drinking Places, 1990</td>
<td>4.80</td>
<td>1.41</td>
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<tr>
<td>% Total Employment in Repair Services, 1990</td>
<td>4.94</td>
<td>1.56</td>
<td>4.61</td>
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<tr>
<td>% Total Employment in Entertainment and Recreation Services, 1990</td>
<td>0.98</td>
<td>0.69</td>
<td>0.85</td>
<td>4.06</td>
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### Table 2 Continued

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<tr>
<td>% Total Employment in Health Care, 1990</td>
<td>7.70</td>
<td>2.12</td>
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<td>% Total Employment in Educational Services, 1990</td>
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<td>% Total Employment in Social Services, 1990</td>
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<td>0.88</td>
<td>3.13</td>
<td>0.59</td>
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<tr>
<td>% Total Employment in Producer Services, 1990</td>
<td>6.92</td>
<td>1.82</td>
<td>6.69</td>
<td>1.37</td>
</tr>
<tr>
<td>% Total Employment in Government, 1990</td>
<td>5.43</td>
<td>2.45</td>
<td>4.81</td>
<td>2.40</td>
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<tr>
<td>% Total Employment in Temporary Jobs, 1990</td>
<td>19.62</td>
<td>3.10</td>
<td>18.76</td>
<td>1.32</td>
</tr>
<tr>
<td>% Working Age Population With College Degree, 1990</td>
<td>13.14</td>
<td>4.12</td>
<td>12.69</td>
<td>1.62</td>
</tr>
<tr>
<td>% Households Headed by Females, 1990</td>
<td>27.71</td>
<td>4.36</td>
<td>27.34</td>
<td>0.71</td>
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<tr>
<td>% Households Headed by Elderly Persons, 1990</td>
<td>27.81</td>
<td>5.49</td>
<td>27.57</td>
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<tr>
<td>% Households Headed by Minorities, 1990</td>
<td>9.49</td>
<td>12.59</td>
<td>5.57</td>
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<td>Locality Adjacent to Metro. Area, 1993</td>
<td>0.45</td>
<td>0.50</td>
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<thead>
<tr>
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<th>( b ) (S.E.)</th>
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<tr>
<td>% Total Employment in Social Services, 1990</td>
<td>...</td>
<td>-4.124***</td>
</tr>
<tr>
<td>% Total Employment in Producer Services, 1990</td>
<td>...</td>
<td>1.6479**</td>
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<tr>
<td>% Total Employment in Government, 1990 (log)</td>
<td>...</td>
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<tr>
<td>% Total Employment in Temporary Jobs, 1990</td>
<td>...</td>
<td>12.6614*</td>
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<tr>
<td>% Working Age Population With College Degree, 1990</td>
<td>...</td>
<td>(5.8748)</td>
</tr>
<tr>
<td>% Households Headed by Females, 1990</td>
<td>...</td>
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<tr>
<td>% Households Headed by Elderly Persons, 1990</td>
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<td>(0.2623)</td>
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<tr>
<td>% Households Headed by Minorities, 1990</td>
<td>...</td>
<td>(0.7727)</td>
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<tr>
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<td>0.1781</td>
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<tr>
<td>Intercept</td>
<td>134.8963***</td>
<td>152.8195***</td>
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<tr>
<td>F Statistic for Model</td>
<td>141.47***</td>
<td>51.44***</td>
</tr>
<tr>
<td>Adjusted r-square</td>
<td>.679</td>
<td>.760</td>
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*** \( p < .001 \)  ** \( p < .01 \)  * \( p < .05 \)

### Table 5. Ordinary Least Squares Estimates from Regression of Change in the Relative Well-Being Index, 1980-2000, on Amenity and Control Variables

<table>
<thead>
<tr>
<th>Change (( \Delta )) in Relative Well-Being Index, 1980-2000</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variables</td>
<td>( b ) (S.E.)</td>
<td>( b ) (S.E.)</td>
</tr>
<tr>
<td>Amenity Variables:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index of Land-Based, Natural Resources Amenities</td>
<td>0.4250***</td>
<td>0.2786***</td>
</tr>
<tr>
<td>Index of River-Based, Natural Resources Amenities</td>
<td>(0.0537)</td>
<td>(0.0570)</td>
</tr>
<tr>
<td>Index of Lake-Based, Natural Resources Amenities</td>
<td>-0.0376</td>
<td>-0.0358</td>
</tr>
<tr>
<td>Locality Adjacent Ocean Coast</td>
<td>(0.0212)</td>
<td>(0.0204)</td>
</tr>
<tr>
<td>Index of Warm Weather, Outdoor Recreation Amenities</td>
<td>-0.0054*</td>
<td>-0.0043</td>
</tr>
<tr>
<td>Index of Cold Weather, Outdoor Recreation Amenities</td>
<td>(0.0025)</td>
<td>(0.0024)</td>
</tr>
<tr>
<td>Index of Historical/Cultural Amenities</td>
<td>1.2422</td>
<td>1.3741</td>
</tr>
<tr>
<td>Control Variables:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Total Employment in Construction, 1990</td>
<td>...</td>
<td>-4.1080*</td>
</tr>
<tr>
<td>% Total Employment in Non-durable Manufacturing, 1990</td>
<td>...</td>
<td>(1.7055)</td>
</tr>
<tr>
<td>% Total Employment in Durable Manufacturing, 1990</td>
<td>...</td>
<td>-0.0613</td>
</tr>
<tr>
<td>% Total Employment in Transportation, 1990</td>
<td>...</td>
<td>(0.0549)</td>
</tr>
<tr>
<td>% Total Employment in Wholesale Trade, 1990</td>
<td>...</td>
<td>6.5047**</td>
</tr>
<tr>
<td>% Total Employment in Retail Trade, 1990</td>
<td>...</td>
<td>(2.1941)</td>
</tr>
<tr>
<td>% Total Employment in Eating and Drinking Places, 1990</td>
<td>...</td>
<td>-3.3138</td>
</tr>
<tr>
<td>% Total Employment in Repair Services, 1990</td>
<td>...</td>
<td>(0.2841)</td>
</tr>
<tr>
<td>% Total Employment in Entertainment and Recreation Services, 1990</td>
<td>...</td>
<td>0.3544*</td>
</tr>
<tr>
<td>% Total Employment in Health Care, 1990</td>
<td>...</td>
<td>(0.1800)</td>
</tr>
<tr>
<td>% Total Employment in Educational Services, 1990</td>
<td>...</td>
<td>0.4399</td>
</tr>
<tr>
<td>% Total Employment in Entertainment and Recreation Services, 1990</td>
<td>...</td>
<td>(0.2585)</td>
</tr>
<tr>
<td>% Total Employment in Health Care, 1990</td>
<td>...</td>
<td>-7.6335*</td>
</tr>
<tr>
<td>% Total Employment in Educational Services, 1990</td>
<td>...</td>
<td>(2.9670)</td>
</tr>
</tbody>
</table>

*** \( p < .001 \)  ** \( p < .01 \)  * \( p < .05 \)
Table 5 Continued

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>b (S.E.)</th>
<th>b (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Total Employment in Social Services, 1990</td>
<td>...</td>
<td>-0.1229</td>
</tr>
<tr>
<td>(% 34.36)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Total Employment in Producer Services, 1990</td>
<td>...</td>
<td>0.1974</td>
</tr>
<tr>
<td>(% 22.20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Total Employment in Government, 1990</td>
<td>...</td>
<td>-2.9217</td>
</tr>
<tr>
<td>(% 1.669)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Total Employment in Temporary Jobs, 1990</td>
<td>...</td>
<td>0.2274</td>
</tr>
<tr>
<td>(% 1.272)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Working Age Population With College Degree, 1990</td>
<td>...</td>
<td>-0.0451</td>
</tr>
<tr>
<td>(% 0.968)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Households Headed by Females, 1990</td>
<td>...</td>
<td>0.0455</td>
</tr>
<tr>
<td>(% 1.007)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Households Headed by Elderly Persons, 1990</td>
<td>...</td>
<td>-0.4149**</td>
</tr>
<tr>
<td>(% 0.0637)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Households Headed by Minorities, 1990</td>
<td>...</td>
<td>0.0094</td>
</tr>
<tr>
<td>(% 0.0560)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locality Adjacent to Metro. Area, 1993</td>
<td>...</td>
<td>-0.1015</td>
</tr>
<tr>
<td>(% 0.5558)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-9.1686***</td>
<td>-5.3746</td>
</tr>
<tr>
<td>F Statistic for Model</td>
<td>13.87***</td>
<td>9.01***</td>
</tr>
<tr>
<td>Adjusted r-square</td>
<td>.1623</td>
<td>.3174</td>
</tr>
</tbody>
</table>

*** p < .001  **p < .01  *p < .05

Appendix A: Methods Used to Construct Indices Measuring the Absolute and Relative Dimensions of Locality Well-Being.

The results of the factor analysis of the indicators measuring the absolute and relative dimensions of locality well-being are presented in Table A.1 for the 1980 data. The factor analysis revealed that two factors were found to have Eigenvalues greater than 1.0. The first factor explained approximately 50.8% of the variance in the set of indicators while the second factor explained 36.7%. Further, the indicators measuring the absolute dimension of locality well-being and the indicators measuring the relative dimension loaded highly on separate factors. This evidence suggests that each set of indicators is measuring a different dimension of locality well-being.

(Table A.1 about here)

The factor analysis on the two sets of indicators was also conducted using the 2000 data. The results are presented in Table A.2. Again, two factors were found to have Eigenvalues greater than 1.0. The first factor explained approximately 44.0% of the variance in the set of indicators while the second factor explained 37.8%. The indicators measuring the absolute dimension of locality well-being and the indicators measuring the relative dimension loaded highly again on separate factors. This provides further evidence that each set of indicators is measuring a different dimension of locality well-being. Moreover, it suggests that the pattern of inter-correlation among the indicators was relatively stable in comparing 1980 to 2000.

(Table A.2 about here)

Only variables that loaded highly on a factor were used to compute an index score for each dimension of locality well-being. Principal components factor analysis was conducted separately on the variables that loaded highly on each factor for 1980 and 2000, confirming the unidimensionality of the indices measuring each dimension of locality well-being for both years. The observed values on the relevant variables were then multiplied by their factor loadings. These products were then summed to form an index score for the variables comprising the the absolute dimension of locality well-being, and
those variables comprising the relative dimension of locality well-being for 1980 and 2000. The reliability of the indices as measures of each dimension of locality well-being for 1980 and 2000 was examined through the computation of Chronbach's alpha as an indicator of internal consistency. The results of this analysis are presented in Table A.3. Each index was found to have an acceptable degree of reliability with alpha coefficients greater than .80.

### TABLE A.1

**Results of Factor Analysis Using the Principal Components Method of Extraction for 1980 Indicators Measuring the Absolute and Relative Dimensions of Locality Well-Being for the 466 Nonmetropolitan Commuter Zones**

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Difference</th>
<th>Proportion</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.04286238</td>
<td>0.00000000</td>
<td>0.00000000</td>
<td>0.00000000</td>
</tr>
<tr>
<td>0.96610662</td>
<td>0.07675576</td>
<td>0.07675576</td>
<td>0.07675576</td>
</tr>
<tr>
<td>0.46236680</td>
<td>0.50000000</td>
<td>0.50000000</td>
<td>0.57351248</td>
</tr>
<tr>
<td>0.34340705</td>
<td>0.33333333</td>
<td>0.33333333</td>
<td>0.90685953</td>
</tr>
<tr>
<td>0.33929336</td>
<td>0.22222222</td>
<td>0.22222222</td>
<td>1.23915289</td>
</tr>
<tr>
<td>0.31456377</td>
<td>0.11111111</td>
<td>0.11111111</td>
<td>1.55371666</td>
</tr>
<tr>
<td>0.30058105</td>
<td>0.00000000</td>
<td>0.00000000</td>
<td>1.85430773</td>
</tr>
</tbody>
</table>

2 factors will be retained by the MINIMUM criterion.

### TABLE A.2

**Results of Factor Analysis Using the Principal Components Method of Extraction for 2000 Indicators Measuring the Absolute and Relative Dimensions of Locality Well-Being for the 466 Nonmetropolitan Commuter Zones**

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Difference</th>
<th>Proportion</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.09086512</td>
<td>0.43627487</td>
<td>0.43627487</td>
<td>0.43627487</td>
</tr>
<tr>
<td>2.54452355</td>
<td>1.77527460</td>
<td>1.77527460</td>
<td>2.22154947</td>
</tr>
<tr>
<td>0.97205105</td>
<td>0.97205105</td>
<td>0.97205105</td>
<td>3.19360052</td>
</tr>
<tr>
<td>0.29692036</td>
<td>0.29692036</td>
<td>0.29692036</td>
<td>3.48052088</td>
</tr>
<tr>
<td>0.08667772</td>
<td>0.08667772</td>
<td>0.08667772</td>
<td>3.56719860</td>
</tr>
<tr>
<td>0.03119799</td>
<td>0.03119799</td>
<td>0.03119799</td>
<td>3.59839658</td>
</tr>
<tr>
<td>0.00491820</td>
<td>0.00491820</td>
<td>0.00491820</td>
<td>3.60331478</td>
</tr>
</tbody>
</table>

2 factors will be retained by the MINIMUM criterion.

### Factor Pattern With Variables Rotation

<table>
<thead>
<tr>
<th>Indicators of Absolute Dimension:</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Total Population, 2000</td>
<td>0.04457</td>
<td>0.23602</td>
</tr>
<tr>
<td>b. Total Employment, 2000</td>
<td>0.01557</td>
<td>1.00000</td>
</tr>
<tr>
<td>c. Real Aggregate Income, 1980</td>
<td>0.12464</td>
<td>0.26772</td>
</tr>
<tr>
<td>d. Percentage of households with incomes that were less than or equal to 1/2 of the average household income, 1980</td>
<td>0.00046</td>
<td>0.95880</td>
</tr>
<tr>
<td>e. Percentage of households with incomes that were less than or equal to the average household income, 1980</td>
<td>-0.02002</td>
<td>0.98026</td>
</tr>
<tr>
<td>f. Percentage of households with incomes that were greater than or equal to twice the average household income, 1980</td>
<td>-0.01059</td>
<td>0.79306</td>
</tr>
<tr>
<td>g. Percentage of households with incomes below the poverty threshold, 2000</td>
<td>-0.07444</td>
<td>0.89608</td>
</tr>
</tbody>
</table>

1Expressed in 1999 dollars
TABLE A.3. Reliability Analysis for the Internal Consistency of Indicators in Measuring the Absolute and Relative Dimensions of Locality Well-Being.

<table>
<thead>
<tr>
<th></th>
<th>Year</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index for Absolute Dimension of Locality Well-Being</td>
<td>1980</td>
<td>.994</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>.996</td>
</tr>
<tr>
<td>Index for Relative Dimension of Locality Well-Being</td>
<td>1980</td>
<td>.906</td>
</tr>
<tr>
<td></td>
<td>2000</td>
<td>.838</td>
</tr>
</tbody>
</table>

Appendix B: Methods for Constructing Indices to Measure Types of Amenities

The distributions of the indicators of the various types of amenities were found to be highly skewed, reflecting an uneven spatial distribution of these amenities across the nonmetropolitan U.S. Given that factor analysis assumes that variables are normally distributed, the asymmetries in the distributions of these indicators were corrected through finding the appropriate power transformation (see Fox 1997:59-67). The structure and dimensionality of all the amenity indicators was then tested through principal components factor analysis using varimax rotation. The results of this analysis are presented in Table B.1.

This analysis confirmed six dimensions in the structure of amenities in the nonmetropolitan U.S. Six factors were found to have Eigenvalues greater than 1.0. In total, these six factors explained 76.6% of the variance in the set of amenity indicators. Only the indicators measuring cold weather, outdoor recreational amenities loaded highly on factor one (see Table B.1). Only the indicators measuring warm weather, outdoor recreational amenities loaded highly on factor two. Only the indicators measuring river-based, natural resource amenities loaded highly on factor three. Only the indicators measuring lake-based, natural resource amenities loaded highly on factor four. Only the indicators measuring land-based, natural resource amenities loaded highly on factor five. Finally, only the indicators measuring historical/cultural amenities loaded highly on factor six.

Only variables that loaded highly on a factor were used to compute an index score for each dimension in the structure of nonmetropolitan amenities. Principal components factor analysis was conducted separately on the variables that loaded highly on each factor, confirming the unidimensionality of the indices measuring each amenity dimension. Given the disparate nature of the measurement scales in measuring the different types of amenities, the transformed
Table B.1. Results of Principal Components Factor Analysis for Indicators of Nonmetropolitan Amenities (N=466)

<table>
<thead>
<tr>
<th>Loadings</th>
<th>Index of Land-Based Natural Resources Amenities</th>
<th>Index of Outdoor Recreation Amenities</th>
<th>Index of Warm Weather, Outdoor Recreational Amenities</th>
<th>Index of Cold Weather, Outdoor Recreational Amenities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.07212</td>
<td>0.31131</td>
<td>0.20510</td>
<td>0.27279</td>
<td>0.11560</td>
</tr>
<tr>
<td>1.00041</td>
<td>0.31131</td>
<td>0.20510</td>
<td>0.27279</td>
<td>0.11560</td>
</tr>
<tr>
<td>1.00004</td>
<td>0.31131</td>
<td>0.20510</td>
<td>0.27279</td>
<td>0.11560</td>
</tr>
<tr>
<td>0.99995</td>
<td>0.31131</td>
<td>0.20510</td>
<td>0.27279</td>
<td>0.11560</td>
</tr>
<tr>
<td>0.99987</td>
<td>0.31131</td>
<td>0.20510</td>
<td>0.27279</td>
<td>0.11560</td>
</tr>
</tbody>
</table>

Reliability Analysis of Alpha Coefficient

The reliability coefficient for each indicator was computed using Cronbach’s alpha, a measure of internal consistency. The results are presented below. Each indicator was found to have an acceptable degree of reliability with the exception of a few indicators. This may be due to the redundancy of some indicators, as indicated by the factor loadings. All loading values are standardized to have a mean of zero and a standard deviation of one. The standardized values were calculated by means of the factor loadings. The factor loadings are then summed to form an index score for each variable.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Alpha Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator 1</td>
<td>0.8957</td>
</tr>
<tr>
<td>Indicator 2</td>
<td>0.9234</td>
</tr>
<tr>
<td>Indicator 3</td>
<td>0.9345</td>
</tr>
<tr>
<td>Indicator 4</td>
<td>0.9098</td>
</tr>
<tr>
<td>Indicator 5</td>
<td>0.9123</td>
</tr>
</tbody>
</table>

The results indicate that the reliability coefficients for the indicators range from 0.8957 to 0.9345, with an average of 0.9161. The coefficients are calculated by taking the square root of the average of the squared loadings of each indicator. This value represents the proportion of variance in the indicators that is explained by the factor, and it is a measure of the inter-item reliability of the scale. The coefficients greater than 0.70 with the exception of the index measuring cultural/historical amenities.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Factor2</th>
<th>Factor3</th>
<th>Factor4</th>
<th>Factor5</th>
<th>Factor6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Area of Mountains (ln/ha)</td>
<td>0.56734</td>
<td>0.07207</td>
<td>0.12049</td>
<td>-0.03730</td>
<td>0.78514</td>
</tr>
<tr>
<td>2. Area of Forest &amp; Grassland Managed by the USDA Forest Service (ln/ha)</td>
<td>0.20405</td>
<td>0.01127</td>
<td>0.26281</td>
<td>0.08200</td>
<td>0.75738</td>
</tr>
<tr>
<td>3. Area of Federal Land Managed by the National Park Service (ln/ha)</td>
<td>0.95656</td>
<td>0.13811</td>
<td>0.15903</td>
<td>0.06990</td>
<td>0.69146</td>
</tr>
<tr>
<td>4. Total Acres Under the National Wilderness Preservation System (ln/ha)</td>
<td>0.21803</td>
<td>0.06006</td>
<td>0.24507</td>
<td>0.14305</td>
<td>0.74512</td>
</tr>
<tr>
<td>5. River Miles (MP)</td>
<td>0.24734</td>
<td>0.21059</td>
<td>0.26563</td>
<td>0.12359</td>
<td>0.25470</td>
</tr>
<tr>
<td>6. River Miles With Recreational Value (ln/ha)</td>
<td>0.20033</td>
<td>0.26423</td>
<td>0.49952</td>
<td>0.07480</td>
<td>0.20338</td>
</tr>
<tr>
<td>7. River Miles With Scenic Value (ln/ha)</td>
<td>0.12023</td>
<td>0.13581</td>
<td>0.07779</td>
<td>0.12936</td>
<td>0.26952</td>
</tr>
<tr>
<td>8. River Miles With Wildlife Value (ln/ha)</td>
<td>-0.07718</td>
<td>0.15466</td>
<td>0.02520</td>
<td>0.02196</td>
<td>0.15956</td>
</tr>
<tr>
<td>9. Acres of Water Bodies in Lakes &gt;= 40 Acres in Size (ln/ha)</td>
<td>0.16083</td>
<td>0.10224</td>
<td>0.07931</td>
<td>0.06407</td>
<td>0.06230</td>
</tr>
<tr>
<td>10. Acres Designated as Primary or Secondary Use in Water-Based Recreation (ln/ha)</td>
<td>0.15027</td>
<td>0.20773</td>
<td>0.15092</td>
<td>0.02820</td>
<td>0.16657</td>
</tr>
<tr>
<td>11. Number of Parks &amp; Recreation Departments (ln/ha)</td>
<td>0.12865</td>
<td>0.75106</td>
<td>0.10427</td>
<td>0.06090</td>
<td>0.08237</td>
</tr>
<tr>
<td>12. Number of Local, County, or Regional Parks (ln/ha)</td>
<td>0.05703</td>
<td>0.70502</td>
<td>0.17814</td>
<td>0.03838</td>
<td>0.07296</td>
</tr>
<tr>
<td>13. Number of Amusement Places (ln/ha)</td>
<td>0.05462</td>
<td>0.76430</td>
<td>0.11315</td>
<td>0.05554</td>
<td>0.08064</td>
</tr>
<tr>
<td>14. Number of Public &amp; Private Golf Courses (ln/ha)</td>
<td>0.20523</td>
<td>0.70892</td>
<td>0.09841</td>
<td>0.18164</td>
<td>0.00172</td>
</tr>
<tr>
<td>15. Number of Riding Academies &amp; Stables (ln/ha)</td>
<td>0.39760</td>
<td>0.84258</td>
<td>0.17561</td>
<td>0.05218</td>
<td>0.33329</td>
</tr>
<tr>
<td>16. Number of Skiing Centers/Resorts (ln/ha)</td>
<td>0.19404</td>
<td>0.69372</td>
<td>0.21415</td>
<td>0.21417</td>
<td>0.29573</td>
</tr>
<tr>
<td>17. Number of Cross-Country Skiing Sites (ln/ha)</td>
<td>0.08565</td>
<td>0.18137</td>
<td>0.12659</td>
<td>0.09371</td>
<td>0.24072</td>
</tr>
<tr>
<td>18. Number of Downhill Skiing Areas (ln/ha)</td>
<td>0.28316</td>
<td>0.11844</td>
<td>0.36748</td>
<td>0.15743</td>
<td>0.15958</td>
</tr>
<tr>
<td>19. Number of Historic/Cultural Tourist Attractions (ln/ha)</td>
<td>0.87612</td>
<td>0.21021</td>
<td>0.90110</td>
<td>0.08044</td>
<td>0.20651</td>
</tr>
<tr>
<td>20. Number of Amusement/Entertainment Tourist Attractions (ln/ha)</td>
<td>0.52650</td>
<td>0.13684</td>
<td>0.09713</td>
<td>0.03504</td>
<td>0.08011</td>
</tr>
<tr>
<td>21. Number of Natural Resource Tourist Attractions (ln/ha)</td>
<td>0.05129</td>
<td>0.12502</td>
<td>0.02638</td>
<td>0.06129</td>
<td>0.07598</td>
</tr>
<tr>
<td>22. Number of Museums/Art Galleries (ln/ha)</td>
<td>0.05274</td>
<td>0.14557</td>
<td>0.07079</td>
<td>0.09314</td>
<td>0.12644</td>
</tr>
</tbody>
</table>
The Varied Impact Of Greenways On Residential Property Values In A Metropolitan, Micropolitan, And Rural Area: The Case Of The Catawba Regional Trail

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Abstract: This paper presents hedonic analyses designed to estimate the real estate premium from improved access to a regional greenway system in three distinct counties. The hypothesis is tested that unobservable factors relating to the overall economic structure of each county influence how and to what extent access to open space is effectively capitalized into residential sales prices.
Introduction

Policy makers and planners have begun to pay increasing attention to the issue of environmental amenities such as greenways and their impact on the economic vitality of a given region. Because residential property values translate directly into the tax revenue of a particular region, any plan or development that can be directly capitalized into those tax values can be of great benefit. In addition, there can be significant secondary impacts to greenway development: it could potentially increase tourism to the region, bringing in local and regional visitors to enjoy its recreational amenities. A greenway can contribute to a larger appeal of an urban area, attracting business and commerce, new residents and the like. Lastly, greenways can have significant environmental benefits by improving air quality and reducing run-off and erosion proximate to the trail.

The immediate determinants of residential land values include fall in three general categories: 1) structural characteristics of the property, such as number of bedrooms, square footage, and age of the structure; 2) locational attributes such as commuting distance, proximity to undesirable land uses, proximity to environmental amenities such as open space, and topography of the land; and 3) neighborhood effects such as the tax jurisdiction or school district in which a property falls. The influence of the third set of variables is not static; the market value of a property is influenced and constrained by broader economic conditions at the regional level. However, a model of residential sales by parcel that includes feedback from higher levels of the system would be exceedingly difficult to identify or perhaps even analytically intractable. Instead, we make use of so-called “natural experiments,” (Diamond 2001) where there are sufficient discontinuities in crucial factors, such as policy, across space and/or time. In this manner, we account for the broader impact of policy (i.e., the development of open space) and the underlying economic structure of each localized market, yet consider more localized variation in the underlying land-use incentives.

The purpose of this paper is threefold: 1) we consider qualitative issues about the economic structure of each of these counties that influence and shape land market activity; 2) we estimate the effect of the new Catawba Regional Trail (CRT) on property values in three counties; and 3) we test explicitly whether open space has different impacts in the each county. Particularly because interregional cooperation is paramount to the ultimate success of this trail system, it is important to understand how the effects of the trail will vary over space.

The CRT will eventually run through six counties in North and South Carolina in the Central Piedmont region. This study considers two counties in North Carolina, Mecklenburg and Gaston, and one in South Carolina, York. Mecklenburg County contains Charlotte, the largest city in the Carolinas, with a vibrant service-oriented economy centered around the banking industry. Gaston County is just to the west of Mecklenburg, so it contains some limited suburban spillover from Charlotte, and also possesses the greatest natural amenities in the immediate region. The trail runs around its largest city, Gastonia. In York County, South Carolina, the trail circles and extends out from Rock Hill. Construction and management of this trail has been a very interesting process, as it has involved extensive regional cooperation among counties and between
states, yet all parties involved have expressed a great desire for the anticipated pecuniary benefits to be realized from the trial.

While there is a growing body of literature that suggests that the value of open space will be, ceteris paribus, capitalized into residential sales values (Acharya and Bennett 2001, Geoghegan et al. 2003, Irwin 2002), some studies have not found clear empirical support for such capitalization (Smith et al. 2002, Nickerson and Lynch 2001). Because the determinants of residential sales prices are so complex, it is important to control for as many mediating factors as possible in estimating the impact of environmental amenities.

The study area represents a unique opportunity to monitor the long-term benefits of permanent, public open space in starkly differing settings: a highly urban (Mecklenburg County), rural-residential (Gaston County) and a micropolitan (York County) setting, thus providing new insights about the factors that shape and mediate the ultimate effect of the trail. The next section considers relevant literature on open space and property values. Then, we discuss overall characteristics of each of the counties. Hedonic models are estimated for each county, and pooled for all counties to test for structural stability in the estimated open space parameter.

Valuing Open Space

Several studies have employed the hedonic approach to specifically investigate the impact of open space on property values (e.g. Bockstael and Bell, 1998; Garrod and Willis, 1992; Geoghegan, Wainger, and Bockstael, 1997). These papers all estimate the effect, in terms of a real estate premium, of proximate natural areas on housing prices. The results suggest that, all else equal, proximity to open space adds to the sales price of a house (Irwin 2002). Residential sales price is considered to be the best available measure of the true "market value" of a property. The general approach has been to estimate the influence of open space, but little attention (with a few notable exceptions) has been given to addressing explicitly why the effect of open space may differ in different regions.

There are several issues discussed within the literature regarding the impacts of open space on residential land values. Increasingly, studies make use of new GIS technology and associated spatial modeling techniques to investigate the spatial structural of these spillover effects. It is of great usefulness to quantify over what range open space can have an effect on property values. A second issue relates to the type of open space. Empirically, differential impacts of public vs. private open space have been noted. Further, the credibility of long-term preservation is also important. There is also a time lag in the process of this capitalization; the positive spillover of an environmental externality into real estate values does not happen immediately, but may take up to several years for a new equilibrium (Riddel 2001). Lastly, it has also been suggested that characteristics of the local land market matter; i.e., two regions with a similar greenway may experience different results in terms of how much of the environmental amenities associated with that greenway can be effectively capitalized into land values. The reasons for these differences can include the relative density of each urban area within localized developments (i.e., high vs. low density residential areas [Irwin 2002]), or the location of the greenway within the city (Wu and Plantinga 2003).
There are myriad types of open space that can constitute an environmental amenity and have a spillover effect on land values. However, there is not necessarily uniformity in these effects. As mentioned above, there is some discussion in the literature about the difference between private and public open space. Public open space may have a positive benefit, but there can also be disamenities or negative effects from public land. For example, public open space may be perceived as “noisy” by residents immediately proximate to the greenway if the greenway is used by many people outside the immediate neighborhoods through which it runs (Geoghegan et al. 2003, Irwin 2002).

Also, a public greenway could potentially increase crime in the immediate area by giving access in and out of neighborhood. Some studies report differing results for private vs. public open space (Irwin 2002), or note that public open space behaves significantly different from private open space (Smith et al. 2003), but it is difficult to identify and control fully for the exact characteristics of additional disamenities associated with public space that may have influenced these estimates, and this issue is probably best studied on a case-by-case basis within one land market.

Another issue that has been discussed in the literature is the perceived permanence of open space. Certain programs like conservation easements or farmland preservation programs have observed to have mixed success in terms of capitalization into housing values (Nickerson and Lynch 2001). One clear reason for this mixed result is simply that in the face of extreme development pressure, residents may doubt the long-term credibility of these preservation programs. Therefore, preserved open space in areas that are seen as “permanently undevelopable” is much more likely to have a strong effect on market land values. For maximum capitalization of environmental amenities into land values, open space must be seen as permanent (Irwin 2002).

The benefits of greenways have a distinct spatial structure, which is often underestimated due to the difficulty in quantifying these effects. There is an overall benefit to the general public living within a region in that more recreational/leisure opportunities will be available, improving the overall quality of life. In addition, the landowners who live proximate to the greenway will receive direct benefits (Geoghegan et al. 2003). Other aspects relating to the location of greenways also matter; beyond their absolute location in space, their location relative to other land uses has proven to be important. Smith et al. (2002) did not find any significant benefit associated with the greenway in the Raleigh-Durham area, and indicated that proximity to the interstate may offset any positive effect the greenway might have. In a pure simulation of land rents via a Alonso bid-rent model, Wu and Plantinga (2003) found that the closer the open space is to a CBD, the higher the overall benefits on land values.

One significant question in the literature has been the time necessary for the real estate market to incorporate the full benefit of open space into housing prices. Therefore, estimated price effects of the amenity may change over time, and a researcher may want to wait a significant amount of time before attempting to measure this benefit. However, land markets are constantly changing; the urban region expands due to new development, labor markets change, and while overall land values rise, local depreciation also occurs. These myriad effects become difficult to identify separately over time. A study by Riddel (2001) postulated that four years was a sufficiently long period of time to expect
to see the full impact of capitalization of environmental amenities into residential property values.

Thus, the literature provides useful examples of how best to measure the impact of the greenway, but given the complexities of land markets and the sheer number of location-specific factors that influence residential sales prices, these studies by large can only point to qualitative conclusions. The hedonic approach is by nature data-driven, and therefore the ability of a particular study to inform researchers and policy makers on the ultimate value of greenways depends strongly on the patterns, if any, within the particular case study.

The Study Area

The study consists of ribbons of real estate that meander through three counties -- Gaston and Mecklenburg Counties, North Carolina and York County, South Carolina -- of the seven county Charlotte MSA (Figure 1). Totaling 65 miles in length, the planned Catawba Regional Trail is a testament to interjurisdictional cooperation as the trail winds through three counties, at least four municipalities and two states. Along its route, the trail passes through both neighborhoods of high and low income, homogenous and diverse populations in both built-up and undeveloped areas. Developing the trail is seen not only as a way to provide an amenity for those who live nearby, but also as a way to preserve land and open space in an otherwise rapidly growing area that epitomizes the New South of the sunbelt.

Over the past thirty years, the Charlotte MSA has experienced rapid population growth coupled with structural economic change. While textile production and distribution activities have historically defined its economic base, the region has undergone significant structural change since the mid-1980s. However, shifts in the composition of the region’s economy have been uneven both temporally and spatially. For example, Mecklenburg County, the region’s core, has been transformed from a light manufacturing/distribution economy to the second largest financial center in the US, while the local economy of Gaston County, once the center of American textile production, struggles in the face of plant closings. Although textile employment in Gaston County peaked in 1974, it still contains a sizable textile industry (employment LQ=23.46 in 2000). Its attempts to diversify, especially into transportation equipment, have been met by a spate of recent plant closings. The fortunes of York County fall somewhere in between as it too has lost much of its prominent textile employment, though workers increasingly commute to employment in the financial- and service-sector rich Mecklenburg County immediately to its north.

These counties, to varying degrees, have shared in the region’s robust growth over recent decades. The region has grown rapidly over the past thirty years, nearly doubling in population since 1970, as new industries and migrants relocate to the area. Mild climate, low rates of unionization, inexpensive power, and relatively low corporate income rates are characteristics of many sunbelt regions that grew rapidly in the 1990s (Glasser and Shapiro, 2003) which helps explain the region’s success in attracting new firms and those relocating from other parts of the country and other regions of the world. Indeed, by the late 1990s North Carolina ranked third nationally (behind Hawaii and South Carolina) in the proportion of its labor force working in foreign-owned firms;
within the state, the Charlotte metro area contained the disproportionate share of them (Campbell and Stuart, 1998).

Though some jurisdictions experienced more growth than others, the dynamics of housing and land markets can be largely traced to population change driven by the region's robust employment growth. While MSA population as whole grew by 29 percent during the 1990s, growth was somewhat uneven among the study area counties as shown in Table 1. While still very much a monocentric region, much of recent population growth has occurred in the region's core of Mecklenburg County. Approximately two-thirds of the county's 36 percent growth since 1990 was due to net in-migration. At the other extreme, the population of neighboring Gaston County increased only 8 percent, the lowest growth rate among all counties in the MSA. In fact, Gaston County is a somewhat curious case in that all other counties surrounding the core grew at double-digit rates as job holders in Mecklenburg increasingly made their residential location choices in neighboring counties that provide lower property tax rates while providing reasonable commutes to, and near, the CBD. This was especially true for neighboring counties with Interstate highways or other major thoroughfares.

Although linked by an Interstate and neighboring a rapidly growing employment center, Gaston County population grew by less than 1 percent per year during the 1990s.

Patterns of population change and underlying structural change in the region's economy are reflected in local income (Table 2). For example, growth of producer services and the relatively high wage financial sectors have raised per capita and median household income in Mecklenburg well above the national average and helped lower local poverty rates. Similarly, though to a lesser extent, incomes in York County now approximate the national average. Lower-than-average income levels in Gaston County are related to its lackluster population growth as few employment opportunities and a generally depressed local economy discourage net in-migration. It should also be noted that there is substantial variation, both economically and demographically, within each of these jurisdictions. High rates of poverty and dependence on transfer payments characterize many census tracts in Mecklenburg (especially to the North and West of the CBD) while the local captains of industry occupy pockets of affluence in both Gaston and York Counties.

To the extent that land markets and housing values are related to income and marginal changes in new housing respond to both population and upper levels of income, it comes as no surprise that median house values are higher in higher income areas (Mecklenburg) and lower in more depressed areas (Gaston). Table 3 presents median home values for the counties of the study area while Table 4 reveals the distribution of home values among various price ranges. In Table 3, it is clear that median values of owner-occupied homes closely parallel per capita income levels. For example, York per capita income is 95 percent of the national average, and median home value is 94 percent of the average ($111,800). Similar relationships exists in the other two counties. If new construction tends to operate at the higher ends of the housing value spectrum, relying on a filtering process to supply housing at the lower ends, distribution of house values it is also worth noting (Table 4). In Mecklenburg, for example, where incomes are generally higher, more than 24 percent of the housing stock is valued at $200,000 or more; in York and Gaston, comparable values are 15 and 6 percent, respectively. Consequently, nearly
two-thirds of the Gaston County housing stock, and almost half of York’s, is valued at less than $100,000.

This broad profile of the housing market has implications for our expectations of the impact of open space on land values generally, and the Catawba Regional Trail greenway specifically. To the extent that households value access to open space and recreational opportunities, we should expect that a land value premium should be associated with proximity to the Catawba Regional Trail. Further, to the extent that housing development is disproportionately concentrated in at the higher ends of the housing spectrum, and higher income households can more readily afford the premium, we should also expect that amenity capitalization, even if it is a small percentage of total value, will have larger aggregate impacts in faster growing, wealthier jurisdictions. The extent to which these observations bear out in the current study depends, of course on the extent to which county aggregates reflect the underlying demographics and market characteristics of the neighborhoods though which the trail passes.

Methodology

The hedonic pricing function posits price as a function of the quantities of a good’s attributes (Can 1990). Through the interactions of myriad buyers and sellers in the market, sales prices should reflect the point of equilibrium. We specify the hedonic residential pricing model as:

$$P_i = f(L_i, H_i; \beta, \delta)$$  \hspace{1cm} (1)

where $P_i$ is the residential sales price of the $i^{th}$ property, $H_i$ is a vector of structural characteristics associated with the house, $L_i$ is a vector of locational variables, and $\beta$ and $\delta$ are the respective parameter vectors to be estimated. The functional form of the above relationship may not be linear; thus, careful consideration must be given to specification testing (Can 1992). A log-log transformation conforms well to economic theory, in that estimated $\beta$ coefficients then represent the elasticity of sales price with regard to that factor. The impact of the greenway on parcel value is subject to distance decay; that is, parcels closer to the greenway will, everything else equal, have a higher sales value. Separate estimates are provided for each subregion, and tests are conducted to determine whether these values are significantly different.

Parcel data were obtained for each county from the tax assessor’s database and associated GIS coverage. To reduce overall spatial autocorrelation, a stratified, spatial sample was drawn so that roughly 10% of all available single-family residential parcels that were sold between 2000-2003 were included in the estimation. Structural characteristics for the parcel (bedrooms, bathrooms, sq footage) were not available for York County at the time of this study. Slope and elevation were derived for each parcel, but because of extreme multicollinearity issues, they were dropped from the analysis. Simply, one of the largest determinants of land values in the region is the percent African-American population, measured at the block group level; generally, the higher the concentration of African-Americans, the lower the sales price. Income at the block group level was also included. For Mecklenburg home school area has a huge influence on property values, in that houses in a school area perceived to be superior command a large premium, whereas houses in a perceived inferior school area are much cheaper, all

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1 As indicated in the discussion, a next step would be to include three variables as instruments to proxy endogenous heterogeneous land quality.
2 We did have a crime variable for Mecklenburg County, which may be a better representation than what % African-American captures, but this variable was not available for the other two counties.
things equal. Because Gaston is the most rural county, distance to Gastonia, the county seat, was included. For Mecklenburg, there are multiple modes of employment, and these accessibility effects were dwarfed by the school area effect. For all counties, Euclidean distance to the Catawba Regional Trail was calculated. The trail system is still under construction in York and Gaston counties, though portions of the Gaston county system have been completed. Therefore, the accessibility to all types of public open space was used for comparisons across counties, in case the time needed for full capitalization of the greenway's amenity benefit was insufficient. A log transformation was used for all continuous variables.

All models were estimated in GeoDa 0.95 (Anselin et al. 2002) and OLS residuals were tested extensively for spatial effects. Both models required a spatial error correction, indicating there was significant spatial autocorrelation in the unexplained variation in sales price. For both Mecklenburg and Gaston counties, a spatial error correction was warranted, so the final functional form was as follows:

\[ \log(P) = \beta \log(H) + \delta \log(L) + sW + \varepsilon, \]

(2)

where \( sW + \varepsilon \) represents a spatially autoregressive process in the unmodeled or unexplained variation in the model. The interpretation of this process is that unmeasured effects that influence the equilibrium sales price of a parcel are correlated in space, which is likely in hedonic analyses (Anselin 2002), and without explicitly correcting for the underlying spatial process, standard errors of the coefficients are biased and hypothesis tests are flawed.

**Results**

The results for the analyses in Mecklenburg and Gaston counties are provided in Table 5. Overall, both models fit well, though the specification for Mecklenburg County accounted for more variation in sales price. All variables had the expected sign, except age of the structure, which indicated that older houses commanded a higher sales price. This finding may be picking up some of the gentrification patterns, in that current "trendy" neighborhoods tend to be the older neighborhoods, or multicollinearity affected the identification of this variable's true effect.

In both counties, the assessed value was the strongest determinant of sales prices.

The second most important factor in magnitude for Mecklenburg County was percent African-American, which had a significantly negative impact on sales prices. This coefficient was also negative, but insignificant in Gaston. In Gaston, the number of bedrooms was the second highest coefficient. As to be expected, the dummies for home school area in Mecklenburg County were significant in all but one case, with East and South Charlotte, respectively, having the least attractive and most attractive schools. Proximity to greenways had a significantly positive impact (i.e., as distance to the greenway increases, sales price decreases) in both counties, though the magnitude in Gaston County was more than three times that in Charlotte.

To test whether the impact of open space was significantly different in the different counties, pooled models were estimated, with dummy variables to provide signals whether structural differences existed across regions. Specifically, the following model was tested:

\[ P = a + bX + cX + dX + \varepsilon, \]

(3)
where $P$ is the sales price, $a$ is the intercept across all observations, $b$ represents a coefficient on the regional dummy variable $r$, $c$ is the coefficient on the independent variable $x$, and $d_{i}x$ is the interaction coefficient for variable $x$ in region $r$. So, for example, to test whether there are overall differences across regions, we test the null hypothesis that the coefficient on the region-specific dummy variable ($b$) is equal to 0.

To test whether the impact of an explanatory variable (e.g., access to open space) has a different slope in the different regions, we test the null hypothesis that the coefficient on the region-open space interaction term ($d$) is equal to zero. First, Mecklenburg County and Gaston County data were pooled, and a dummy variable to represent Gaston County and the Gaston-distance to park interaction was included. Then, all available data for all three counties was pooled. Unfortunately, the lack of parcel characteristics for York County meant that only assessed value and distance to open space was available for each parcel, but income at the block group level was included, as an attempt to capture neighborhood effects (i.e., neighborhoods with higher income levels tend to have nicer houses).

Tables 6 and 7 present the results of these analyses. For Mecklenburg vs. Gaston, the regional dummy on Gaston was not significant, indicating there is no measurable average structural difference between Gaston and Mecklenburg, as defined by these data. However, the Gaston/park interaction coefficient was significant, indicating that the impact of access to open space was stronger and more positive. In other words, across both counties, a 1% increase in proximity to a park increases the sales price by 0.0094%, but a parcel in Gaston receives an additional premium of 0.08%, which is roughly 8.5 times greater an effect. When all three counties were pooled, with fewer explanatory variables, there were no longer any significant differences across Gaston and Mecklenburg, nor was there a discernible average difference between York and the other two, except in the York/park interaction term. Thus, across all three counties a 1% increase in proximity to a park increases the sales price by 0.0184%, but York commands an additional premium of 0.05%.

**Discussion**

Generally, the hedonic results followed theoretical and a priori expectations. Comparing Gaston to Mecklenburg, Gaston commanded a much higher premium for proximate open space. Comparing Gaston, Mecklenburg and York, York commanded a significantly higher premium than the other two counties. Thus, this analysis indicates that though open space provides a significant benefit across the region, it is qualitatively strongest in the micropolitan region, and lowest in the metropolitan region, with the rural region falling in between.

**The Endogeneity of Land Development**

Irwin (2002) has discussed the need to control for endogenous factors that influence land markets in an hedonic analysis, specifically, variations in land quality that shape development. For example, development may occur in a particular location due to socioeconomic pressures (e.g., proximity to a new employment center), but the exact location of that development may be influenced by local topographical variation such as slope and soil quality. Development costs that will figure in the price of the house will also be influenced by these geophysical characteristics. Mecklenburg County provides perhaps the clearest example of such effects, because the location of the creeks that flow
through the city have influenced every aspect of urban design, from transportation and utility infrastructure, to land use zoning, etc. The greenway system also follows these creeks, but due to industrial land uses, many portions of the greenway go through more modest neighborhoods than average. In this analysis, there was no way to account for spatial dependence and control for endogeneity effects, but this test is planned for future research.

The Endogeneity of Open Space Amenities

As the paper by Wu and Plantinga (2003) indicates, there may be an interaction between economic and cultural amenities and environmental amenities. In local land markets that have a critical mass of both, the greatest capitalization of amenity benefits into sales prices are to be expected.

In Mecklenburg County, there are several factors that influence whether and to what extent open space amenities are effectively capitalized into residential sales prices. On the one hand, it is an urban setting, and as land conversion continues at a fast pace, open space is becoming relatively scarcer. As the region grows, and new residents, particularly newly wealthy residents move to the region, we can expect to see sharply rising residential values, particularly in those neighborhoods seen to be desirable to begin with. This effect is likely, ceteris paribus, to increase the premium from access to the greenway.

On the other hand, this urban setting also contains poorer neighbors, with high rates of poverty, vacant housing, and crime. In such settings, the impact of increased public open space may actually pull down property values. One concern about a greenway is that it gives potential criminals much greater access to commit burglary, by providing a transportation corridor and easy access through residential neighborhoods.

This preliminary analysis indicates that the latter effect may be outweighing the former at this time. For future research, it may be useful to divide the parcels in Mecklenburg County into geographic subsets to investigate structural differences within the county itself.

The pooled analysis across the three counties indicates that the variation in residential sales prices attributable to access to open space was not significantly different in Gaston County vs. the other two, but it was significantly stronger in York County. This finding confirmed our initial expectations. There is a small, but growing literature on "micropolitan" regions; York County is defined as a micropolitan region according to the Census. Micropolitan areas have been said to represent the best tradeoff between urban and rural living, yielding the best elements of a small-town lifestyle (e.g., less traffic and crime), but with relative proximity to larger cities, the residents can take advantage of the cultural and economic benefits of the larger region (Vias et al. 2002).

Conclusion

In the light of increasing residential development, the loss of open space, and other environmental concerns, provision of environmental amenities such as greenways benefit residents directly, and local governments indirectly through the tax base. This analysis shows that all other factors equal, access to the Catawba Regional Trail as well as other types of public open space in region do raise the sales value of proximate parcels. Precisely because interregional cooperation is crucial to the ultimate success of this trail system, it is important to understand how the effects of the trail will vary over
space. It may very well be the case that some counties will benefit much more than others in terms of increased property tax revenues, and the local revenues may not necessarily be proportional to the investments each locality must make in construction and maintenance of the trail.

It is interesting to compare the different qualitative results across the different counties. As we expected, the impact of open space was highest in York County, which is not urban enough to have the degree of crime and poverty that is seen in Mecklenburg County, but also has substantial employment and population growth, unlike Gaston. Also, employment and population growth clearly are not enough to obtain the maximum benefit from open space. Mecklenburg County is much better off than either Gaston or York, but there is much greater variation in that County. Though Mecklenburg County has been prospering relative to Gaston County, the impact of open space was higher in Gaston. This finding may relate to an endogeneity; timing of development may have been different in Gaston. If the nicest newer houses were those built near to a greenway in Gaston as compared to the older, gentrified neighborhoods in Charlotte, the hedonic model will not capture this influence, and it warrants further investigation.

Lastly, hedonic analyses do not always adequately capture the employment-land market link. It is clear that many residents of Gaston and York Counties work in Charlotte-Mecklenburg, but live across the border because of easy interstate access and lower taxes. Therefore, there are significant spillovers from Mecklenburg to the surrounding counties that likely have an impact on real estate markets that are not adequately captured in this analysis.

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References


Table 1. Study Area Population 1990-2000

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>2000</th>
<th>Number</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Gaston</td>
<td>175,093</td>
<td>190,365</td>
<td>15,272</td>
<td>8.7</td>
</tr>
<tr>
<td>Mecklenburg</td>
<td>511,433</td>
<td>695,454</td>
<td>184,021</td>
<td>36.0</td>
</tr>
<tr>
<td>York</td>
<td>131,497</td>
<td>164,614</td>
<td>33,117</td>
<td>25.2</td>
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Source: U.S. Census Bureau, Census 2000

Table 2. Income Statistics, 1999

<table>
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<tr>
<th></th>
<th>Per Capita</th>
<th>Median Household</th>
<th>Household Poverty</th>
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<tr>
<td></td>
<td>Income ($)</td>
<td>% of US Income ($)</td>
<td>% of US Poverty Rate (%)</td>
</tr>
</tbody>
</table>

|        | Gaston     | 19,225 | 89.1 | 39,482 | 94.0 | 10.9 |
|        | Mecklenburg | 27,352 | 126.7 | 50,579 | 120.4 | 8.2 |
|        | York       | 20,536 | 95.1 | 44,539 | 106.1 | 10.1 |
|        | US         | 21,587 | 111.8 | 41,994 | 118.0 | 11.8 |

Source: U.S. Census Bureau, Census 2000
Table 3: Median Owner-Occupied Home Value, 2000 ($)

<table>
<thead>
<tr>
<th></th>
<th>Median Value($)</th>
<th>As % of US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaston</td>
<td>86,600</td>
<td>77.5</td>
</tr>
<tr>
<td>Mecklenburg</td>
<td>139,000</td>
<td>124.3</td>
</tr>
<tr>
<td>York</td>
<td>104,900</td>
<td>93.8</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Census 2000; Note: Median US value is $111,800

Table 4: Distribution of Owner-Occupied Home Values, 2000 (%)

<table>
<thead>
<tr>
<th>Value ($)</th>
<th>Gaston</th>
<th>Mecklenburg</th>
<th>York</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50,000</td>
<td>17.3</td>
<td>3.8</td>
<td>15.2</td>
<td>14.9</td>
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<tr>
<td>50,000-99,999</td>
<td>45.9</td>
<td>22.9</td>
<td>32.3</td>
<td>29.6</td>
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<td>100,000-199,999</td>
<td>30.3</td>
<td>47.1</td>
<td>37.8</td>
<td>35.2</td>
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<tr>
<td>200,000-299,999</td>
<td>4.6</td>
<td>14.2</td>
<td>9.8</td>
<td>11.2</td>
</tr>
<tr>
<td>300,000+</td>
<td>2.0</td>
<td>12.0</td>
<td>5.0</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Census 2000

Table 5: Hedonic Results, Mecklenburg and Gaston Counties

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mecklenburg Coefficient</th>
<th>Std. Error</th>
<th>Prob</th>
<th>Gaston Coefficient</th>
<th>Std. Error</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>6.1023</td>
<td>0.1280</td>
<td>0.00</td>
<td>5.0716</td>
<td>0.9274</td>
<td>0.00</td>
</tr>
<tr>
<td>Number of Bedrooms</td>
<td>0.01629</td>
<td>0.00170</td>
<td>0.00</td>
<td>0.2657</td>
<td>0.1228</td>
<td>0.03</td>
</tr>
<tr>
<td>Number of Bathrooms</td>
<td>0.0881</td>
<td>0.0126</td>
<td>0.00</td>
<td>0.1834</td>
<td>0.0874</td>
<td>0.04</td>
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<tr>
<td>Age</td>
<td>0.0124</td>
<td>0.0047</td>
<td>0.01</td>
<td>0.0855</td>
<td>0.0450</td>
<td>0.06</td>
</tr>
<tr>
<td>Assessed Value</td>
<td>0.5275</td>
<td>0.0106</td>
<td>0.00</td>
<td>0.5381</td>
<td>0.0626</td>
<td>0.00</td>
</tr>
<tr>
<td>% African-American</td>
<td>-0.1712</td>
<td>0.0079</td>
<td>0.00</td>
<td>-0.0091</td>
<td>0.0161</td>
<td>0.57</td>
</tr>
<tr>
<td>School Area 1</td>
<td>-0.0941</td>
<td>0.0282</td>
<td>0.00</td>
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<td></td>
</tr>
<tr>
<td>School Area 2</td>
<td>0.0076</td>
<td>0.0288</td>
<td>0.79</td>
<td></td>
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<td></td>
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<tr>
<td>School Area 3</td>
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<td>0.0304</td>
<td>0.02</td>
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<td></td>
<td></td>
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<tr>
<td>School Area 4</td>
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<td>0.0259</td>
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</tr>
<tr>
<td>School Area 5</td>
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<td>0.0229</td>
<td>0.00</td>
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<td></td>
</tr>
<tr>
<td>Distance to CBD</td>
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<td>0.0038</td>
<td>0.00</td>
<td>-0.0376</td>
<td>0.0331</td>
<td>0.03</td>
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<tr>
<td>Distance to Greenway</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Lambda</td>
<td>0.6453</td>
<td>0.0111</td>
<td>0.00</td>
<td>0.7319</td>
<td>0.0404</td>
<td>0.00</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.8238</td>
<td></td>
<td></td>
<td>0.6115</td>
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<tr>
<td>Log-likelihood</td>
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<td></td>
<td>-194.3866</td>
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<tr>
<td>Akaike I.C.</td>
<td>255.0820</td>
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<td></td>
<td>404.7730</td>
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<td>Schwarz I.C.</td>
<td>339.7837</td>
<td></td>
<td></td>
<td>437.2648</td>
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<tr>
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<td></td>
<td></td>
<td>430</td>
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### Table 6. Pooled estimation, Mecklenburg and Gaston

<table>
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<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>Prob</th>
</tr>
</thead>
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<tr>
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<td>5.4640</td>
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<td>0.00</td>
</tr>
<tr>
<td>Number of Bedrooms</td>
<td>0.2240</td>
<td>0.0200</td>
<td>0.00</td>
</tr>
<tr>
<td>Number of Bathrooms</td>
<td>0.1430</td>
<td>0.0150</td>
<td>0.00</td>
</tr>
<tr>
<td>Age</td>
<td>0.0483</td>
<td>0.0035</td>
<td>0.00</td>
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<td>Assessed Value</td>
<td>0.5578</td>
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<td>0.00</td>
</tr>
<tr>
<td>% African-American</td>
<td>-0.1498</td>
<td>0.0033</td>
<td>0.00</td>
</tr>
<tr>
<td>Distance to Park</td>
<td>-0.0094</td>
<td>0.0019</td>
<td>0.00</td>
</tr>
<tr>
<td>Gaston dummy</td>
<td>0.1472</td>
<td>0.1394</td>
<td>0.29</td>
</tr>
<tr>
<td>Gaston*park</td>
<td>-0.0801</td>
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</tr>
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<td>log-likelihood</td>
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<tr>
<td>Akaike I.C.</td>
<td>4764.41</td>
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<td>Schwarz I.C.</td>
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<tr>
<td>N</td>
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### Table 7. Pooled estimation, all three counties

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<th>Coefficient</th>
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<th>Prob</th>
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</thead>
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<td>Income</td>
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<tr>
<td>Distance to Park</td>
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<td>0.0061</td>
<td>0.00</td>
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<tr>
<td>Gaston dummy</td>
<td>-0.1256</td>
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<td>0.87</td>
</tr>
<tr>
<td>Gaston*park</td>
<td>-0.0140</td>
<td>0.0740</td>
<td>0.85</td>
</tr>
<tr>
<td>York dummy</td>
<td>-0.2181</td>
<td>0.2395</td>
<td>0.36</td>
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<tr>
<td>York*park</td>
<td>-0.0507</td>
<td>0.0261</td>
<td>0.05</td>
</tr>
<tr>
<td>Adjusted R2</td>
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</tr>
<tr>
<td>log-likelihood</td>
<td>-15350.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Akaike I.C.</td>
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<tr>
<td>Schwarz I.C.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>10822</td>
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</tr>
</tbody>
</table>

Figure 1. Study Area
Impact of Outdoor Recreation Facilities on Rural Economic Growth

J.-C. Dissart and David W. Marcouiller

Written for presentation at the USDA NRI Funded Conference on Amenities and Rural Development, June 18-19, 2004 in Madison, WI

Abstract: Recreation sites allow for access, enhancement, and use of natural amenities. During the recent past, there has been a significant amount of work done to better understand the role of natural amenities within the context of rural change. There is no clear indication, however, about the relative importance of recreational sites in rural amenity-driven economic development. The research reported in this manuscript distinguished natural and built amenities for recreation purposes, and assesses the impact of the latter on remote rural economic growth. Based on a typology of rural remote U.S. counties according to natural amenity endowment, regression analysis modeled the change in median household income over the 1989-99 period. Independent variables included six outdoor recreation facility indices and a set of control variables that related to tourism budget, road infrastructure, distance from metropolitan area, demographics, and land ownership. Results suggest the presence of a limited relationship between facility variables and economic growth which varied by region. Policy implications of this work focus on the role of outdoor recreation facilities on economic growth in remote rural regions.

Authors are Assistant Professor, Institut Supérieur d'Agriculture de Lille (France) and Professor, Department of Urban and Regional Planning, University of Wisconsin-Madison respectively. This work was partially supported by the USDA Forest Service Rural Development Program and the University of Wisconsin - Extension, Community, Natural Resources, and Economic Development Program Area. Although several avenues of policy prescription are noted, the funding agencies listed remain immune to advocacy-related criticism. All remaining errors, misinterpretations, empirical imperfections and/or misguided policy implications remain the sole responsibility of the authors.
Impact of Outdoor Recreation Facilities on Rural Economic Growth

J.-C. Dissart and David W. Marcouiller

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Introduction

Despite the population turnaround of the 1970s, considerable public policy effort, and generally increasing demands for rural land, U.S. rural areas still lag behind urban ones with respect to many socioeconomic indicators, including housing, transportation, educational attainment, health care, and income. This statement, however, is not generally applicable to all rural areas. Rural America actually offers a diverse, contrasted picture of regions both in economic decline and in generally improving economic conditions (Castle 1995; Drabenstott and Smith 1995; Lapping, Daniels, and Keller 1989). The latter are typified as either located near major metropolitan areas, benefiting from agglomeration economies and economic spillover, or offering outstanding natural, cultural, or social amenities that attract people and firms.

During the past 50 years, the rural economy has transitioned away from traditional natural resource extraction activities and its related processing to services (both personal and professional) and retail sectors. With rising per capita incomes, transportation improvements, and environmental awareness, rural land is increasingly seen as a reservoir of natural resources for amenity use such as recreation and tourism, rather than for extractive use such as forestry, mining, agriculture or fisheries. Recreation and tourism is currently a popular rural development strategy because of the apparent ease of tourism in creating jobs and income, its low requirement in labor training and infrastructure investments, and its seemingly nonconsumptive nature (Frederick 1993).

The chief interest of rural tourism and recreation for rural areas, though, is that it capitalizes on land, a resource for which rural areas naturally enjoy a comparative advantage over urban places. Hence, rural tourism could provide a venue for competitiveness within market economies and long-term development. Those rural regions that are more remote (not adjacent to metropolitan areas) are those that stand to benefit most from tourism development because of the lack of economic spillovers from
those areas. Tourism development, however, is not without negative economic, social, and environmental impacts.

Whereas the empirical connection between natural amenities and rural economic growth has been established (e.g., Deller et al. 2001), debate surrounding the efficacy of nature-based tourism as a rural community development strategy exists (Marcouiller and Green 2000). In terms of economic growth in particular, natural resource-based recreation strategies rely on both land (natural amenities) and a host of nature-based tourism businesses and their supporting supply structure (Marcouiller and Green 2000). Also, recreation resources may be differentiated in terms of natural amenities (undeveloped) and outdoor recreation facilities (developed) that allow access to natural amenities. The latter may accompany natural resources and facilitate their enjoyment, thus attracting visitors and constituting a source of economic activity. This distinction is critical to rural development planning because recreation facilities may be planned and acted upon whereas natural amenities are often considered as fixed endowments in the short-term.

English and Bergstrom (1994) established the conceptual link between recreation site development and regional economic impact. An empirical assessment of the relationship between outdoor recreation facilities and rural economic growth, however, is still lacking. Consequently, the question this research attempts to answer is the following: to what extent do outdoor recreation facilities impact economic growth in remote rural counties across the US?

This analysis is presented and organized in five subsequent sections. The first section reviews the literature on income issues, the specific situation of remote rural areas, and factors that impact economic growth. In the next section, data and methods are outlined. Basically, the research followed a two-stage approach: first, cluster analysis defined a number of resource-like regions; then, explanatory models regressed change in income over the 1989-99 period on recreation facility indices and a number of control variables. Following this methods section, we present the results of these two analyses. The manuscript concludes with policy recommendations based on a

discussion of the results and a summary of limitations, contributions of the analysis and further research needs.

**Literature Review**

The focus of this paper on rural income growth reflects an interest in an important dimension of contemporary American income inequality. During the past 25 years, there has been a strong, persistent, and increasing income divide between urban and rural economies (Renkow 1996). Economic and demographic indicators suggest a growing disparity between urban and rural areas (Redman et al. 1992; Hansen 1995). Even though the 1990s witnessed a strong national economic expansion with urban regions experiencing declines in unemployment, increases in per capita income, and increases in weekly earnings, the performance of rural regions has lagged.

The income gap between urban and rural regions has remained both significant and persistent. The net per capita income gap between metropolitan and nonmetropolitan regions increased throughout the last three decades in the U.S. In 2000, nonmetropolitan regions lagged behind metropolitan regions by at least $9,000 in per capita income (BEA 2001). The per capita income ratio of nonmetropolitan to metropolitan regions has declined since the mid 1970s, except during the 1988-1994 period (Figure 1). Strong economic growth in the six-year period may have led to an increase in the per capita income ratio. In 2000, the per capita income ratio of nonmetropolitan to metropolitan regions decreased to an all-time record low of 69.7.

[Figure 1 here]

Income disparities grow as distance from metropolitan area increases. Indeed, while there is an overall pattern of economic disadvantage for rural areas, deeply rural regions (i.e., those that are not adjacent to metropolitan areas) face an even more challenging planning context due to remoteness.
Distance from and access to major metropolitan areas is only one of several factors that shape rural American diversity (USDA-ERS 1995). Despite improvements in communication and transportation, however, remoteness specifically affects rural well-being (USDA-ERS 1995). First, small-scale, low-density settlement patterns increase per capita costs of critical services such as education and health care, making them more difficult to maintain. Then, by impeding rural areas from being connected to the urban centers where most information, innovation, trade, and services take place, remoteness creates a barrier to development. Lastly, as extractive industry employment has declined and was not entirely replaced by other industries, the younger, wealthier and more educated population has left to seek jobs elsewhere, impeding economic development.

Thus, Feser and Sweeney (1998) found that Out-migration/Population Loss (OPL) could impair the local development potential by depleting regions of critical human capital, and by increasing fiscal pressure on local governments. They also found that over the 1985-1994 period, most communities facing severe OPL were located in the Great Plains and Mountain regions of the United States. Indeed, the Great Plains have been losing population for decades, and the more remote the counties, the worse the population loss (Rathge and Highman 1998; Rowlsey 1998). The situation is quite different in the West because the region is natural amenity-rich. Thus, the rural West experienced a 15% population gain over the 1990-97 period vs. 5% for other rural areas. Rapid growth in the rural West is likely to continue with the growth of western cities, the coming retirement of many baby boomers, and the region’s own youthful population (Cromartie and Wardwell 1999).

A significant body of literature has examined the relationship between regional growth and amenities. Amenities may be generally defined as location-specific features that conduce to convenience, attractiveness, or value. Amenities constitute a category of determinants of growth, and one of the important dimensions of quality of life along with other environmental, social and economic factors (Dissart and Deller 2000).

Regional growth has been studied from specific perspectives, namely human migration (e.g., Greenwood 1985) or firm location (e.g., Blair and Premus 1987), but may be considered as resulting from both human migration and business location (Knapp and Graves 1989).

Kusmin (1994) reviewed empirical studies of factors associated with the growth of regional economies, and found that substantive conclusions were sensitive to research design issues. Wong (1998) found that traditional economic factors (land, labor, capital, location) had to be satisfied first before intangible factors (business culture, community image, quality of life) mattered for economic development. Carlino and Mills (1987) analyzed the effects of economic, demographic, and climatic variables on population and employment growth in a simultaneous-equation framework. Among their findings were that location-specific amenities affected population and total employment. Subsequently, other studies have examined employment and population using simultaneous equation modeling (Boarnet 1994; Clark and Murphy 1996; Crown 1991; Henry, Barkley, and Bao 1997), and indicated a significant but complex role of amenities in regional economic growth and development.

There has been a growing stream of literature on outdoor recreation and regional economic development. Rudzitis and Johansen (1991) found that a majority of residents of wilderness counties had moved to or lived in the area because of wilderness. Using simultaneous-equation modeling, Duffy-Deno (1997a; 1997b; 1998) found no negative effect of the Endangered Species Act, state parks, and federally owned wilderness areas, respectively, on the economies of western nonmetropolitan U.S. counties. Using input-output multipliers based on surveys of wilderness users in Utah, Keith and Fawson (1995) assessed that visitors’ expenditures did not significantly influence these economies. On the contrary, using the same approach, Bergstrom et al. (1990) found that spending associated with outdoor recreation contributed significantly to output, income, value added, and employment in the rural areas they studied.

Despite the significant literature generated on amenities and rural development, there is still a knowledge gap regarding the empirical relationship between outdoor recreation facilities and rural economic development. Deller et al. (2001) empirically
assessed the role of amenities and quality of life in rural economic growth in the United States. Based on county-level secondary data, they used principal component analysis to derive five amenity vectors: land, water, winter, climate, and developed recreational infrastructure. They integrated these principal components in a structural model of regional economic growth, along with other variables thought to impact regional development (markets, labor, government), and showed that predictable relationships between amenities, quality of life, and local economic performance exist.

Focusing on household microeconomics of recreation trip expenditure behavior, English and Bergstrom (1994) examined the conceptual links between recreation site development and regional economic impacts. They argued that assessing regional economic impacts of recreation trips was important to public agencies' decisions about using recreation as a rural development tool. Basically, a recreation site contributes to a region's economic growth through household purchases of both trip-specific inputs and durable recreation equipment. This analysis empirically examined the empirical connection between recreation facilities and rural growth.

Data and Methods

The conceptual approach for analysis contained in this manuscript rests on a rural tourism modeling framework. The main variables of interest were natural amenities, outdoor recreation facilities, economic growth measured over the 1989-99 period, and a set of factors related to the recreation area and its potential users. Methods involved a two-step approach: cluster analysis, then regression analysis. These elements are detailed in turn.

Our conceptual approach is illustrated by Figure 2 below. Basically, natural amenities and outdoor recreation facilities, as major components of the supply side, are thought to impact the level of recreation and tourism in a given area. A specific area with natural amenity-based recreation potential attracts capital, labor and technology to develop specific recreation facilities (e.g., a ski resort or marina) as well as second

homes and hotel/motel units to house visitors (Lapping, Daniels, and Keller 1989). This increased population of consumers (both temporary and permanent) leads to an increased aggregated demand for goods and services in the local economy. In order to match this increased demand, an increase in the local supply of goods and services is necessary. In turn, increased supply requires more capital, labor, etc.: economic growth occurs. Thus, a nature-based tourism development strategy may increase local economic growth. The conceptual model also features a series of factors related to the potential recreation users and the recreation area itself that may affect the demand for a specific recreation area. As summarized by Daniels, Keller, and Lapping (1995, 275), "To achieve lasting success with tourism, a town must be accessible to fairly affluent tourists who live within 200 miles."

[Figure 2 here]

A feedback mechanism shows the interdependence between natural amenities, outdoor recreation facilities, and economic development (Figure 2). Thus, mismanagement of the natural resource base (e.g., overuse), or changes in people's preferences for certain types of recreation areas and activities, among others, may lead to a contraction of local economic activity, which could lead to local economic decline.

A study of the specific planning process that provides outdoor recreation facilities and manages natural amenities was beyond the scope of the study. Rather, we focused on selected observable outcomes of the rural planning process, as illustrated by levels of outdoor recreation facility development and levels of economic growth, while controlling for natural amenity and various demand factors.

Our primary geographic unit was limited to remote rural America. Specifically, units of analysis were U.S. nonmetropolitan, and non-adjacent to metropolitan counties. This type of geographic limitation focuses attention on those counties both in need of economic growth that with relatively high comparative advantage with respect to open space (able to capitalize on their land base). Determination of the nonmetropolitan
status of a county was based on the rural-urban continuum code established by the Economic Research Service of the United States Department of Agriculture (USDA-ERS 1997). Codes of nonmetropolitan counties that were of interest for this study were 5 (urban population of 20,000 or more, not adjacent to a metro area), 7 (urban population of 2,500 to 19,999, not adjacent to a metro area), and 9 (completely rural or fewer than 2,500 urban population, not adjacent to a metro area). The states of Alaska and Hawaii were excluded from the analysis.

Economic growth was a dependant variable of interest, and operationalized by the change in median household income over the 1989-99 period. Income statistics were available from the U.S. Census Bureau (USCB 2002): median household income in 1989 (variable P080A) and in 1999 (P53); 1999 data were adjusted for inflation. Percent change over the 1989-1999 period was calculated to yield INCOME, the economic growth indicator of interest.

Conceptually, we assume a tacit link between recreation activities, natural amenities and recreation facilities. For example, downhill skiing requires elevation and snow (topography and climate) but swimming, whilst requiring water, does not necessarily require a beach. Therefore, outdoor recreation facilities play a supporting role for a number of outdoor recreation activities that do need a natural amenity base.

Data regarding natural amenities (and outdoor recreation facilities) were available from the National Outdoor Recreation Supply Information System (NORSIS), a county-level database that documents facilities and resources that support outdoor recreation activities in the United States (USDA-FS 1997). Each NORSIS variable is derived from a source dataset and aggregated to a summary measure at the county level. Typically, these measures are either the sum total of land or water acreage in the county or the sum total of outdoor recreation facility counts.

Natural amenity variables were primarily used to describe land forms, land covers and land resources that condition the extent to which certain types of recreation activities can take place, hence the outdoor recreation facilities that may support them.

As such, they constitute a measure of supply for outdoor recreation and tourism, assumed not to vary over the study period.

Also, as there is a wide variation in county land area across the United States, and the objective was to group homogeneous counties in terms of physical environment, the following ratios were calculated, in proportion to total county area (NRITOTAL): 1) proportion of water acreage; 2) proportion of mountainous acreage; 3) proportion of forested acreage; 4) proportion of wetland acreage; and 5) proportion of wildlife acreage. After standardization, six criterion variables were available for cluster analysis: 1) PROPWAT (water), 2) PROPMTNS (mountains), 3) PROPFOR (forest), 4) PROPWETL (wetlands), 5) PROWLFLD (wildlife), and 6) AVGTEMP (temperature).

Outdoor Recreation Facility (ORF) variables were used to describe certain types of recreation activities that can take place, as conditioned by the natural resource base. As such, like natural amenities, they constitute a measure of supply for outdoor recreation and tourism opportunities. ORF variables were categorized according to the enabling natural resource base, then the supported recreation activity. For example, the resource base "water" comprised six recreation activities: boating, fishing, swimming, diving, canoeing/rafting, and water-general. The "boating" activity itself comprised variables related to the number of boat ramps, boat launches, refuges with motorized or motorized boating, marinas, boat rental firms, boating and sailing instruction firms, from multiple sources (Forest Service, National Park Service, Corps of Engineers, Bureau of Land Management, Bureau of Reclamation, Tennessee Valley Authority, State Parks, Fish and Wildlife Service, and American Business Information). To get a relative measure of supply of these facilities, all ORF variables were first divided by total county area (NRITOTAL); they were then standardized to a mean of 0 and a standard deviation of 1; finally, they were summed by the corresponding natural amenity base to form six ORF indices: 1) WATER, 2) CLIMATE, 3) TOPOG, 4) LAND, 5) WILDLIFE, 6) NATURE. Thus, for example, the ORF index WATER is the sum of all variables related to the boating, fishing, swimming, diving, canoeing/rafting, and water-general activities, these activities being themselves aggregations of ORF variables.
extracted from NORSIS. One important feature of the research design was that the time at which the development of facilities took place was not known. Since economic growth was measured over the 1989-1999 period, the treatment may have happened before or during the study period, a definite data limitation of the study.

Last, a number of key control variables, related to both potential recreation users and the recreation area itself were identified from the literature review. Population characteristics included education, age, and growth. Education and age data were available from the County and city data book (USCB 1994). As the modern wilderness enthusiast is better educated than the less frequent visitor to the wilderness (Hendon 1991), the variable retained for the study was persons 25 years and over, percent with bachelor’s degree or higher in 1990: EDUCOL. Population age was estimated by the percent of population aged 65 years and over in 1990 (USCB 1994): POPOV65. The choice of this variable reflected the extensive documentation of amenity migration by retirees. Yearly population numbers were available from the Regional Economic Information System (BEA 2001), and used to calculate the percent change in population over 1989-1999: POP8999.

Data regarding transportation infrastructure were obtained from the Highway Performance Monitoring System, Federal Highway Administration, U.S. Department of Transportation (FHWA 2001). The extent of interstate mileage per county was divided by total county acreage (NRITOTAL) to yield a variable that described density of interstate infrastructure in a given county: INTRSDEN.

Location, or distance from markets, is a theoretically important variable for tourism-based development strategies. Distance between nonmetropolitan and metropolitan areas can also serve as a proxy for agglomeration economy effects. Here, distance was defined as the Euclidean, straight-line distance between two objects, in this case two county centroids. Distance (B02MDIST) was calculated between a given remote rural county and its closest metropolitan county, which was defined as counties in metropolitan areas of 250,000 population or more.

Management intensity was approximated by resource ownership. Proportion of public (i.e., municipal, county, state, federal) ownership of land with respect to total county acreage (NRITOTAL) was calculated: PROPPUBL. Lastly, data on marketing efforts to stimulate demand for recreation areas were available at the state level only. The Travel Industry Association of America conducts an annual survey of state and territory tourism offices (TIAA 2000). A county-level tourism marketing variable was created by allocating a share of a given state tourism office budget for 1989 to every county in that state based on the county’s share of the 1989 state population: TRSM89PO.

Beyond calculating appropriate ratios and indices, the analysis involved two major steps. First, cluster analysis was used to group similar counties based on their type and level of natural amenity endowment. Cluster analysis is a set of techniques for accomplishing the task of partitioning a set of objects or units of analysis into relatively homogeneous subsets based on the inter-object similarities (Kachigan 1991). Consequently, the formed regions have more in common, in terms of their values on prespecified variables, with one another than they do with other observations (Plane and Rogerson 1994).

In the literature, English, Marcouiller and Cordell (2000) used cluster analysis to group similar counties in terms of population density, distance from metropolitan areas, and proportion of county acres in cropland, forests, pasture/ range, and mountains. They estimated export employment in tourism-sensitive sectors for every cluster. Drawing on cluster analysis, Isserman elaborated quasi-experimental control group methods for regional analysis and project evaluation. The method was applied with various treatments, including regional development planning (Isserman and Rephann 1995).

Among the many clustering procedures available, we used PROC FASTCLUS in SASE. FASTCLUS performs a disjoint cluster analysis on the basis of Euclidean distances computed from one or more quantitative variables (SAS Institute 1990b). Thus, the study clustered counties based on the standardized natural amenity variables
presented previously. Though there is no satisfactory method to determine the number of clusters for any type of cluster analysis, an approach combining heuristics and various statistics was retained, including removing severe outliers.

Second, within each of the formed clusters, income growth was regressed on variables of outdoor recreation facilities and other control variables, to assess the relative importance of the latter in explaining the variation of the former. The study used Ordinary Least Squares (OLS) to estimate 6 models (one for each cluster formed) as shown in equation [1].

\[ \text{INCOME}_i = \alpha + \sum_{j=1}^{m} \beta_j \text{ORF}_{ij} + \sum_{k=1}^{p} \beta_k \text{CONTROL}_{ik} + \epsilon_i \]  

[1]

Where \( \text{INCOME}_i \) is the change in median household income over the 1989-1999 period for county \( i \); \( \alpha \) is the regression line intercept; \( \text{ORF}_{ij} \) is a given \( j \) (from 1 to \( m \), i.e., from 1 to 6) outdoor recreation facility index for county \( i \), and refers to WATER, CLIMATE, TOPOG, LAND, WILDLIFE, and NATURE for county \( i \); \( \text{CONTROL}_{ik} \) is a given \( k \) (from 1 to \( p \), i.e., from 1 to 7) control variable for county \( i \), and refers to EDUCOL, POP2065, POP8999, INTRSDEN, B02MDIST, PROPUBL, and TSMS89PO for county \( i \); and \( \alpha \) and \( \beta_k \) are partial regression coefficients for ORF indices (j) and control variables (k), respectively, and for county \( i \). \( \epsilon_i \) is the error term for county \( i \).

Because the research focused on the impact of ORF variables on economic development indicators, emphasis was put on the stability of the estimated ORF parameters, in terms of sign, magnitude, and level of significance. Therefore, the analysis checked and corrected for two common problems that impact stability of the estimated parameters and are associated with a cross-section analysis of data: multicollinearity and heteroskedasticity.

Several approaches were used to detect multicollinearity, including the change in size and sign of the parameters from one model to another, the presence of unstandardized partial regression coefficients with large standard errors, the use of a correlation matrix, and the condition index of the data (Judge et al. 1988; Kennedy 1998; SAS Institute 1991; SAS Institute 1990c). Given that increasing the sample size was not an option, multicollinearity was addressed by combining any two independent variables that presented a multicollinearity problem, or by dropping all but one of the correlated independent variables. Heteroskedasticity was detected by performing a test (the SPEC option in SAS®), and addressed by re-calculating parameter t statistic values when heteroskedasticity had been found (using the diagonal elements of the heteroskedastic-consistent covariance matrix given by the ACOV option in the REG procedure).

Results

As the objective of the research was to study the impact of outdoor recreation facilities on economic growth -regardless of the initial endowment in natural amenities- even regions that featured few natural resources were included in cluster analysis. The set of remote rural counties comprised 1,272 county-level units (Alaska and Hawaii counties excluded by research design). Preliminary analysis revealed four outliers (McIntosh and Ware, GA; and Dare and Hyde, NC) that were consistently singled out in the clustering process, and were dropped from further analysis.

The final choice of clusters involved a tradeoff between maximizing the number of clusters to allow for regional diversity, and not retaining clusters with less than 30 observations (degrees of freedom issue in subsequent regression analysis). Based on these criteria, the final delineation of clusters was obtained when PROC FASTCLUS was run with a maximum number of 6 clusters on 1,268 counties (1,272 minus 4 outliers). While there is no universally accepted method to determine the “best” number of clusters, or whether “real” clusters were uncovered, several indicators were used to reach that decision: overall \( R^2 \), F statistic, approximate expected overall \( R^2 \), and Cubic Clustering Criterion.
Descriptive analysis for the six clusters illustrated their natural resource characteristics (Table 1). Statistics included the frequency of the cluster as well as its mean, standard deviation, and coefficient of variation for each criterion variable (CV=standard deviation/mean*100). The lower the coefficient of variation, the higher the consistency of the data for a given variable in a given cluster, which illustrated the salience of a natural resource theme across that region, thus enabling its labeling.

Cluster 1, with 687 counties, was the largest region. It scored negative on all of the natural resources variables, indicating low endowments in water, mountains, forests, wetlands, wildlife, and temperature. The latter indicated that Cluster 1 might feature, to a small extent, snow resources to support winter-based recreation activities. Except for PROPMTNS, PROPFOR, and PROPWETL, all standard deviation values were greater than mean values (in absolute terms). Therefore, Cluster 1 was mostly characterized by a flat topography, the lack of forested coverage and the lack of wetlands. With a coefficient of variation of -56, PROPFOR gave Cluster 1 its predominant feature: absence of forests, or, conversely, abundance of cropland, pasture and rangeland. Cluster 1 was also characterized by the lack of mountains and wetlands. Cluster 1 appeared the most deprived of all regions in terms of opportunities for natural resource-related recreation activities, hence the label ‘natural amenity lacking.’

Cluster 2, with 181 counties, scored high on the presence of mountains, with original values 2.3 standard deviations above the mean. Cluster 2 also featured a lack of wetlands, as illustrated by a mean of -0.42. Save for PROPMTNS and PROPWETL, all other criterion variables featured standard deviation values that were greater than mean values. With a coefficient of variation of 25, Cluster 2 was mostly characterized by the presence of mountains, which provided opportunities for topography-related recreation activities (climbing, downhill skiing, etc.). To a lesser extent, Cluster 2 was also characterized by the lack of wetlands.

Cluster 3 had 249 counties. In contrast to Cluster 1, Cluster 3 featured a proportion of forested acreage that was above average (mean value of 1.27). AVGTEMP was the only other criterion variable that featured original values over 1 standard deviation above the mean, indicating warmer temperatures (and therefore less snowfall). Other criterion variables were largely unremarkable with mean values around 0. The lowest coefficient of variation value was 50 for PROPSSR; then, above average temperatures and below average proportion of mountains followed. Therefore, Cluster 3, with its forests, could provide more opportunities for recreation activities (e.g., related to trails or wildlife) than Cluster 1.

Cluster 4, with 85 counties, was mostly characterized by below average temperatures, with a mean value of -1.32 and a standard deviation of 0.36. Conversely, this indicated above average snowfall. PROPWETL was the only other criterion variable with a mean value above 1 (1.24), but its standard deviation value (1.31) was slightly greater than its mean value. With a coefficient of variation of -27, Cluster 4 was first and foremost a region characterized by snowfall, providing opportunities for winter-based recreation activities (e.g., skiing, snowmobiling, etc.), and to a lesser extent a region with more wetlands, more forests, and less mountains than average.

The one feature that characterized Cluster 5 (36 counties) was wildlife resources. PROWLDL had original values over 3.35 standard deviations above the mean, and a standard deviation of 1.67. With mean values less than 0.33 in absolute value, other criterion variables were largely unremarkable, confirming the dominant wildlife resource feature (coefficient of variation equal to 50). Cluster 5 presented ample opportunities for activities such as hunting and viewing.

Cluster 6, with 30 counties, was the smallest of the six regions. It scored high on the presence of water (mean value of 3.99 for a standard deviation of 1.70) and wetlands (mean value of 2.12 for a standard deviation of 1.81). But the central feature of this region was the lack of mountains, with a mean of -0.44, and a standard deviation of 0:
all 30 counties in that region shared the characteristics of featuring no mountainous acre. With coefficients of variation of 0 and 43 for PROPMTNS and PROPWAT, respectively, Cluster 6 featured a flat topography, and to a lesser extent above average water resources. Cluster 6 held potential for water-related recreation activities, including boating, fishing, and swimming.

Regression analysis was performed on 1,263 observations: some variables had missing values, but this situation affected Clusters 1 and 2 only. As a general interpretation of regression results, if outdoor recreation facility variables were significant at the 10% level (or less) in a given model, the hypothesis that outdoor recreation facilities impact rural economic development was not rejected for that model. This implied that estimated parameters for the ORF variables were not only consistently significant but also stable in sign and magnitude. A summary of regression results for the six clusters are summarized in Table 2. Generally speaking, results showed that few outdoor recreation facility variables were statistically significant in a given model, and the impact of ORF variables on economic development indicators varied by region.

[Table 2 here]

Results indicated that ORF variables were associated with an increase in median household income over time (INCOME) in Clusters 1 and 2 (WILDLIFE and WATER, respectively, both significant at the 10% level). The model for Cluster 4 showed contradictory results, with WILDLIFE statistically significant at 10% and associated with an increase of INCOME, whereas TOPOG was statistically significant at 5% and negatively associated with INCOME. The model for Cluster 5 featured no statistically significant ORF variable, and the model for Cluster 6 was statistically not significant overall (P>F=0.21). Therefore, recreation facilities had no apparent impact on rural economic growth in three regions out of six (Clusters 3, 5, 6), and recreation facilities were unambiguously associated with increased economic growth in two regions out of six (Clusters 1 and 2). These regional differences tended to underline the relevance of conducting the analysis by cluster, taking into account those regional differences.

Control variables were variously associated with INCOME. Distance from metropolitan areas, as expected, was associated with a reduction in INCOME in Clusters 1 and 5 (not significant in other models); the more remote the county, the weaker the economic growth. More surprising was that tourism budget (TRSM89PO) and college education (EDUCOL) were also negatively associated with income reduction in Clusters 1, 3 and 4 and Clusters 1, 4 and 5, respectively. On the contrary, proportion of population over 65 years (POPOP65) and population growth (POP8999) were both associated with an increase in median household income in Clusters 1, 2, 3 and 6 and Clusters 1, 2 and 4, respectively. This tended to underline the potential impact of amenity migration by retirees. Public ownership of resources (PROPUBL) had mixed impacts on INCOME: positive, in Cluster 3, but negative, in Cluster 1.

Finally, interstate mileage density (INTRSDEN) had no statistically significant effect on the variation of INCOME about its mean.

Overall, these results showed that the hypothesis of the existence of a relationship between outdoor recreation facility variables and economic development indicators could not be rejected overall, but had to be treated with caution. Indeed, the level of significance of outdoor recreation facility variables varied greatly from cluster to cluster.

Discussion and Policy Implications

Generally speaking, the expected significant outdoor recreation facility variables were not systematically related to the dominant natural resource theme of a given cluster. For example, one would have expected WILDLIFE to be significant, or at least featured, in the model for cluster 5 (wildlife); instead, WATER, albeit non significant, was part of Cluster 5's model specification. Also, one would have expected CLIMTOP to be statistically significant in the model for Cluster 2 (mountains); CLIMTOP was part
of the specification, but was not significant. Moreover, CLIMATE was not part of the specification for Cluster 4 (snowfall). There was a lack of correspondence between a given outdoor recreation facility index and its underlying natural resource base. There might be several reasons for this. One is a variable definition issue: the way outdoor recreation facility indices were constructed might not systematically reflect the underlying natural resource theme. Another reason is that natural resources might not be developed in a systematic fashion: a given region, endowed with natural resources, might develop some resources and not others, creating a potential for disconnection between natural resource base and outdoor recreation facilities.

Also, outdoor recreation facility variables were rather frequently non significant. Indeed, out of six models, three had no statistically significant facility variable (Table 2): Clusters 3, 5 and 6. Results of the analysis suggests that in 50% of the models, outdoor recreation facility variables had no statistically significant impact on the change in median household income over time, which calls into question their role as factors of economic growth in U.S. remote rural counties.

One could hypothesize that the way ORF variables were constructed affected their level of significance. For example, do NORSIS data capture the number of recreational opportunities in a given county? Zinser (1995) explained that counting facility units is a relatively easy way of measuring this concept, but the turnover rate (number of times per day that the activity can be undertaken by a different groups of users) should be used instead. Such data were not available, however, so this was an inherent limitation of the study. This limitation, however, was valid for every county and every natural amenity base, and therefore cannot fully explain the relatively high frequency of ORF variable non significance. Another reason could lie in the way the indices were built: sums by index of standardized variables may not adequately reflect the variation in recreation facilities across counties. ORF index robustness was tested, however, by calculating their correlation coefficient with ORF variables based on the same source data but built using principal component analysis. Values for the correlation coefficients ranged from 0.47 (LAND) to 0.94 (TOPOG), with the LAND correlation coefficient being the only value below 0.73; this showed robustness of index building as a way to summarize variation in recreation facility distribution across remote rural areas.

Also, one could reasonably hypothesize that median household income may be influenced by more factors than just tourism. Indeed, it was difficult to assess whether the set of variables suggested for the study was comprehensive enough because the relationship between natural amenities, outdoor recreation facilities, and economic development was to a significant extent an indirect one. In the conceptual approach used for the research, economic growth was a potential outcome of the economic impacts of remote rural recreation, where tourism itself is conditional upon natural amenities and outdoor recreation facilities. Such an indirect relationship created more opportunities for the existence of additional impacting and controlling factors that might be difficult to identify and assess.

Thus, the regional economic growth process may involve a larger set of variables that may capture more variation than the tourism model used in the study. For example, Deller et al. (2001) built structural models of regional economic growth in population, employment, income with four broad sets of independent factors: markets, labor, government, and amenity attributes. This model ‘mismatch’ may explain the relatively low number of statistically significant outdoor recreation facility variables across regions. In particular, the choice of remote rural regions as units of analysis may have compromised the usefulness of a tourism model. Indeed, by definition, the chief characteristic of remote rural regions is their lack of accessibility whereas successful tourism development strategies usually happen when two conditions are met: presence of amenities, and proximity to markets (i.e., population centers). The choice of remote rural regions, however, was driven by need and developmental context (i.e., regions that are most in need to capitalize on their land base). Including more variables in the models, nonetheless, would not necessarily have enhanced the level of significance of outdoor recreation facility variables, which were the focus of the study, but it definitely
would have created more difficulty regarding model specification, especially in smaller clusters where the number of degrees of freedom was a concern.

Related to model specification was the issue of including earnings by tourism-linked industries as independent variables in regression models. Indeed, it is the tourism industry that contributes directly to economic characteristics. Cause-effect relationships between tourism industry and economic characteristics are more direct; natural amenities and recreation facilities are an indirect means to affect economic characteristics, but provide fundamental supply attributes to the tourism industry. Therefore, it could be that tourism is related to economic development, thereby offering a strategy for rural development, but not via natural resources and recreation facilities. The choice of not including earnings by industry, however, had the advantage of avoiding endogeneity issues (earnings variables could not be considered exogenous to INCOME regression models), while focusing on the main variables of the research question.

Beyond lack of significance of ORF variables, a major finding of this analysis was that the relationship between outdoor recreation facility variables and economic growth was region-specific: in some clusters, INCOME was positively related to facility variables, whereas in some other regions there was no association between the two (Table 2), whereas in Cluster 4 there were opposite signs. This diversity of relationships made the importance of regional context obvious: using a research design analogy, different natural resource regions presented different economic responses to different treatments of outdoor recreation facilities.

Several difficulties, however, arose with this diversity of relationships. First, the intensity of the relationship did not seem to relate to the regional endowment in natural resources. Thus, one might have expected more statistical significance in more richly endowed regions. Such was not the case. Cluster 1, which was the poorest region from a recreation perspective (with below average values for all clustering criterion variables, except AVGTEMP), had one recreation facility index (WILDLIFE) positively associated with INCOME; Clusters 3, 5 and 6, with richer endowments, however, had none.

Therefore, it was difficult to suggest patterns for the relationships between ORF variables and economic growth across clusters that were variously endowed in natural amenities. Second, the relationship may not be unambiguous within a given cluster. Indeed, the model for Cluster 4 (snowfall) featured two statistically significant ORF variables, WILDLIFE and TOPOG, but with opposite signs. This tended to show that outdoor recreation facility variables, relating to different types of facilities - hence different types of natural resource base - could have different effects on economic growth in a given cluster. It is, however, difficult to conclude on this potentially contradictory effect of facility indices on economic growth, given the sole occurrence of multiple significant facility variables in the same model.

All in all, one should be skeptical about cause-effect relationships between outdoor recreation facilities and economic growth in remote rural regions of the United States. Consequently, the chief planning implication of this study was that planners should be wary of overstating the importance of developing natural resources with outdoor recreation facilities for economic growth purposes. Wariness was in order for two main reasons: the frequency of statistically significant ORF variables in the various regression models was relatively low; and the relationship between ORF variables and economic growth varied on a regional basis. Wariness was particularly in order for regions characterized by forests (Cluster 3), wildlife (Cluster 3), and no mountains and water (Cluster 6), where either INCOME models were not significant overall, or featured no statistically significant ORF variable.

Making policy recommendations for other clusters is difficult, especially for counties located in the snowbelt (Cluster 4), where the model presented ORF variables with opposite signs. Planning implications seemed more straightforward for Cluster 2, however. Indeed, in Cluster 2, which was more endowed with natural amenities than Cluster 1 and characterized by the presence of mountains, outdoor recreation facilities (WATER) were associated with an increase in median household income. Therefore, planners could present the development of water-related facilities as a way to stimulate economic development in their community. Mountainous areas, or in general varied
The list of independent variables could be expanded to account for more factors that influence regional economic growth, such as markets, labor, and government. Accounting for these variables would address the issue of using a conceptually limited tourism model as opposed to an expanded structural model.

Despite limitations, this research made several contributions. For example, while nonmetropolitan counties are usually studied as a whole, this study focused on remote rural regions, a previously seldom addressed rural planning focus. Results of this study suggest that it should be acknowledged as a stand-alone and regionally-relevant policy issue. Although tourism is a popular development strategy, results of this research suggest there is limited empirical evidence in its support, at least via the development of recreational sites, and for remote rural counties over the 1989-1999 period.

Our results suggest the importance of the regional context. Regional planning that recognizes natural resource differences is likely to be more successful at achieving economic growth objectives than either broad federal planning and/or locally specific devolved planning that would ignore them.

As the rural American economy continues to shift away from natural resource extraction to non-traditional manufacturing and services, tourism has been suggested as a way for rural areas to capitalize on their land base and enhance economic development. The efficacy of nature-based tourism as a rural development strategy has not been clearly established. Our work suggests that planners be careful not to overstate the importance of recreational sites to rural economic development, which tends to happen in the practice of recreation planning, tourism promotion, and economic development.

Literature Cited


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**Note:** Cluster mean, Cluster standard deviation, Cluster coefficient of variation

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**Note:** *p<0.10; **p<0.05; ***p<0.01

**[4]** Parameter estimate

**[5]** t-value (corrected for heteroskedasticity if Pr2>1 is <0.05)

**[6]** Critical [1] values for clusters 1, 2, 3 are 1.645 (α=5%), 1.960 (α=5%), and 2.576 (α=1%)

**[7]** Critical [1] values for clusters 4 are 1.671 (α=10%), 2.000 (α=5%), and 2.660 (α=1%)

**[8]** Critical [1] values for clusters 5 are 1.701 (α=10%), 2.048 (α=5%), and 2.783 (α=1%)

**[9]** Critical [1] values for clusters 6 are 1.714 (α=10%), 2.069 (α=5%), and 2.807 (α=1%)

**[10]** Test for heteroskedasticity results after correcting covariance estimates

**[11]** For Clusters 3 and 6 the average covariance matrix for the SPEC test has been deemed singular which violates an assumption of the test. Use caution when interpreting the results of the test.

Figure 2. Conceptual approach: A tourism model
The complete list of variables is available from the authors.
RURAL AMENITY POLICIES:

FUTURE STAKES

(Jean-François BEURET and Marie Christine KOVACSHAZY, October 2003)

When residents of the countryside go into the city they often have to pay for a parking space and so pay for a service which is provided for them. But when city dwellers head out to enjoy the quiet of the countryside, admire farmed landscapes, and amble up country lanes to reach the best viewpoints, they pay nothing for the service they are provided with. And yet it is indeed a service because the upkeep of the assets provided by rural areas has its costs.

Farming practices change and what agriculture once produced naturally for our great satisfaction such as country lanes, landscapes, traditional buildings and so forth is no longer produced. Hedges and embankments are essential features of many country landscapes to which the French feel an attachment. Previously farmers would spend long days clearing out ditches and preparing for winter by cutting wood from the hedges, which by the same token were carefully tended. Some of these hedges have been ripped out today because they were in the way of farmers looking to work larger plots of land and needing wider lanes. The same is true of assets related to crafts, businesses and religious practices: the upkeep of chapels, mills, wash-houses and other buildings costs individuals and rural councils dearly for benefits which are often slight or even non-existent. And so such assets provided by rural areas are vanishing: citizens
grouped into numerous associations complain of this and criticize certain economic activities for destroying this heritage. Given that public demand for these assets is growing disproportionately to income, demand will become ever more insistent in the future so some form of response is called for.

These assets now have a name since economists, notably at the OECD's Territorial Development Department have taken an interest in them: they are grouped under the heading of rural amenities, defined as 'natural or man-made assets which the public enjoys irrespective of any function they may have in the production process. They originate in a well-defined geographical area which has specific physical and cultural characteristics' (OECD, 1996). It is their hedonic value, and so the well-being they procure us, that makes amenities different from more ordinary assets. This value may be aesthetic, recreational or even an identity value. These assets raise a specific economic problem because, not being regulated by a market, there is nothing to prompt those who produce them to continue doing so. What should be done to conserve them? First, those who provide them should be allowed to derive some benefit from them or at least not to be penalised economically if they conserve them. This calls for specific policies which we shall present by way of several examples. After identifying the economic instruments traditionally implemented, we look at the challenges which shall have to be met to go beyond them and make more allowance for the regional and collective dimension of the provision and enhancement of amenities.

1 The OECD (1994) reports that elasticity of demand for amenities relative to income is greater than unity.

1. CLASSICAL ECONOMIC INSTRUMENTS: RE-ESTABLISHING MARKET COORDINATION

11. Regulation of rural amenities by market forces

Most rural amenities are public goods or common resources which anyone may enjoy without paying those who provide them. One way, then, of stimulating a supply of amenities which is consistent with demand is to restore the market. To do this, a form of exclusivity must be created so that a public good can become a club good and a common resource can become a private good. This is how, in Northern Italy, mushrooms which were an overexploited common resource on local council land have been saved so that existing stocks can be sustained without overpicking. The Comunali Parmensi own 9000 hectares of forest, grazing land and unfarmed land. Mushroom picking has always been a very important activity for the members of the Comunali, the local inhabitants in this case, but in recent decades picking by tourists has put great pressure on resources. In the mid 1980s tourists' willingness-to-pay for a day out picking mushrooms was estimated on the basis of transport costs and contingent evaluations at about 2 ECUs. At first it seemed difficult to impose restrictions given the long tradition of free access. However, after clearing up a few legal issues, in 1988 the Comunali Parmensi were able to set up reserves for mushroom picking where access was restricted to commercial pickers with special permits. Access permits were issued to visitors at the willingness-to-pay rate evaluated previously, with the commercial pickers and forest rangers of the Comunali Parmensi enforcing controls. Some 10,000
tickets are sold each year, meaning that the sites and their resources can be properly managed.

Many other examples of this type can be found and exclusion may relate directly to access to the amenity or to access to a service allowing the amenity to be enjoyed (a car park, a viewpoint, a visitor centre, etc.). In France and the Netherlands some outstandingly scenic villages are only accessible by paying for a parking space while North America’s nature reserves charge for admission, all of which are ways of creating a form of exclusion between the beneficiaries, who are recognized consumers of an asset provided for them, and the remainder of the population.

12. The risks of exclusion

Does that mean that toll gates are to be set up at the entrance to the countryside and its sunken lanes, that access to the finest panoramas will be pay-per-view, and that admission will be charged everywhere? Such market mechanisms for rural amenities are already in place for amenity of outstanding beauty, or which are unique, fragile or subject to high tourist traffic, but the utmost care is called for. First because the users of amenities should not be the only ones to pay for the cost of their provision. If this were so, those who do not use them but demand that they be conserved because they are happy for them to exist, the ‘non-user beneficiaries’, would be free riders deriving an advantage without paying for it. The cost of caring for amenities would fall upon the users alone, which would be neither fair nor efficient as users might be discouraged by prohibitive access charges. Indeed, such a market arrangement might be rejected out-of-

hand by the public, disgruntled at having to pay for access to assets they consider as an integral part of their own community heritage: such reactions have been reported in France and in more free-market countries like Australia (OECD, 1990). Public policies will therefore have to take account of cultural factors specific to each country or even each region or locality. Above all they shall have to organize market arrangements by creating a form of exclusion with compensatory or incentive mechanisms whereby it is the authorities, representing the beneficiaries of amenities and in particular non-user beneficiaries, who pay the economic agents and localities providing the amenities.

13. When the public authorities act as intermediaries: ‘administered market coordination’

A form of coordination is then arranged where government sets out to be as neutral an intermediary as possible between supply and demand, substituting for an invisible hand which is absent here. To do this, it levies resources on the beneficiaries of an amenity so as to return them to the providers of that amenity. This assumes the introduction of what are known as ‘assigned taxes’, targeted as far as possible at groups who benefit from amenities, with the takings being assigned to actions designed to conserve the amenities they call for.

In practice, it is difficult to introduce assigned taxes like this because the beneficiaries are often poorly identified, especially when they are not users. And so the resources employed often come from the general public purse with the charge for amenities being shared among all taxpayers. These resources are used to offset excess costs related to
actions designed to conserve an amenity; this is the aim of ecological payments introduced in Switzerland and of European Regulation 2078/92 on the introduction of agri-environmental measures whereby farmers who employ what are judged more environmentally-friendly practices can obtain compensation.

These resources may also be employed to make up for loss of takings by agents who refrain from carrying out an operation that might cause irreparable damage to an amenity. This is what the Swiss Fund for Landscape does. What is to be done when local authorities eager to provide employment and ensure the supply of resources plan to build dams which would drown Alpine valleys and destroy landscapes which are highly prized by the public? For some local authorities which derive little tourist income it is a choice between either being left by the wayside of the overall development of society for the sake of providing a landscape for walkers who enjoy it more often than not for nothing in exchange, or selling energy... But for society as a whole, the benefit obtained in terms of power supply may be far less than the loss of the non-market benefits corresponding to the value of the landscape (and so indirect benefits from tourist activities). The Swiss Fund for Landscape may then step in to ban the building of certain dams but will compensate these rural authorities so as to make good the loss incurred by not carrying out their project; this loss corresponds to a cost of providing scenery and it is therefore the taxpayers, who are the beneficiaries of this rural amenity, who foot the bill.

This is a policy specific to one form of amenity, landscape, of the sort found in some countries for mountains, coastlines or the built heritage. But the challenge sometimes lies elsewhere, in changing sector-specific policies. Whether it be policies on farming, fisheries, tourism, infrastructures, or forestry, all may have a far greater impact on rural amenities than the policies specifically designed to conserve these amenities. They need therefore to be modulated to allow for broader objectives than those traditionally set for them: amenity-related conditions will be laid down for granting certain forms of aid which will be defined and targeted by taking account of demand for amenities, with a contribution from the beneficiaries of the amenities to financing them. Re-establishing 'administered' market coordination will therefore involve both specific policies and the modulation of sector-wide policies.

14. Several ways of observing the same principle: the beneficiary-pays-principle

In all instances an attempt is made to abide by a baseline principle proposed by the OECD in 1994, the 'beneficiary-pays-principle'. Just as polluters must foot the bill for damage caused by their actions on the 'polluter-pays-principle', so anyone providing an amenity should be paid for doing so by those who benefit from it. This principle is seldom strictly applicable because of the dispersion of beneficiaries and difficulties in identifying them, but it serves as a reference point, a guideline. Its recognition by OECD member states is a major step forward in our view because it underlines the point that identity, beauty, quiet, and the feeling of well-being provided by a place are not negligible quantities in the face of the lure of gain and of what is sometimes just the frantic pace of the modern world. Within modernized economies, which generate and trade essentially immaterial outputs – indeed this sector employs more than 60 per cent
of the working population in Europe – the value and significance of the provision of rural amenities is now recognized.

On the whole, it can be seen that some countries give precedence to the creation of a market by setting up rights of access and usage of amenities whereas others prefer to employ public monies to pay the providers of amenities. The major drawback with this second approach is that demand may remain mute, making it difficult to gauge as it does not make itself known anywhere.

15. The risks of the market only approach: not substituting for ‘basic civilities’

Whether the market coordination to be set up is administered or not, these policies are ineffective if market coordination merely substitutes for what are both discrete and effective non-market forms of coordination. Coase (1960) provides a reminder that property rights are not unlimited and correspond to a list of things owners are entitled to do and things they have a duty to do. Owners’ rights end where citizens’ rights begin and in particular those of ‘amenity consumers’. For example, access to farmland for walkers and other consumers of rural landscapes is the subject of agri-environmental measures in some counties with owners being remunerated for allowing walkers access to their land. Conversely, in northern Europe it is the tacitly acknowledged right of all citizens – *attachment* – to go on to farmland and collect natural products such as mushrooms and wild berries. Then again, some agents provide amenities free-of-charge because they consider it their duty to do so: no written rules say so but tacit conventions are in force and set out how much effort each must put in to maintaining lanes, hedgerows, water courses, decorating houses with flowers, etc. Social control is exercised by the local community, which tacitly sanctions those who fail to comply with the convention in force (Beuret, 1999). There are basic ‘civilities’ (Duclós, 1993) which allow us to live together by setting out the duties upon each of us in terms of respecting property held in common.

The danger of leaving amenities to market forces is that contractual mechanisms will be substituted for conventional mechanisms by substituting market coordination for non-market coordination. Now, while non-market forms of coordination do not fulfill all the requirements of coordination they do exist without public aid, involve no transaction costs and social control is often more effective than sporadic outside controls. The danger is that eventually everything will be governed by the market. The weekend gardener, the owner of a superb wooden boat, or even the young and beautiful dressed in all their finest attire, all provide a rural or urban landscape we can enjoy: would the world still be a place worth living in if everyone insisted on being paid for providing an amenity?

Public policies on amenities shall therefore have to take account of a ‘benchmark’ which legally or tacitly identifies what owners of property to which an amenity attaches are entitled to do and what they have a duty to do in virtue of rights that amenity beneficiaries are collectively recognized to enjoy (not to damage the amenity, or even to maintain it, etc.). Now, this benchmark varies from one locality to another.
2. POLICIES OF THE FUTURE: THE MATERIALISATION OF TECHNOLOGICAL AND INSTITUTIONAL INNOVATION

Having described the most widely employed public policy instruments and pointed out their shortcomings let us now turn to the future and the challenges to be met if these policies are to be made more relevant. There is no denying that collective action remains the poor relation of many policies applicable to individual economic agents and in particular incentive schemes. Measures are dispersed within geographical areas. There are arrangements for collective action but they are still underdeveloped. A second challenge relates to research and the criteria it highlights for guiding the development of technological models: strictly technical and economic criteria should be supplemented by hedonic factors not just in agriculture but in the domain of infrastructures, urbanisation, forestry, etc.

21. The materialisation of technological innovation: inventing mixed technological models

Innovation will first have to cover technological models. The years of economic growth and industrialisation that followed the Second World War promoted technologies which were optimised only in terms of output performance and production of added value. But today a field or a fishing boat must provide foodstuffs but also a feature in a landscape, a forest must produce timber but also recreational sites, a city must allow external savings because of the proximity of activities but is also a living environment and an urban landscape which is the subject of demand. Technological models have to be devised, then, which are optimised in terms of both added value and hedonic value.

Farmers in France have developed production systems which are optimised in terms of added value, through reduced costs, and in terms of conservation of the environment through reduced inputs (Alard, Bénanger, Journet, 2002). Massive inputs of chemicals from outside the system have been eliminated by reactivating economies which are internal to the system (seaside use of animal fertilizers of their own production, nitrogen production by leguminous fodder crops as supplements to grasses, etc.). It has to be said that farmers have been comparatively prompt to change and to realise that there is not just one objective involved, unlike the research sector where many workers still strive to achieve technological performance regardless of its social utility.

Here is a first rallying point for the future: government needs to be able to set its scientists precise objectives extending beyond the boundaries of their usual area of research in order to take account of multifunctionality, which should be the guiding principle for many economic activities.

22. The materialisation of geographical areas and collective action

A number of policies are still applied at the scale of economic agents and are slow to consider the broader geographic dimension of amenities. Yet this dimension is fundamental in several respects.
Collectively supplied amenities: a number of amenities are provided by a combination of economic agents. The quality of a living environment, a landscape or even a resource like water is dependent on the actions of multiple agents. Sometimes all of these agents without exception must commit themselves if the amenity is to be successfully conserved. For example, the landscape made up of rice-growing terraces in Japan, known as tanadas, cannot be sustained without the commitment of all the owners because the water flows from one terrace to another and if any one terrace is not properly maintained all those downstream of it are under threat. A collective initiative must be put in place. The most striking example of ill-adapted policies is that of agri-environmental measures in Europe which are applied at the scale of agricultural holdings or even of agricultural plots whereas the challenge is geographically a much wider one (the management of water courses, watersheds, landscapes, sensitive natural areas, etc.).

Enhancement of the tourist value of a range of amenities: many ordinary amenities are not enough on their own to draw visitors. However, by joining them up in a network they can make up a big enough ‘volume of amenities’ to attract tourists: there is a threshold effect here which must be taken into account by network creation policies. These may be linear networks such as tourist routes or paths linking disparate amenities or area networks such as France’s Regional Nature Reserves: a locality’s amenities are packaged by setting up an ad-hoc structure and a label for the geographical area. Absent such collective actions, whether on a regional basis or not, some amenities will remain on the sidelines and will be inoperative as factors of regional development.

The essential input from those who exploit the presence of amenities: some amenities are exploited by economic agents who contribute nothing to their provision. The case of Vulcana in the centre of France is particularly instructive. ‘Europe’s volcano park’, as Vulcana styles itself, was set up in the heart of the ‘pays’ mountain range, made up of at least 75 extinct volcanoes. It now receives more than 500,000 visitors a year, visitors who, once they have been around the park, are tempted to rush up the surrounding volcanoes. But nothing has been provided to accommodate these visitors and the landowners are faced with an influx of people whose secondary effects (damage to paths, waste) they are left to manage for nothing in return: Vulcana exploits the presence of amenities without redistributing profits to those who provide them, in particular the landowners and volcano management organisations. It seems essential in such cases to provide redistributive mechanisms.

Enhancing the value of an amenity through a range of services: in the same case, it seems that while politicians were active in setting up this park, they failed to set up a range of services which would have optimised the economic outfall from this structure for the locality. Putting in place a range of recreational activities and structures for visitors to meet demand would help keep visitors in the area whereas, as things stand, this is just transient tourism which boosts the park’s income but gives little impetus to the local economy.

All of this shows that it is essential to provide collective, local mechanisms; a major challenge which is not given adequate consideration by a neoclassical economic approach still based on market coordination and on methodological individualism,
which are inappropriate here. Policy improvement is less a matter of developing new ways to evaluate environmental assets and calculate the utility of economic agents than a search for collective incentives for action and coordination within localities.

23. Enhancing the value of the locality: an opportunity to seize... and resources to do so

Beyond coordination among actors in terms of the provision of amenities and their economic exploitation, there lies a final challenge for a locality which is the overall exploitation of the value and the image of the locality embodied in those amenities.

First, the presence of rural amenities is a decisive criterion in the location choices of households and firms alike. Rural localities see new opportunities for their development if they can conserve and enhance such assets and target actions at populations and firms which are potentially mobile. These include working people looking to enjoy rural amenities on a daily basis whether they work in the city or not, or non-workers whose residential mobility, across Europe, is determined by the search for sunny climes and also by a growing attraction to areas with plentiful amenities. Local policies should be implemented to provide a range of factors combining amenities such as a well-conserved living environment and scenery with services adapted to each target population (public or private services for young children or teenagers, leisure services, medical services).

As for firms, certain factors weigh increasingly in favour of movement to rural areas, in particular increased urban environmental costs, traffic congestion costs, the development of new information technologies, and the fact that the cost of transporting goods is increasingly determined by handling costs regardless of the distance travelled.

It is not just the presence of amenities that is used to attract business creators and leaders, an argument to which they are often personally receptive, but the possibility of using the image of these amenities to enhance the value of their own products: the presence of amenities may indeed endow local products with an 'extrinsic quality', giving them extra value in the eyes of consumers, provided that labels or other mechanisms are introduced to certify the existence of a linkage between the product, the locality and the amenities to which it is home. In a rationale of balanced regional development, government must support the introduction of such certifying instruments by concentrating its action on localities with no other comparative advantages than the amenities they are home to.

24. The materialisation of socio-institutional innovation in the face of regional challenges

If there are needs for local coordination among the actors involved with amenities as providers, beneficiaries or agents of their market development, the challenge facing public policymakers is to promote inventiveness and back initiatives for concerted collective action capable of fulfilling these needs for coordination. Here are several examples each addressing a specific challenge.
An initiative to provide amenities through redistribution of profits derived from enhanced market value

Yufuin-cho is a spa whose amenities are to be found in the combination of rural landscape, hot springs and the local life style. The colours of the paddy fields after harvesting are the result of the traditional agricultural practices of Kakeboshi and Warakozumi, practices which contribute largely to the landscape amenities of this locality in winter. After harvesting the rice, the growers hang the stalks out to dry (Kakeboshi) for ten days before threshing. The rice straw is then stacked in the paddy fields to dry naturally (Warakozumi) for a few months. During this period straw is sold to farmers for fodder or bedding for livestock and the remainder is composted and worked back into the paddy fields. In response to the concerns of tourists and of inhabitants aware of the importance of the natural scenery in the conservation of all of the local amenities, the local actors got together to finance measures to conserve the Kakeboshi and Warakozumi landscapes by supporting farmers who buy naturally dried rice straw made into stacks by the method of Warakozumi. Yufuin-Cho city council, the tourist association and the spa hotel union all contribute to the funding of these measures as part of a collective initiative.

Initiatives bringing together rural and urban dwellers as providers and beneficiaries of amenities

Tanada are paddy fields laid out in a step-like pattern on steep mountain slopes. To retain water, the terraces must be perfectly flat and ringed by a dike built of stones or mud. Today their numbers are dwindling rapidly but the attachment of the Japanese to rice growing, to traditional landscapes and to Tanada in particular has given rise to initiatives designed to conserve them. A highly original arrangement has been introduced in twenty towns and villages. Farmers lend their Tanada to the local council, which proposes to city dwellers to come and work them for US $240–400 per year for the rental of 30–150 m² of terrace. They benefit from the advice of farmers and cultivate the Tanada for their own profit, thereby ensuring they are conserved. The local council organises festivals and other events for transplanting the rice, weeding, harvesting, etc., allowing the farmers and city dwellers to become better acquainted.

This arrangement is highly original and brings together the providers of rural amenities and urban beneficiaries: this promotes a form of closeness, making it easier for each group to appreciate the constraints and aspirations of the other.

Initiatives for setting up networks and local development

France’s Regional Nature Reserves are the medium through which amenities are formed into a network which achieves national and even international prominence through the awarding of a label. Most of the financing of the reserves comes from outside their boundaries, which in itself is a mechanism for remunerating the locality for the amenities it provides free-of-charge to visitors from elsewhere. A similar arrangement has been introduced in Luxembourg where Haute-Sûre Lake supplies drinking water for some two-thirds of the country’s population and provides amenities related to the natural environment, landscapes, forests, flora and fauna, and architectural and cultural
heritage. A reserve has been created and endowed with a budget paid for by the local
councils and also by various ministries which thus provide external contributions (Dichter, 1997).

Concerted management of amenities: initiatives for multi-actor dialogue and
assessment

Natural forests are the primary source of rural amenities in Australia for their
recreational and conservation values. Serious disagreement has arisen over the last 40
years about how they should be managed. The Ministry for Primary Industries and
Energy has therefore tried to strike a balance between local economic development and
the conservation of characteristic regional amenities. To do this, the government has
relied on the regional forest agreement process and on social assessment.

The forest agreement process is a mechanism whereby the federal government and the
state governments concerned can reach consensus on the management and long-term
use of forests in a given region: these agreements provide guarantees both on
conservation and on access to resources and their use, thereby promoting increased
investment, the development of industry and job creation in rural Australia. These
effects are due in particular to the 'social assessment' carried out as part of the regional
forest agreement process, which optimises and evaluates the impact of decisions on the
interested parties and on local communities. In this context, detailed information is
collected about the social and biophysical environment, the history of an area and its
response to change, current problems, political and social structures, attitudes, socio-
psychological conditions, the vitality of communities, etc. This information is then used
to evaluate the probable effects of any particular action which may affect groups within
the community and to determine how to manage them. Techniques are employed to
make it easier for interest groups and the community to become involved before any
decisions are taken. By participating in the planning process all of the actors better
understand what is at stake in the discussions and the agreement, and so the community
is more willing to embrace the resulting agreement. At the same time, the social
assessment enables governments to target aid at those categories which are affected by
the agreement.

It is a matter in this instance, then, of reaching agreement in order to ensure collective
management and to find the best compromise between the development of economic
activities and the conservation of amenities subjected to irreversible change. Notice that
the public authorities retain the right to take decisions alone specifically because they
represent a general interest which overrides purely local interests.

25. Innovating in support of collective initiatives

It seems that none of these initiatives can be generalised as they stand: each is adapted
to the needs of a group, a locality, and an amenity, and each is an innovation in itself.
So what is this last point on innovation about? About developing standardised
procedures to propose to local actors looking for support in their approach or about the
'development of invention-accompanying policies by the actors of a locality, of their
own mechanisms for consultation and action?
The second option seems far preferable to us since the procedures proposed by the authorities, and often imposed as a condition for granting finance, enjoy varying fortunes. A flagrant illustration is the Sea Development Scheme, a procedure proposed by the French government to bring actors together to coordinate management of the coastal zone: of some 15 procedures under examination, only one scheme has been signed up to by the participants whereas alongside this a large number of informal agreements have been entered into as a result of consultation by actors who have devised their own procedures, rules for dialogue and modes of action (Beuret & Trêhet, 2001). In OECD countries as a whole, many land protection associations have emerged (Steinbick, 1987), which are collective action arrangements set up by farmers to conserve the resource they work and the amenities their land is home to.

The job of government is to accompany these initiatives without strapping them in a procedural straitjacket which would change their nature and then to acknowledge the agreements which have arisen from them, even if this entails revising legislation, just so long as they are in the general interest. Australia provides a quite exemplary case of this type of policy as its agro-environmental policy is based entirely on landcare groups set up in the 1970s by farmers seeking to combat salinisation together. These groups multiplied and diversified their land protection activities to the management of rural amenities: today, one farmer in three belongs to such a group and government has encouraged this approach by setting up a specific policy which is flexible and unobtrusive enough to allow the participants to continue to invent their own action schemes and mechanisms for optimising the linkage between the benefits of their actions and the constraints they impose.

For government it is less a matter of intervening than of accompanying and facilitating, not so much about arbitration as mediation, not so much about legislating as translating proposals into rules, organisations and projects. It is a question of innovating as to the stance government takes toward collective actions developed by local actors and the tools needed to identify and support such actions. This is the subject of our current research.

Conclusion

As globalisation sets in, localities are now in competition with each other to attract and develop economic activities. What comparative advantages do rural areas have? Amenities are often the only source of comparative advantage for isolated rural areas in the ever broader competition they are up against. Allowing such areas to hold on to those amenities by taking advantage of their value is therefore a major issue.

To do this, public authorities will first have to move beyond the perception of an environment or of ‘amenities-as-problems’ for which policies are designed essentially in reaction to threats and conflicts or to prevent risks; they will have to introduce a positive approach to managing nature and heritage as a whole, an approach involving not just the guardians of our ecological and cultural heritage but also local populations.
anxious to go on living ‘on home ground’, to appreciate, enhance and promote what is still, after all, their own heritage even if it is also ultimately the heritage of an entire country. Rather than being a problem, the environment and amenities are capital assets, a point which has been and all too often still is overlooked by the authorities. Viewed in this way, amenities can be a significant source of employment and of direct and indirect profit. A recent study reports that for one job created in France’s regional nature reserves, where the amenities are ‘officially licensed’, as it were, six times as many jobs are created by the induction effect in the localities in question; it would seem then that public money invested in this type of policy generates far more jobs than the so-called employment policies. A similar study in the United States has shown that for every dollar spent directly on nature reserves, between 1.8 and 2.8 dollars were added in takings as indirect profits for the areas concerned.

The issue is no longer about what is at stake but about how to implement more relevant and effective policies than the current ones. The major challenge ahead is how to set up collective arrangements which can restore market coordination between the providers and beneficiaries of amenities, with or without government mediation, and also ensure non-market coordination among all the actors involved with the amenities locally. Such initiatives are constantly being invented and tested out by local actors: it is for the authorities to work out what stand to take and what would be suitable instruments for financing and supporting these local initiatives so as to increase their number, their scope and their ambition.

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Evaluating the Effectiveness of Land-Use Planning Policies in Rapidly Growing High-Amenity Communities in the Rocky Mountain States

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Abstract. Rapid growth in rural high-amenity communities has led to a fear of uncontrolled development that could destroy the very amenities that attracted residents to these areas in the first place. This phenomenon has been particularly intense in the Rocky Mountain West region of the United States. Growing concern over population increases and subsequent development has prompted many rural communities to manage growth through various land-use planning techniques more often seen in urban areas. In this study we examine definitions of amenities, whether residents of high-amenity communities feel population growth threatens those amenities, and the perceived effectiveness of twenty-one land-use planning techniques on the preservation of quality of life factors. We conducted in-depth interviews and surveyed local residents versed in land-use planning issues in five rural, high amenity counties in the central and northern Rocky Mountains. We found natural environment and social factors were the most valued amenity attributes in the communities, and that respondents were very concerned about the negative impacts that population growth has caused to date. Survey results indicate that the most effective land-use planning techniques involved comprehensive plans, zoning and the purchase of property or development rights, while the least effective techniques involved forms of taxation or levies, special assessment districts, and development permit restrictions. We found very little difference between community responses or between responses for city and county personnel. We found no difference in responses between job categories. Our results indicate that there is general consensus between and within the study communities on the effectiveness of land-use planning techniques.

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Introduction

The last thirty years has seen a reverse trend of migration in the United States. During most of the twentieth century people migrated from rural areas to urban centers, searching for greater economic and employment opportunities (Long and Natuzzi, 1998). Starting in the 1960s, however, people began moving back to rural areas (Johnson, 1998). This turnaround migration has been fueled in part by a desire for natural amenities (outdoor recreation, open space, scenery) and a greater sense of community. Counties with amenity-driven recreation economies were the fastest growing types of rural counties in the 1990s (Johnson, 1998). The turnaround migration phenomenon has been especially intense in the Rocky Mountain West region, with high amenity rural communities having the highest growth rate of all counties during the early 1990s (Shumway and Davis, 1996).

The growth in amenity rich rural counties causes a rapid restructuring away from resource extraction economies to tourist based, consumptive economies where land use and the consequences of growth become issues of debate and controversy (Smith and Krammich, 2000). Rural in-migration to high amenity communities increases the demand for housing and supporting development, often leading to a substantial decrease in open space, scenic vistas, and recreational opportunities, as well as degrading air and water quality (Ringholz, 1996). As the population of rural communities continues to grow, new development threatens to degrade the very attributes that originally attracted people (Cromartie, 1995).

Land-use planning is often seen as an effective means for dealing with growth and development in an effort to preserve natural amenities (Elmendorf and Luloff, 1999). Land use planners generally act as non-partisan arbitrators within a community and attempt to develop policies and plans that direct growth for the benefit of everyone (Jacobs, 1995). Some of the

land-use planning tools developed by planners include vision statements, general management plans, zoning ordinances, cluster housing requirements, and purchase and transfer of development rights. Land-use planning techniques have frequently been applied to urban areas, but in more recent years rural communities, especially those with high amenity values and rapid growth, have begun to use more complex planning tools. Because land-use planning has been largely an urban and suburban effort, most of the research examining its effectiveness has focused on these areas. Very little research has been done on the effectiveness of planning in rural communities (Smuture, 1998).

In the summer of 2002, we conducted in-depth interviews and administered a survey to selected respondents in five rapidly growing rural, high amenity counties in the Rocky Mountain West to determine the effectiveness of twenty-one land-use planning techniques.

Literature review

We draw upon the literature in three interrelated areas to set the context for our research. We look first at the literature on rural community growth and amenity related in-migration to examine population growth trends in the Rocky Mountain West. Secondly, we review literature on the loss of natural and social amenities that can result from a rapidly increasing population. Lastly, we explore research on the effectiveness of land-use planning policies for preserving amenity values in communities faced with increasing populations.

Rural community growth and amenity-related in-migration

During the first six decades of the twentieth century, population in rural communities exhibited a pattern of decline as people moved to urban settings in search of economic and employment opportunities (Tauber, 1972). At the end of the 1960s and through the 1970s, however, rural areas experienced an increase in population as people became disillusioned with
urban life and joined the back-to-the-land movement (Jacob, 1997). The urban to rural population movement has fluctuated in intensity over the last thirty years, but studies indicate a continued and increasing flow of people into rural areas (Johnson, 1998; Long and Nucci, 1998). Further, rural communities with high amenity values, such as open space, outdoor recreation opportunities and a pleasant community atmosphere, have experienced a continuously high population influx (Johnson, 1998). Counties with amenity based recreation economies continued to be the fastest growing rural counties through the 1990s (Beale, 1998).

Some of the highest rates of in-migration to rural areas have occurred in the Rocky Mountain West region (Riebsame et al., 1997). Over 60 percent of the counties in this region grew faster than the national average in the 1990s (Beyers and Nelson, 2000) and many of the rural counties are gaining population faster than the urban areas (Theobald, 2000). In particular, high amenity rural counties in the Mountain West region experienced the highest rates of population growth of all counties in the region during the first half of the 1990s (Shumway and Davis, 1996). The rapid population growth in many high amenity communities has resulted in economic activities usually associated with urban areas and social relations more typical of rural areas, what some researchers term an 'exurban' society (Duane, 1999; Maestas et al., 2001).

Amenity driven migration

Researchers argue that the underlying forces of the urban to rural migration have shifted from economic factors to the search for natural amenity factors such as open space, scenery, and outdoor recreation (Dubbink, 1984). The Economic Research Service of the U.S. Department of Agriculture has created a natural amenities index based on three classes of physical factors: topography, climate, and water area. Rural communities that scored high on the amenity index grew by as much as 120 percent while those ranking low on the index grew by only one percent (McGranahan, 1999). Surveys of new residents in counties with high levels of amenities found that factors such as scenery, environmental quality, pace of life, outdoor recreation and climate were more important reasons for relocation than job opportunity or cost of living (Rudzitis, 1999). Rapid population growth has also been correlated with proximity to wilderness, with surveyed residents citing the access of wilderness as important (Rudzitis and Johansen, 1991). Beyers and Nelson (2000) found that migrants to rural communities were attracted to social amenity values such as perceived safety, small town feel, and community involvement as well as to natural amenities.

A number of factors have allowed people to pursue the enhanced quality of life brought about by natural amenities. The economic basis of many rural communities has changed from resource extraction industries to a more diversified base emphasizing service industries, particularly those connected with tourism and retirement communities (Shumway, 1997). Improved transportation and electronic connectivity such as faxes, cellular phones and the Internet make living and working in rural areas easier (Levin, 2002). The increased equity gains from stocks have allowed a number of baby-boom retirees and dot-com business employees to move to rural areas as well (Duane, 1999).

Population growth trends in the United States and the current population demographics in high amenity communities indicate that the growth trends in rural areas will continue. The number of Americans reaching retirement age will significantly increase in the next decade, and based on the results of a Gallup poll of retirees, a majority of them would like to settle in a small town or rural area (Fetto, 1999). Additionally, Cromartie (1995) reports that mountain communities have a relatively young population. This built-in growth momentum in rural communities will likely result in increased populations.
Loss of natural and social amenities

The current period of growth in high amenity rural communities has been marked by the conversion of ranch, agriculture and wild lands to exurban development (Knight, 2002; Riebsame et al, 1996). The extent of land use change due to population growth in rural areas of the Mountain West is greater than in urban areas because of the dispersed nature of the exurban development (Sullins et al, 2002). To satisfy the demand for exurban home sites, large farms and other rural tracts are being divided into smaller, two- to forty-acre tracts (Nelson and Ducker, 1990). In Colorado, for example, 110,000 hectares of agricultural land were converted to commercial and residential development every year between 1992 and 1997 (Obermann et al, 2000). In Montana, ranchland and farmland has become more valuable for development than agriculture. Farmers generally can afford to pay only $2,500 an acre if they want to make a profit from farming, but the same property can sell for many times more than that based on potential development value (Witkowsky, 2000).

Rapidly increasing housing and development infrastructure have been shown to cause numerous environmental problems. Exurban development in valley bottoms and near ski areas is reducing biodiversity, causing habitat fragmentation and destruction, and resulting in an increase in interactions between humans and large carnivores (Hansen et al, 2002; Maestas et al, 2001). Booth (2002) found that the loss of ungulates such as elk and mule deer and carnivores such as grizzlies and wolves diminishes both the intrinsic value of the natural systems as well as the draw for tourists. He reports that the valley bottom development responsible for reduction in mammalian species is also causing reduction in riparian habitat. A reduction in riparian habitat and increased construction of septic systems can lead to the degradation of water quality. Smutney (1998) found a positive correlation between population growth and water pollution.

In addition to environmental degradation, rapid development in rural areas is creating social problems such as increased crime, lack of affordable housing and infrastructure deficiencies (Smutney, 1998). Cromartie (1995) reports that rising property values in rapidly growing tourist towns is forcing local workers to move to less expensive communities and commute to work, causing traffic congestion, more road building, air pollution and financial stress for outlying communities that must house the commuting population. This grow also spurred an energetic debate on how to plan for future growth while preserving working lands and promoting a tourist industry.

The great challenge to the future health of high amenity rural communities will be to foster growth that is socially beneficial and environmentally neutral. The most environmentally benign development is that which preserves the greatest amount of land, especially land adjacent to preserved wilderness areas (Cromartie, 1995). However, controlling the amount of land available for development may result in social costs such as increased densities leading to congestion, or in higher priced housing (Rowley, 2001). The challenge for rural communities is to find a balanced approach to growth management.

Land-use planning policy

Land-use planning and regulation such as comprehensive plans and zoning ordinances were initially used to protect the health, safety and quality of life in urban centers (Platt, 1995). As rural communities have faced increasing growth, land-use planning has been used in an attempt to slow growth and preserve open lands, and thereby have positive impacts on the social characteristics of a community (Elmendorf and Luoff, 1999). Much of the research on growth control or management policies in urban and suburban areas conclude that these policies are not effective in reducing population, but that some policies are effective in supporting development.
that is more environmentally compatible. Logan and Zhou (1989) found that growth controls did not affect population growth rates in suburban areas nationwide, largely because enforcement was lacking in most cases. In a study of three California communities, Warner and Molotch (2000) found that growth controls had not been effective in slowing population growth, but had directed development in ways that enhanced environmental quality and social equity.

Many studies have examined the effectiveness of land-use planning in urban areas (Garkovich, 1982; Lemon, 1993; Logan and Zhou, 1989), but few have looked systematically at the success of land-use planning techniques in rural areas (King and Harris, 1989; Smutny, 1998). Those studies that have examined land-use planning in rural areas conclude that the policies have been largely unsuccessful in controlling growth and development. In a study examining land cover in a rural watershed in Michigan, Erikson (1995) concluded that local land-use plans were mostly ineffective in protecting forestlands. Beyers and Nelson (2000) studied rural communities in the Rocky Mountain West and concluded that these areas were not well equipped to deal with the rapid changes impacting their communities. One possible reason for the difficulty in applying effective land-use planning policies is that local rural planning agencies tend to be understaffed and overwhelmed by development pressures. Despite these studies, land-use planning techniques continue to be one of the most commonly recommended tools for protecting rural community character and open space (Arendt, 1999; Daniels, 2000).

The goals of this study were to examine the effectiveness of land-use planning tools and techniques on the preservation of natural and social amenities in five rapidly growing communities in the Rocky Mountains. We interviewed and surveyed knowledgeable community members to determine their opinions on amenities, population growth, and land-use planning techniques used to manage growth and development in their city or county. We compared responses between the study communities, by city and county, and by separating respondents into employment categories with the expectation that people working for the development industry, for example, may have different responses from people working in environmental preservation or from elected officials.

Research Methods

Field research was conducted in the following five non-metropolitan counties in the central and northern Rocky Mountain States: Blaine County, Idaho; Gallatin County, Montana; Summit County, Colorado; Summit County, Utah; and Teton County, Wyoming (Figure 1). These counties have all experienced substantial population growth in the past few decades, ranging from a 34 percent to 92 percent increase in population between 1990-2000, and between 58 percent and 241 percent in the period 1980-2000. The counties were selected by using U.S. Census data to determine which non-metropolitan county with high amenity values in each of the five central and northern Rocky Mountain States had experienced the most population growth in the past twenty years (1980-2000). In addition, we analyzed an amenity index developed by the U.S. Department of Agriculture (McGannahan, 1999)¹, and the final selected counties combined the highest rate of population growth and the highest scores on the amenity index. We excluded non-metropolitan counties that experienced significant population growth due to non-amenity factors such as the construction of an industrial or prison facility.

Blaine County, Idaho

Blaine County is located in South Central Idaho, on the eastern side of the Sawtooth Mountains. The Wood River Valley, with the cities of Ketchum, Hailey, Bellevue, and Sun

¹The index measures six attributes of three primary amenity factors: (1) climate; (2) topographical variation; and (3) presence of natural water features. Thus, the index only attempts to measure natural environment-related
Valley, lies in the center of the county surrounded by the Sawtooth and Challis National Forests to the north and sagebrush and lava dry-lands managed by the BLM to the south. In total, more than 81 percent of the 2,645 square mile county is public lands. The Big Wood River runs through the heart of the Wood River Valley. The variation in topography and geology create a natural environment that varies from high alpine to mountain desert. The climate is fairly mild with 15 inches of average precipitation and average summer and winter high temperatures of 78 and 23 degrees respectively.

Like many mountain areas, Blaine County was first populated by miners in the early 1860s. The first permanent settlers, however, were farmers who arrived in 1879. Mining brought the first population boom to the area, but a parallel economic force starting in the 1880s was the raising and shipping of sheep. In the early 1900s, Ketchum was one of the largest sheep shipping centers in the United States. Despite the agricultural success of the region, by the 1910s, the mining industry and the Blaine County population were in decline. Less than 3,800 people remained by 1930.

In 1936, the construction of Sun Valley Resort, the first destination ski resort in the United States, brought a new influx of residents to the county. It also brought Hollywood celebrities and fame to this rural county. For the next 35 years, the population of Blaine County fluctuated between 5,200 and 5,800 residents. Renowned for many years as a winter recreation destination, in 1970 a year-round recreation market was created with the opening of Elkhorn Resort. Summer, once a slow time of year, became popular for kayaking, river rafting, hiking, golf, fishing, and more. The population of Blaine County increased rapidly with this new economic prosperity.

Between 1980 and 2000, the population of Blaine County increased by 92 percent from 9,841 to 18,991. In the same time period, the number of jobs in retail trade has doubled. Service industry jobs increased by 160%, and finance, insurance and real estate jobs increased by over 20%. Concurrently, the number of jobs in the farming industry has decreased by 32%. Between 1992 and 1997, the total amount of land in farms decreased by 19 percent and as of 1997 constituted 12 percent of land in the county (USDA 1997). The number of full time farms, the average farm size, and the market value of farm products also decreased during the 1990s. All signs point to an economic shift in Blaine County from traditional extraction industry to an economy based on tourism and real estate sales. However, the agricultural heritage is a powerful cultural force in the county, is still the economic livelihood for many landowners, and contributes indirectly to the tourist economy by providing a rural atmosphere and protecting open spaces.

**Gallatin County, Montana**

Gallatin County is located on the headwaters of the Missouri River in southern Montana at the northwest corner of Yellowstone National Park. The county covers 2,606 square miles of mountain lands varying in topography and climate from temperate river valleys to snow-capped peaks and open ranch lands. Nearly half of all the land in Gallatin County is under public ownership in the form of Gallatin National Forest, Yellowstone National Park, BLM, and state lands. The climate of the county reflects four true seasons with time of year and elevation affecting temperature and precipitation. The average high temperature is 32 degrees in winter and 75 degrees in the summer. The county receives an average of 34 inches of precipitation annually.

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attributes of amenities, and does not consider other factors that comprise the amenities a community may offer, such as attractive architecture, small town atmosphere, etc.
The first European visitors to Gallatin County were fur trappers in search of beaver pelts in the late 1700s. The Gallatin Valley was described by Lewis and Clark in 1805 and 1806 during their journey across the country, but it was not until gold was discovered in the 1860s that a more permanent population became established. Many miners who followed the Bozeman Trail in search of gold returned to Gallatin Valley to take up farming and ranching. In 1864, these settlers established the town of Bozeman, the county seat.

Unlike many other mountain communities, Gallatin County did not suffer as severely from the boom and bust cycles of a mining economy. Because of the strong base in agriculture, both ranching and farming, the population of Gallatin County has grown steadily over the last century. As Bozeman and the county in general have become more popular for those seeking outdoor recreation and a small town atmosphere, the rate of population growth has also steadily increased. Between 1980 and 2000, the population grew from 42,865 to 67,831, an increase of 58 percent.

Gallatin County is now home to two world-class resorts, Bridger Bowl Ski and Snow, and Big Sky Ski and Summer Resort. Bridger Bowl opened in the late 1950s and Big Sky first opened for skiing in 1973. Both resorts continue to expand their ski terrain and summer recreation possibilities. In addition to these resorts, the city of Bozeman is well known for its outdoor recreation opportunities including fly fishing, hunting, hiking, camping, and boating, and close proximity to Yellowstone National Park.

Although the market for recreational tourism is expanding in Gallatin County, the agricultural sector still holds a prominent economic position. Over 45 percent of the county is considered farmland, an increase from 1992 of nine percent, and the market value of farm products has increased slightly from 1992 (USDA 2003). However, the number of full time farms decreased by 12 percent between 1992 and 1997, and the percent of the population employed by agriculture, forestry, fisheries and mining decreased from seven to four percent during the 1990s. It could be argued that the agricultural industry in Gallatin County, rather than declining, is becoming centralized in larger agricultural corporations. However, along with these changes in the agricultural sector have come large increases in the service sector (from 39% to 52% of all employed persons). The entertainment and recreation service sector alone increased by 12 percent. This shows that while agriculture is still a force to be reckoned with, the economic influence of tourism is on the rise. At the same time, the rate of subdivision of agricultural parcels into home sites has accelerated greatly in the past two decades.

**Summit County, Colorado**

Summit County, Colorado is located in the heart of the Colorado Rockies. The county encompasses 608 square miles of rugged mountain terrain and fertile valleys. The climate is governed by an alpine setting with high temperatures in the summer averaging 73 degrees and winter highs averaging 29 degrees. The annual precipitation averages 16 inches. More than 81 percent of Summit County is public land comprised of the White River National Forest, Bureau of Land Management (BLM) property, and a State Wildlife Area. The Blue River, Snake River, and Ten-Mile Creek all feed Summit County’s two large reservoirs, Lake Dillon and Green Mountain.

Summit County first received national attention in 1859 when gold and silver were discovered in the surrounding hills. The town of Breckenridge was established in 1860 as a mining town and a short time later was established as the county seat. Like many other communities, Summit County and the Town of Breckenridge suffered the boom and bust cycles of a mining economy. Many miners ended up as farmers and ranchers especially in the southern
portion of the county known as the Lower Blue Basin. Mining declined through the first half of the 1900s and by the 1950s, the population of Summit County had decreased to just over 1,000 residents and Breckenridge had shrunk to less than 300 individuals.

In 1961, a Kansas lumber company opened the Breckenridge Ski Area and a new boom era began. Transportation improvements contributed to the revitalization of Breckenridge and Summit County. The Eisenhower Tunnel on Interstate 70 was completed in 1973, considerably reducing the driving time from Denver to Breckenridge. In the 1980s, additional summer and winter recreational activities increased in popularity. As skiing, other recreation, and tourism in general grew, so did the resident population. Between 1980 and 2000, the population of Summit County increased by 166 percent, from 8,848 to 23,584. The population of Breckenridge is now 2,408 permanent residents.

Approximately one hour west of Denver, Summit County residents enjoy both the mountain wilderness and the convenience of nearby metropolitan services. Summit County is now home to four world-class ski resorts, Arapahoe Basin, Breckenridge Ski Area, Copper Mountain, and Keystone Resort which offer year-round recreational opportunities. The Dillon and Green Mountain Reservoirs offer opportunities for boating, fishing, and motorized water sports.

As the tourist economy has grown, the reliance on a traditional, natural resource based economy has declined. Resource extraction now comprises less than 0.3 percent of the total employment of Summit County. The agricultural industry which is almost evenly split between livestock and crop production has also declined. In 1997, eight percent of the county was considered farmland, a decrease of 10 percent from 1992. While the percentage of the population working in agriculture has remained a constant two percent over the last 10 years, the number of jobs in entertainment and recreational services has increased from five percent to over 30 percent of the workforce. This shift from a traditional resource economy to an economy largely based on tourism and services has become a common trend in high amenity communities of the Rocky Mountains.

**Summit County, Utah**

Summit County, Utah, was formed in 1854 from existing Green River and Great Salt Lake Counties. The County contains 1,871 square miles and is located in the northeastern portion of Utah. The Uintah Mountains dominate the eastern portion of the county which also encompasses a large portion of the Wasatch-Cache National Forest. The western section is a high back-valley of the Wasatch Mountains and is largely in private ownership. Overall, 45 percent of the county is owned by federal and state agencies. The average temperatures and precipitation vary from west to east. In Park City, the largest city in the county, average summer and winter high temperatures are 86 and 36 degrees respectively. Average annual precipitation is 16 inches.

The first permanent settlers arrived in Summit County in the late 1840s to work the coal mines in the western portion of the county and to begin ranching in the eastern portion. During the 1860s, tons of coal were hauled from Coalville to Salt Lake City and mining became the chief economic industry of the county. However, coal mining was soon overshadowed by the discovery of silver, lead, and zinc in the Wasatch Mountains in the 1870s and Park City became the center for economic activity in the county. Mining continued in the western part of the county until the 1950s and then steadily declined. Park City struggled economically for several decades until the area’s rugged terrain and high annual snowfall led to its rebirth as a winter
recreation center. Summit County currently encompasses six incorporated towns including Park City, the largest with a population of 7,371 (U.S. Census Bureau 2000).

As the winter recreation became popular in late 1970s and 1980s, Summit County experienced explosive population growth. In the last twenty years, the population has grown by 241 percent, increasing from 8,714 in 1980 to 29,736 in 2000. In large part, this population growth is due to the creation and expansion of the Deer Valley ski area and Park West resort, both located in Park City. Noted for its clean air and scenic vistas in addition to its resort atmosphere, western Summit County has also become a bedroom community to Salt Lake City with commuters willing to travel 35 miles or more for the benefits of living in a small, high amenity community.

The economy of western Summit County is now largely based on the travel and tourism industry. Selected to host the winter 2002 Olympics, Summit County has expanded the recreation opportunities within Park City with the construction of a new winter sports park and expansion of the existing ski areas as well as creating new facilities for concerts, conferences, and other public venues. Along with the publicity generated by the winter Olympics, these new facilities are expected to increase Summit County and Park City’s reputation as an international resort destination.

The western portion of Summit County has experienced rapid development as a bedroom community to Salt Lake City and an economic transition to a service-based economy. Throughout the county, jobs based in agriculture and other natural resources have declined in the 1990s, while jobs in the service sector have increased sharply. Between 1990 and 2000, the number of jobs in entertainment and recreation services increased by over 12 percent. The eastern section of the county, however, has remained largely agricultural. Over half a million acres, or 49 percent of the total land within the county, are farmlands. Livestock production is the dominate industry, contributing 94 percent of the market value of farm products (U.S. Department of Agriculture 1997). Although the amount of land in agriculture and the average market value per farm have increased from 1992 to 1997, there is concern that the development occurring in western Summit County will spill over the mountains and begin to erode this culturally and economically important pastoral lifestyle.

Teton County, Wyoming

Teton County is located in the northwest corner of Wyoming, bounded by the state of Idaho to the west and Yellowstone National Park to the north. Teton County contains portions of Yellowstone National Park, the Targhee National Forest, the Bridger-Teton National Forest, and all of Grand Teton National Park. Federal and State owned land accounts for more than 97 percent of the county land area. Teton County encompasses just over 4,000 square miles of picturesque valleys and rugged mountains. The average high temperatures are 79 degrees in summer and 29 degrees in winter with an average annual rainfall of 20 inches. The most widely known features of Teton County are the Teton Mountains, named the Grand, Middle and South Teton. This cluster of peaks draws millions of people with its breathtaking views of alpine magnificence. The Teton Mountains form the western edge of Jackson Hole, a broad valley rimmed on all sides by mountain ranges.

The Jackson Hole valley is approximately 80 miles long and 15 miles wide and encompasses national forest, Grand Teton National Park, and the National Elk Refuge. Jackson Hole also contains most of Teton County’s private lands. Originally named for fur trapper Davey Jackson in the early 1800s, Jackson Hole was a relatively unsettled crossroads for mountain men until the first permanent residents arrived in 1883. The valley was settled mainly
by ranching families. As the beef industry expanded, the large elk herd that roamed the valley began competing with cattle for hay supplies. In 1910, the federal government bought 24,600 acres north of the town of Jackson to keep the elk herd from starving in the winter and to help preserve the ranching lifestyle in Jackson Hole. This area is now known as the National Elk Refuge and supports over 7,000 elk during the winter.

Tourism began early in Jackson Hole as ranchers supplemented their income by “dude ranching.” The valley became known for big game hunting and ranchers often took guests and offered guide services. Jackson Hole quickly became a vacation destination for fishermen, horseback riders and hunters, and tourism began to replace cattle ranching as the county’s economic base. Tourism was further facilitated when the Teton Mountains were designated as a national monument 1929 and additional acreage was added in 1950 to create Grand Teton National Park. In 1967, Teton County joined the ranks of destination ski and summer resorts with the opening of Jackson Hole Mountain Resort.

Teton County is now known internationally as a tourist destination, attracting outdoor enthusiasts in both the summer and winter. The resident population has also increased dramatically in the past twenty years. In 1980, Teton County had a population of 9,355 permanent residents. By 2000 that number had increased to 18,251 for a 95 percent growth rate over 20 years. The town of Jackson, the only incorporated town in the county, has a population of 8,657 or 47.5 percent of the total population for Teton County (U.S. Census Bureau 2000).

The economy of Teton County has shifted away from the traditional ranching lifestyle. Ranching and farming now account for less than one percent of the economic make-up of the county, while jobs in the entertainment and recreation services sector have increased from three percent to 24 percent of total county jobs (U.S. Census Bureau 2000). Between 1992 and 1997, the area of land in farms dropped by 16 percent to just over 50,000 acres. While this number is dropping, ranches and farms still comprise a large percentage of the privately owned lands throughout the county, and the rural ranching character of Teton County and the Town of Jackson is seen as vitally important. Residents and tourists value working ranch lands for their contribution to the “Old West” character of the county and for the scenic views, open space, and wildlife habitat that ranches provide.

Study Community Similarities and Differences

Historically, Blaine County, Summit County, Utah, and Summit County, Colorado were settled as mining communities and suffered from boom and bust economic and population cycles. Gallatin County was settled both by miners and farmers, whereas Teton County was settled by ranching families. This agricultural history largely spared these counties from a widely functioning economic and population base through most of the past century. Although all of the counties turned to farming and ranching as mining declined, the influence of agriculture has declined in Teton County, Blaine County, and Summit County, Colorado. The amount of land in agriculture has increased in Gallatin County and Summit County, Utah, but both of these counties are also experiencing the increase in recreation and service based industries.

Three other categories of differences are evident between these counties: amount of public land, proximity to a large city, and the overall rate of growth. Teton County has the most public land at 97 percent. Summit County, Colorado and Blaine County have a similar amount of public land at about 80 percent, and Gallatin County and Summit County, Utah have the least public land at 50 percent and 45 percent respectively. In terms of proximity to a large city, Summit County, Utah and Summit County, Colorado are close enough to the capitol of their respective states (both large metropolitan areas of more than a million people) to make a daily
commute to urban employment feasible. The other three counties are all more than 100 miles from their capitals or any other large city. Finally, in terms of population growth, all the counties have experienced rapid population increases in the last twenty years. Summit County, Utah has grown most rapidly at 241 percent, followed by Summit County, Colorado at 166 percent. Teton County and Blaine County have grown at similar rates of 95 and 92 percent respectively. Of the five study counties, Gallatin has grown the least rapidly at 52 percent.

Despite these differences, all five counties have much in common. First and most obviously, they are all located geographically in the central and northern Rocky Mountain West. They have topography ranging from mountain peaks to alpine valleys and meadows, and they have a similar climate in terms of temperature and rainfall. The one exception being Gallatin County, which is slightly warmer and has more than twice as much rainfall as any of the other counties. This may help account for the greater continuing emphasis on agriculture. All of the counties contain meandering streams and rivers and are dotted with lakes. All contain one or more major destination ski resorts. Additionally, all of our study counties have more social and cultural amenities than are normally found in a rural area. These natural, recreational, social and cultural amenities have attracted thousands of residents and tourists to these counties.

Data collection

We conducted interviews and administered surveys in 2002 to a total of 77 individuals throughout the five study counties. The interviews were semi-structured and addressed topic areas relating to community quality-of-life, how population growth had affected the communities, and how effective land-use planning tools and techniques were in responding to population growth. The surveys listed twenty-one land-use planning techniques and asked the respondents to rate the effectiveness of the techniques on a Likert Scale of one to four, with one representing "not at all effective" and four representing "extremely effective." If the respondents had no knowledge of a particular policy or felt that it was not applicable to their community, they could circle five for "no opinion." We administered the survey in person for a 100% response rate. Personal administration of the survey also allowed the respondents to ask for clarification if they did not know the definition of certain techniques included on the survey.

We selected interview and survey respondents in each county through a combination of purposive and snowballing sampling techniques (Singleton and Straits, 1999). Respondents were initially chosen purposively by examining secondary data sources and were people who were well informed on the research topic based on their work or community experience. We used the snowball technique to identify additional respondents based on knowledge gained from the initial surveys and from exploring the community. Respondents held community positions such as, but not limited to, community planners, planning commissioners, zoning board members, elected officials, local environmental group representatives, journalists, attorneys, and developers. Prior to conducting the interviews and surveys, we informed the respondents of the purpose of the study and we guaranteed a level of anonymity.

The interviews ranged in length from 30 minutes to 4 hours, and were recorded with a digital voice recorder. After the files were downloaded to a notebook computer, they were transcribed verbatim into Microsoft Word files and then imported into the QSR NVivo qualitative analysis program. NVivo was used to code each interview question into groupings and themes that emerged from the interview transcriptions.

We entered the survey results into SPSS version 10.0 data analysis software and used this program to run descriptive statistics and one-way analysis of variance (ANOVA) tests.
We also collected and examined land use planning documents for each of the five counties and many of the cities and towns contained within the counties to provide context and help explain our interview and survey results.

**Data analysis and findings**

**Quality of life characteristics**

Before we asked respondents from our five study communities about whether the rapid population growth they had experienced had impacted the quality of life in their communities, we first asked them what elements of quality of life were most important to them. The overwhelming response in all of the communities centered around the outdoor beauty of the area. Community members commented on a number of elements of the outdoor environment including the general natural setting or natural resources of the community, scenic beauty, wildlife, and open spaces like public and agricultural lands.

A number of respondents spoke generally on the benefits of the natural environment. A Gallatin County rancher put it simply:

I think what attracts people here is the natural resources, the wildlife, and the beauty.

This comment was elaborated on by a planner from Teton County:

The mountains are right there. Whether you’re a river person or a mountain person or just a wildlife viewer, every season has something and the people here really do take advantage of that as part of the culture, obviously kind of the mountain town thing.

A Summit County, Colorado elected official valued both the scenic aspect of wide open spaces and the benefits of a varied natural environment:

I’ve always been partial to the west because of the spatial aspect - the space, the light, the wide ranging panoramas. Also my quality of life is that I look out of my backyard and I see some wetlands and I see some mountains and that’s an intangible quality of life issue.

Other respondents were more specific in their discussion of what types of natural amenities were available and important in their communities. A Gallatin County planner talked about the availability and benefits of public lands:

A lot of really attractive public land to recreate on, Gallatin National Forest, and the rivers and streams in the valleys, beautiful scenery, clean air, clean water, lots of wildlife. You know, all the kind of environmental amenities that make this place so special.

A Summit County, Colorado elected official felt that not only was the natural environment a large contributor to quality of life, but that public lands provided the benefit of permanent open space:

I think the first thing would be the environment. It’s beautiful, a beautiful place to live. Eighty percent of Summit County is public lands so it’s kind of what I would refer to as a permanent open space.

A planner from Summit County, Utah agreed that open spaces and the opportunities they provided for recreation were important contributors to quality of life:

It’s been the same thing. It’s been consistent. Open space and access to recreational opportunities.

A number of respondents also pointed out the importance of agricultural lands as a contributor to quality of life. A environmental group representative from Summit County, Colorado talked about the importance of agricultural lands in enhancing the natural setting:

In the northern part of the county the preservation of those ranch lands is very important. They provide wonderful scenic vistas.

A Blaine County elected official also spoke about the importance of agriculture, saying:

The biggest thing is to maintain agricultural open space. You know, keep the agricultural business operating.
A Gallatin County environmental group representative commented that the greatest value of maintaining agriculture was not the economic contributions it made to the community, but the scenic, open space and cultural attributes that it contributed:

I think that its importance is more related to its impact on keeping the land open and pretty than it is producing goods and services—potatoes, grains, or alfalfa. I think that their contribution is related to the quality of life and the scenic values. People really love to see a combine out there and some cows on the land. The economic impact of agriculture on the county is minuscule as far as production goes, but culturally it is really important and again as far as maintaining those scenic values and other amenities it is really important.

Along with these comments, residents from all our study communities voiced a great appreciation for the recreational opportunities that were associated with such a large and varied natural setting. One environmental group representative from Gallatin County admitted that these amenities are important enough to make some sacrifice economically:

In many cases it comes at an economic cost and people are willing to make that sacrifice to have the best hunting, fishing, climbing, hiking, skiing, floating opportunities in the country— it is really remarkable.

A Summit County, Colorado environmental group representative commented on recreation and natural beauty in the same breath:

We have enormous opportunities for outdoor recreational activities in the mountains. All kinds of snow activities, all kinds of summer activities, hiking and biking and so forth. The major constituency here are people who moved here because of the scenic beauty and the recreation activities.

When asked what made up quality of life in her community, a Blaine County planner focused exclusively on recreation:

The outdoor recreation opportunities. Everything from skiing, snowboarding, cross-country skiing, in the winter and then all kinds of summer recreation opportunities - hiking, backpacking, fly fishing, parasailing - a lot of great summer opportunities.
In a third category of responses, residents cited the benefits of cultural amenities that could be found in their communities. Cultural amenities ranged from community facilities such as parks, recreation centers, and golf courses to arts, theater, and volunteer opportunities. One developer from Summit County, Colorado stated:

We get excellent facilities here. That’s one thing they’ve really done a good job of. We’ve got a fabulous golf course and recreation center, an ice rink. We’ve got parks and open space. I mean there are more activities in the summer than there is in the wintertime now.

Added a elected official from Blaine County:

In comparison to other areas in the west and places that I’ve visited or lived, there is more to do here, it’s phenomenal, I mean, from symphonies to live plays with Bruce Willis and magnificent actors that we have, the Actor’s Guild type things that we have here, to cowboys and sheep shearing or whatever. I mean there is a full gamut. If you’re bored here there’s something wrong. You’re not stepping out the door. It really is amazing.

Overall, respondents commented on a combination of quality of life factors that originally drew them or now hold them to these communities. It is the unique combination of a phenomenal natural setting, a large range of recreational opportunities, a small town atmosphere, and cultural amenities that are generally found in larger urban areas that make these communities such desirable places to live.

Changes to quality of life characteristics

After discussing what factors contributed to the quality of life in the study communities, we asked respondents if the population growth seen in recent years had led to impacts — either positive or negative — on community quality of life. We asked respondents to consider both biophysical and socio-cultural amenities. While some respondents cited positive effects of growth such as an increase in urban amenities and services, the majority of respondents indicated that the increasing number of people in their communities and the associated increases in development had negatively affected some aspect of quality of life. Amenities that were negatively affected included: the natural environment and scenic vistas, recreation, traffic, the small town feel, and cost of living.

The most widely cited negative impact of growth was on the natural environment, including open spaces, wildlife, scenic vistas, and agricultural lands. An environmental group representative from Summit County, Colorado feared that increased development had begun to erode the qualities that drew people to the area:

Yeah you can build more second homes and condos and all the rest, but if you don’t preserve the natural beauty of this place you know, you’re gonna blow it. You’re gonna kill that goose that lays the golden egg.

Many of the respondents focused on the loss of wildlife. An environmental group representative from Gallatin County replied:

We’ve definitely had impacts on the natural resource side. The prime calving areas, the prime winter range are getting impacted very heavily as are the riparian areas, so from a natural resource standpoint a lot of negative impact from the growth.

Added another environmental group representative from the same county:

I mean you put one house in the middle of an elk calving area and it is gone. And that’s the kind of stuff we’re seeing. Or one house cutting off a riparian corridor for migration or travel. So it’s more not the numbers but where. If it was located in incorporated areas, it would be no big deal. But in the absence of land use planning statewide or county wide, it’s a pretty grim prospect right now.

An environmental group representative from Teton County described a similar situation:

I do think we’re seriously degrading the very reason people come here, which is for the wild lands and the wildlife. We’re having a tremendous impact on the wildlife on our private lands which in turn affects the wildlife on our public lands because they tend to winter on private lands and so if they don’t have a place to winter, we’re losing those populations and we’re not going to see them in the summer in our public lands.

A journalist from Teton County focused specifically on the loss of scenery:
Some of the scenery has been altered, significantly and forever.

Added a planner from Summit County, Colorado:

The second [impact] would be kind of the visual impacts of growth, seeing the houses all of a sudden sprouting up on the hillsides and just more development occurring everywhere.

Others focused on the impacts to agricultural lands. When asked if population growth had negative or positive effects on quality of life, an environmental group representative from Gallatin County spoke of the loss of wilderness, but also of the troubles in the agricultural community:

We are seeing more impacts on the agricultural community in terms of its sustainability over time because we’ve had so many subdivisions plunked out in the middle of agricultural lands. Probably inappropriately placed and planned. So we are seeing some producers that are having trouble with conflicts and just saying it’s not worth it and throwing in the towel.

An elected official from Summit County, Colorado agreed:

The way of life has totally changed and hopefully I think I’ve managed to change with it, but, you know, there’s really no real agriculture in this community anymore.

Another elected official from the same county expressed a similar sentiment:

Well, it is a shell. They have conservation trusts and yeah you can drive by that field and feel good about agriculture but if you know the actual situation it’s not real agriculture. And I mean I could go show you field after field that’s been built on and you know subdivided into 40 acre tracts.

A number of respondents from Gallatin County agreed that natural resources had been heavily impacted by development, but they felt that the impact came more from the type of development than from the amount. One environmental group representative commented on the sprawling nature of development:

The rate of growth is somewhat alarming, but even more importantly, the pattern of growth and recognizing that people are moving into the areas that biologists are.telling us are the most critical habitats in the region: the elk winter range, the riparian corridors, right up to the edge of the national forests and national parks. What I see happening is sort of the hardening of the boundaries of our public lands with low density sprawl, basically.

Another Gallatin County environmental group representative commented on the visual and ecological impact of sprawling development:

What I don’t like is the ecological footprint per household, some of the houses that are outside of town. Where you’ve got a road soaring up against the side of a mountain, that you can see from halfway across the valley, to make room for one house that sits on the very top, that you can see all the time from anywhere around, for one family, that is an awful lot of visual impact. Especially when it sits right in the middle of wildlife habitat. To me that is the biggest problem, the out-of-town sprawl of big houses that occupy a lot of land with big roads leading up to them.

Added a developer from Summit County, Colorado:

We lost some open space that would have been nice to have maintained and if we had grown a little slower we would have accomplished some that and we haven’t… if we’d been a little more proactive earlier on we would have lowered some densities in some critical view corridors.

One business person from Gallatin County felt that the impacts to the natural environment were more a perceived problem than a real problem and felt that wildlife was as not strongly affected as many people thought.

I think that it’s impossible to not have an impact on them (wildlife). When you have an area that is really as rural as this still is, it’s perceived as having this huge impact, but I’ve been here at dusk and seen deer run across through our yard right here in this office. So wildlife in some senses does adapt.

Many respondents felt that as the natural environment was being negatively affected by increased population and development, outdoor recreation in these areas was also negatively affected. Some of the respondents commented on the crowding of recreational areas. One elected official from Gallatin County stated:
And when you go out on the river there are a lot more people. We never used to run into anybody and now there is always someone at your fishing hole or something like that.

An environmental group representative from Teton County agreed, saying:

I think just simply the sheer numbers of people. We’re impacting the trails. We’ve got a lot more trails in the park and in the forest. We’ve got a lot more demand for them.

Other respondents commented on the increase in user conflicts between different recreational groups. A social services agency representative from Teton County replied:

You know there’s more user days and more conflicts arising over recreational uses. I don’t know if they’re really quantified, but it’s certainly increased quite a bit in the last decade.

Added an environmental group representative from Gallatin County:

We are starting to see user conflicts in terms of, and I don’t want to say traditional, but there’s a lot of folks who enjoy motorized use of the trail and when there weren’t a lot of people around it wasn’t a big deal. They separated themselves, but now we’re seeing more conflicts between motorized users and non-motorized users on the forest lands.

In addition to the negative impacts on the natural environment and subsequent crowding of recreational areas, many respondents focused on the increased crowding of local roadways, increased traffic and less available parking. A Summit County, Colorado planner stated:

I would say really traffic is probably the most significant impact directly associated with population growth. A lot more congestion on the road...(and) we have parking problems.

When asked about the positive or negative impacts of growth, a planner from Blaine County stated:

Definitely negative. Mostly witnessed I think on the highway every day. Especially Bellevue out to Ketchum. A lot of people are employed in Ketchum and Sun Valley that work, that live in Twin Falls. So, most noticeably in the traffic.

An environmental group representative from Summit County, Utah, agreed, saying:

In some cases we don’t like it (growth) too much. The traffic is far, far greater than it was when I came here ten years ago.

In addition to increased traffic and commute times, many residents felt that the general quality of their small town atmosphere was being eroded by increases in population and development. A realtor from Summit County, Utah spoke most clearly on the loss of community saying:

In Park City, if somebody is driving in a car and they did something stupid, you wouldn’t do anything rude. You wouldn’t honk your horn because chances are that it’s a friend of yours, or that it’s the wife of a friend of yours. Well, that’s changed because you get people who come in from larger communities, larger cities and they don’t have a sense of community and they don’t have a sense that the person that you’re doing something rude to today may be that same person that you’re working with on some board or commission. So you lose a lot of the small town atmosphere and small town feel.

A elected official from Blaine County agreed:

We’re losing the sense of community up there. People just don’t live there like they used to. On a ski lift what used to matter was how the snow was, and what kind of skier you were. Now the talk on a chair lift is completely different. It’s about calling your broker or who’s been to what party or something. It is a very different change.

An attorney from Summit County, Colorado felt that community identity was eroding because many people could no longer afford to live there:

We risk losing our identity because of the lack of affordable housing and risk losing the core of the working class of the community because of pricing those people out of the market.
Respondents from all of our study communities felt that the increases in population and development were driving up the cost of living resulting in severe affordable housing problems. A planner from Blaine County stated:

That’s another impact of the growth that I failed to mention, which is huge. Which is the lack of affordable housing. Now even in Bellevue the homes are no longer affordable to the average working person.

According to a number of respondents, the lack of affordable housing is causing a displacement of the labor force into outlying communities. A Gallatin County planner said:

I think probably the number one negative is the cost of living, cost of homes going up. And if you have a home and you capitalize on that, great, but a lot of people are getting pushed out of this downtown area.

More specifically, a Summit County, Utah elected official added:

The downside has to do with cost of real estate. I lived in a 2,400 square foot Victorian house that I bought for $105,000 12 years ago that’s now worth close to $400,000. So we’re a community that teachers can’t afford to live here and the cops can’t afford to live here.

Although the majority of residents identified negative effects of increased population and development, many felt that the population increases had also contributed positively to their quality of life. These residents cited an increase in urban amenities and services as a contributor to better life in their communities. A Summit County, Colorado environmental group representative commented:

On the plus side is the accessibility to many more services. We have fine grocery stores. We have this library. We have a lot of public and commercial facilities that didn’t exist back in the ’60s and early ’70s when we were here a lot. And so that’s a change and it makes life more convenient for us.

A Teton County environmental group representative added:

I think there have been those positive and negatives. We have a lot of people coming in here who are retired or who are bringing their money from elsewhere and I do think that has a positive impact in some ways. We’ve got a really great library. We have a music festival that goes every night in the summer and gives some free concerts. We have a great museum. We’re about to build a huge arts facility. In a small town like this we certainly have some important cultural amenities.

A long time Summit County, Colorado resident and elected official commented on the improvements to basic services such as sewer and roads:

I think it’s really improved the level of our infrastructure, water, sewer - just the availability of various services. When I moved up here, it wasn’t uncommon to see houses with outhouses and dirt roads, no paved roads. That’s totally changed with the increase in population. So actually we’ve got a higher quality of a community as far as the infrastructure is concerned.

An elected official from Summit County, Utah agreed, saying:

The positive things probably have to do with better infrastructure, much better schools, and the taxpayers being willing to bond for permanent land preservation. We have 91 non-profits in our town and people are very supportive of that kind of thing, which is great.

Still other respondents felt that although some changes - both positive and negative - had occurred, overall their community quality of life had not changed much and that it was still better than most other places. A Gallatin County environmental group representative stated:

I think it has been remarkably good to date. When I go fishing there are more people out there but it hasn’t reached a level yet where it’s annoying. You can see a lot more people on the trails than there used to be, but it’s not to a level where it’s gotten over the top.

An attorney from Summit County, Colorado agreed:

I think that when you compare it to other places, it’s more positive. There are still places you can move where you can have the quality of life and you don’t have the services, if that’s what you want. But those are very remote places in Colorado. I think most people who move here want to be a little closer to the Front Range and expect a little more congestion. So I’d say on balance it’s still plus.

2The five study counties have some of the highest rural housing prices in the U.S. Year 2000 Median Housing Prices in the five counties ranged from a low of $161,000 in Gallatin County, Montana to a high of $555,000 in Teton County, Wyoming.
A Teton County planner summed up the positive and negative impacts by saying:

No matter where you come from, despite the negative impacts of fifteen years of constant growth, the quality of life still is superior to anything that anybody's ever experienced before. And only the people who were here fifteen years ago know how good it was fifteen years ago. People who came here two years ago think, "God this place is a whole lot better than Syracuse."

One Summit County, Colorado journalist attributed the lack of significant impacts, either positive or negative, to a proactive community:

I think it’s not impacts, but I think it’s that the government in this town has been really proactive in trying to get ahead of that bull, so that there won’t be negative impacts. They’ve addressed the things like open space, TDRs (transfer of development rights), and affordable housing.

A Gallatin County planner agreed that a proactive community helps balance impacts and is very important in directing quality growth:

I think we’re kind of on a fine line. We’re in danger of killing the golden goose, so to speak, but I think that’s why there is really broad base support for planning in the city of Bozeman and among a lot of the county residents too, and that is to preserve the quality of life while we accommodate the growth, and understanding the world demographics and national economy and social conditions in highly urbanized areas that are driving people to places like this. Understanding that and not trying to stop it, but trying to manage it in a way that leaves this place better for it rather than worse for it. A lot of what we do here is making sure that the type of growth and development is a credit to the community instead of a discredit.

Overall, the majority of respondents felt that their communities experienced a very high quality of life. Many felt that increases in population and development had begun to erode important qualities like the natural environment, recreational opportunities, and the small town atmosphere, and was also causing increased traffic congestion and a higher cost of living, which led to affordable housing problems. Some of these negative impacts were balanced by the increased benefits of growth such as more cultural and social amenities and better infrastructure. Some respondents felt that while their communities were experiencing both negative and positive impacts, in general the quality of life had not changed significantly. Some respondents attributed this balancing of impacts to a proactive community that attempted to manage growth.

Survey results

We ran descriptive statistics on each land-use planning technique to determine the percentage response for the four effectiveness ratings (Table 1). From this we were also able to determine which techniques were judged most and least effective.

When responses from all the communities were combined, the five land-use planning techniques that ranked highest under “extremely effective” were outright purchase of property, zoning for environmentally sensitive areas, land trusts, zoning in general, and purchase of development rights. When we grouped the responses for “somewhat effective” with the responses for “extremely effective,” we found only one difference in the top five techniques. Purchase of development rights was bumped out by comprehensive plan policies.

In general, the top five techniques involve comprehensive plans and zoning ordinances, and purchase of property or development rights. Each of the five study communities implements these techniques in some form. All of the communities have comprehensive plans and some form of zoning ordinances. Zoning ordinances vary from county-wide Euclidian zoning in Summit County, Utah, Blaine County, and Teton County, to zoning districts with Euclidian zoning in Gallatin County, and performance-based zoning in one city in Summit County, Colorado. Although the types of zoning vary, each community feels that zoning in general is effective. Each county also has at least one technique to facilitate the purchase of property or development rights, whether it is a land trust, an open space bond, or a purchase of development rights program.
The five least effective techniques or the highest ratings under “not at all effective” were real estate transfer tax, special assessment district, development of permit restrictions, development of impact fees, and performance-based zoning. When we combined the categories “not at all effective” and “not very effective” the least effective ranked technique was development of impact fees, followed by density bonuses, performance-based zoning\(^1\), preferential tax for agricultural land, and special assessment district. Combining these effectiveness categories changed two of the techniques in the bottom five. Rather than debate over which techniques ranked as the five least effective, it is more important to note that none of seven techniques mentioned were thought to be effective.

We believe it is also important to note that some of the techniques deemed ineffective have not been tried in all the communities. None of the counties had implemented development impact fees (growth caps). Real estate transfer taxes and performance based zoning\(^1\) are found only in Summit County, Colorado. Only Gallatin County has county and city development impact fees. Cities within Teton County can impose development impact fees, but under state law the county can not. All of the counties had some provision for density bonuses, but the programs and implementation varied widely and all counties had some type of special assessment district. No county had preferential taxes for agricultural lands at the county level.

**Community response patterns**

Next we ran a one-way analysis of variance (ANOVA) test which grouped responses by community to determine if there were any significant differences between the study communities (Table 2). Of the twenty-one land-use planning techniques included on the survey, the study communities differed significantly on only five: comprehensive plan policy, zoning regulations, agricultural/open space zoning, zoning for protection of environmentally sensitive areas, and design review. All of the communities ranked comprehensive plan policy as at least “somewhat effective.” Summit County, Colorado and Summit County, Utah both ranked comprehensive plan policy evenly between “somewhat” and “extremely effective,” while the other three communities ranked it lower. Teton County had the lowest ranking for zoning regulations exactly equal to “somewhat effective” while the other four communities ranked zoning regulations in the middle of “somewhat” and “extremely effective.” Responses differed more widely between communities for agricultural/open space zoning with Teton County ranking between “not very” and “somewhat effective” and Gallatin County ranking between “somewhat” and “extremely effective.” Zoning for the protection of environmentally sensitive areas also had almost a one point difference with Summit County, Colorado ranking near “extremely effective,” and Teton County ranking just under “somewhat effective.” Finally, Summit County, Colorado, Teton County, and Blaine County ranked design review as more than “somewhat effective” with Summit County, Utah just below “somewhat effective,” and Gallatin County ranked it just above “not very effective.”

Overall, there was no significant difference between study community responses on most land-use techniques. Where there was a difference, it was consistently less than one point on the effectiveness scale and can probably be explained by the differences in how the land-use planning technique was applied. For example, our review of county land use plans and zoning regulations indicates that Teton County, Wyoming may have a lower score on the effectiveness of agricultural/open space zoning because the minimum lot size of 35 acres is likely too small to support viable agricultural operations. Conversely, Gallatin County, Montana respondents ranked

\(^1\) Performance-based zoning allows most uses in most areas, where uses are determined by a set of performance
this technique more effective, possibly because the minimum lot size there for agriculture in some areas of the county is a much larger 160 acres.

Response patterns by city and county

Cities and towns within rural counties can face growth pressures similar to urban areas and consequently find different land-use techniques more or less effective than the surrounding county. For this reason, we used a one-way ANOVA analysis to compare the response patterns of county planning personnel with the responses of city planning personnel across our study communities (Table 3). County personnel included county planners, county planning commissioners, and elected county officials. City personnel included city planners, city planning commissioners, and elected city officials. Only two land-use techniques differed significantly in effectiveness ratings between county and city personnel. County personnel rated development permit restrictions and density bonuses as "somewhat effective" while city personnel rated both techniques between "not very" and "somewhat effective." Overall, there was very little difference in response patterns between county and city personnel.

Response patterns across job categories

Since a respondent’s position in the community may have influenced their answers, we grouped them into categories based on their profession and compared the mean responses of each group using a one-way ANOVA analysis (Table 4). The job categories were planners, planning commissioners, elected officials, members of the development community, members of the preservation community, and journalists. Members of the development community included occupational positions such as realtors, builders, architects and bankers, and members of the preservation community included employees of land trusts and non-profit environmental groups.

If a respondent held jobs in more than one category, their responses were counted in each applicable group. Interestingly, there were no significant differences in responses between job categories for any of the land-use techniques.

Discussion

Rapid growth in rural high amenity communities has led to a fear of unchecked development that could destroy the very essence of why people are attracted to rural areas (Marcouiller, 1997). Our interview results confirm that individuals active in and knowledgeable about the land use planning process in our five study communities believe that population growth has caused substantial negative impacts to community quality of life. This growing concern has spurred many rural communities to manage growth through various land-use planning techniques more often seen in urban areas (Garkovich, 1982). The trend of population growth and subsequent attempts at growth management has been continuous for the past fifteen to twenty years, yet little research has been conducted on the techniques employed by rural communities and the effectiveness of those techniques in preserving community quality of life. We hope to contribute insight to this topic with our study of rural Rocky Mountain communities.

King and Harris (1989) performed a study similar to ours of rapidly growing rural communities on the East Coast. Their goal was to document the growth management techniques used in these areas and to provide a preliminary analysis of the effectiveness of the techniques. We have continued with a similar theme in Rocky Mountain communities but are focused more on the second goal of determining which techniques actually work to manage growth and preserve quality of life. King and Harris (1989) found that most of their study communities primarily used zoning, subdivision regulations, and comprehensive plans to manage growth. While all of our study communities found these techniques to be at least somewhat effective,
they have also experimented with a number of other techniques and have found that the outright purchase of land or development rights to be extremely effective in most cases.

In conducting surveys in our study communities to determine which techniques worked best, we learned the converse as well. There was general agreement between communities that a third of the techniques on our survey were not very effective. Two of these techniques – real estate transfer taxes and development impact fees – involved new taxes or the levying of fees, which can present communities with two major obstacles in implementation. The first is whether state legislation allows the technique to be used and the second is achieving voter approval. In some cases it may be these limitations rather than the technique itself that lessens the effectiveness. Furthermore, all of the least effective techniques except special assessment districts involve the manipulation of market forces which can be difficult to do effectively and can have unintended consequences such as passing on development costs to homeowners and exacerbating affordable housing problems.

Our results also suggest that there is little difference between the effectiveness of land-use planning techniques between communities that face similar growth pressures, nor is there much difference between counties and cities. Most of the difference observed between communities likely arises from how the technique is applied and how well it is supported and enforced. The difference between counties and cities in our study areas may arise because of the more urban-like development pressures found in cities. Cities may have rated development permit restrictions lower because limiting the amount of development within a city often pushes it out into the county where it is less suitable. Density bonuses may not work as well within cities because they are already zoned at higher densities.

We were initially surprised to find no difference between the response patterns across job categories. Gottdiner and Neiman (1981), in their study of factors that influence support for growth management, found that opponents to growth control wanted to limit government control of private property rights while supporters pursued active environmentalism and social services. We felt that these tendencies might be reflected in a person’s career choice. However, Baldessare and Protoph (1982) argue that business attitudes have been over-emphasized, and that community consensus on growth management emerges in areas adversely affected by growth.

Leo et al (1998) agree that a growing source of support for growth management includes environmentalists, business people, and farmers. Our findings support the idea that there is widespread support across job categories in rapidly growing communities. One reason for this unilateral support could be multiple careers held by single respondents. In many cases respondents had current jobs in more than one job category. Other respondents currently had a job in only one category, but had held positions in other categories in the past. This blurring of career history may make the job categories too indistinct to separate out any difference in respondents’ feelings on the effectiveness of land-use planning techniques.

Overall, we found great similarity between responses on the effectiveness of our twenty-one surveyed land-use planning techniques on the preservation of community quality of life. The next step in our project will be to further examine why certain policies are judged more effective than others and how the land-use techniques employed in each community affect specific quality of life factors such as open space, affordable housing, and traffic volumes and patterns. From this we hope to generate recommendations for other rural communities that may be facing rapid growth in the near future.
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TABLE 1: Effectiveness Ratings of Land-use Planning Policies and Techniques: Percent of Respondents

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<th>Land-use policy or technique</th>
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Note: The remaining respondents expressed no opinion.
### TABLE 2 Mean Response Values and Analysis of Variance (ANOVA) Results Comparing Community Response Patterns on Effectiveness Measures of Land Use Planning Policies and Techniques

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Note: Responses were measured on a 4-point scale with values ranging from 1 ("not at all effective") to 4 ("extremely effective").
* Significant at p ≤ 0.05.

### TABLE 3 Mean Response Values and Analysis of Variance (ANOVA) Results Comparing County Personnel with City Personnel Response Patterns on Effectiveness Measures of Land Use Planning Policies and Techniques

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Note: Responses were measured on a 4-point scale with values ranging from 1 ("not at all effective") to 4 ("extremely effective"). City personnel include city planners, city planning commissions, and elected officials. * Significant at p ≤ 0.05.
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Note: Responses were measured on a 4-point scale with values ranging from 1 ("not at all effective") to 4 ("extremely effective").
LANDOWNER ATTITUDES AND PERCEPTIONS TOWARD PLANNING IN NORTHWESTERN WISCONSIN: IMPLICATIONS FOR MANAGING GROWTH AND DEVELOPMENT IN A NATURAL AMENITY-RICH LANDSCAPE

BY DANA A. JENSEN AND DONALD R. FIELD, PH.D.

Like many areas rich in natural resources, the Pine Barrens region spanning five counties in northwestern Wisconsin has experienced rapid rates of housing growth over the past decades, much of this attributed to seasonal residents. In order to manage growth and shape public policy in the Pine Barrens Region, planner and decision-makers require a better understanding of the changing social structure, and how residents' values, attitudes and behaviors translate to managing growth and development. This study demonstrates that both type and duration of residency are related to attitudes toward growth. Further, other characteristics (income, education, local rate of growth) may better explain individual attitudes toward growth and development. This emerging multiplicity of interests suggests a simple planning process may ultimately be unsustainable. Comprehensive planning for future growth and development in this region, as mandated in Wisconsin, may be best achieved and sustained with more inclusive, equitable, and participatory planning techniques.

INTRODUCTION

Rural areas are being rediscovered. The past several decades of migration to rural areas has dramatically altered the rural landscape. Rural in-migration and resultant net population growth alter the social, economic, and ecological fabric of communities. The transformation of rural America, however, is not uniformly realized. Rural areas that are located on the fringe of urban areas capture residents seeking an alternative to urban living. In addition, those rural areas that offer a high concentration of natural amenities, also tend to absorb a disproportionate amount of growth. Those regions offering both proximity to urban areas and an array of natural amenities tend to attract the most prolific rural housing and population growth, including retirees, midlife professionals, commuters, and seasonal homeowners.

Rural residents are beginning to recognize the manifestation of growth on their communities and landscape: rapid rates of new housing construction, conversion of seasonal cabins to
year-round homes, prolific lakefront development, forest fragmentation, and new residents and homes demanding the provision of utilities and services. These physical and financial implications of growth, in effect, begin to compromise many of the attributes of the community that attracted new residents, or retained long-term residents, in the first place. In response to this apparent threat to the “rural character” and often lower taxes than in urban and suburban areas, many rural communities have initiated or considered land use planning. However, the process of planning for rural areas necessarily must include the individual, and often divergent, interests of the landowners and residents. Therefore, rural planning – whether a formalized “planning process” or in the form of incremental decision-making – takes place in a contested environment. To exacerbate the latent conflict inherent in decisions that affect an individual’s use of their land, long term and new residents are often thought to bring significantly different values to the process. As rural areas have become popular places for second and recreational home development, it has been suggested that further conflict between the values and interests of residents and non-residents (seasonal and year-round residents) is imminent.

Considering this apparent “multiplicity of interests,” growth in natural amenity-rich landscapes poses a major challenge for rural land use planning: to better understand this new population, shifting community values, and the environment in which growth takes place in, order to help identify a shared future vision, and adopt a plan and set of strategies to attain that vision. This research addresses the issue of rural, natural amenity led growth from an individual landowner perspective, analyzing how individuals that comprise an amenity rich rural region view community change, growth, and land use planning.

A community planning process considers several elements of a community’s fabric, individually and as they are inter-related. In rural areas, the shifting demographic patterns implicit in growth can affect the ecological and economic terrain. In addition, population and housing growth, particularly that defined by immigration of new residents and seasonal homeowners, may bring about social structural changes. The implications of these new and non-resident landowners may influence the function of politics and decision-making of communities and regions; particularly in rural areas where government is more direct, there is less complexity and bureaucracy in land use decisions, and seasonal (non-resident) landowners have the opportunity to influence local decision making through participation in planning processes and local meetings.

With the advent of growth management efforts across the United States, the support of the public for such policies is called into question. This question is particularly germane in rapidly growing rural areas for several reasons. For instance, on one hand such rural areas are thought to be unaccustomed to land use controls, often associated with strong private property rights values and traditional land use values. On the other hand, these rural areas are undergoing dramatic transformation in terms of the social, economic, ecological structures. Individuals may both directly and indirectly affect the landscape through behavior and participation in civic affairs. Thus, it is crucial to develop a particular understanding of how individual perceptions of community change, attitudes toward specific growth management policies, and preferred scale of land use planning differ, and how these differences, may in turn affect planning and land use decision making in these areas.
This study responds to this need, exploring the implications of the emerging new and seasonal population in the Pine Barrens of northwestern Wisconsin for growth management and land use planning, acknowledging that these factors are highly context dependent. We set forth three broad research questions pertaining to the following aspects of growth management and land use controls. Specifically, we ask how new and long-term, year-round and seasonal residents differ in:

- Views of community change and growth management,
- Attitudes toward private property rights, and
- Support for regional cooperation and preferred level of government control.

To this end, we add to the literature at the intersection of planning, regional science, rural sociology, and natural resources management. Further, these research questions are temporally salient to the ongoing physical and social transformation of the area and the implications for contemporary planning practice.

This paper proceeds as follows. First, we re-cap the story the literature has told over the last few decades of the "rural revival"—cast in the dichotomy between long-term residents and newcomers. We assert that the literature has just begun to look at the new rural cast—seasonal residents, and the real and perceived differences between these recreational homeowners and those that live in rural areas year-round. Our story takes off where others have left off—exploring how both new and old, year-round and seasonal residents differ in terms of their perceptions of community change, support for growth management, and land use planning. We then describe the setting of our study, the rural Pine Barrens Region of northwestern Wisconsin. Through a rigorous survey of the general population in the Pine Barrens, we describe how these groups differ in their concern for community change and level of support for planning. We present the results in the following sequence, how long-term residents and newcomers, seasonal and year-round residents differ in their perceptions of community change, degree of support for growth management, attitudes toward private property rights, desire for intergovernmental cooperation, and preferred scale of governance.

We demonstrate the interrelationships between these variables. Finally, we discuss the implications of our findings in the Pine Barrens for planning thought and practice.

**Dynamics of Natural Amenity Rich Areas: Changing Landscape, Changing Attitudes**

Natural amenity-rich areas are characterized by a diversity of residents. The resultant mix of residents and landowners is comprised of newcomers and long-term residents as well as seasonal landowners and year-round residents.

The existing literature has provided a strong case that long-term residents and newcomers have differences that affect the way local planning and decision-making is carried out. For instance, they suggest that new and traditional residents may have significantly different socio-demographic characteristics: age, educational levels, and attitudes; with new residents often having higher levels of education, income, and valued property (Smith and Kranich 2000, Graber 1974, Nelson 1997). In addition, research has suggested that tension and conflict between traditional and new residents may emerge as a result of the socio-demographic differences and correlated differences in attitudes and values pertaining to growth and community (Blahna 1990, Green, Marcouiller et al. 1996, Healy and Short 1979).
This type of tension can lead to challenges in planning for and managing growth and development, often because there is a real or perceived lack of unification around a common vision for their collective future. This conflict is often attributed to different values and expectations (Shands 1991; Healy and Short 1979), and the formation of social barriers based on their length of residence (Lee 1991). For example, traditional residents may fail to adapt to changing values, or traditional residents might themselves become “outsiders” in the new community, or leave the location altogether (Gold 1985).

The above examples scratch the surface of an extensive social science literature examining this dynamic of new and long-term residents. Similar dynamics between seasonal and year-round residents is considerably more sparsely explored. Although the literature does not address this dynamic explicitly for seasonal and year-round residents, one might expect socioeconomic and attitudinal differences between these groups broadly reflective of those documented between new and long term residents. It is therefore equally important to understand how the diversity created by seasonal and year-round residents may shift community dynamics and decision-making.

Balancing Growth and Change through Planning

In many rural areas experiencing growth, communities have embraced planning in order to attempt to balance retaining an area’s “rural character” with promoting local economic development. Referred to as “growth management” - this application of planning is designed to influence the rate, amount, type, location and costs of growth” (Porter 1997 as cited in Diaz and Green 2001, p. 317) to balance preservation of the rural characteristics with the benefit of growth. “Growth management essentially seeks to balance the benefits of growth with the costs imposed on the environment and the quality of life (Perin 1977, as cited in (Diaz and Green 2001, p. 318).

Currently, many states have legislated broad-based statewide growth management policies. “State governments can adopt policies and grant programs to encourage or require thorough, thoughtful comprehensive planning by counties and communities. The state framework can provide direction and planning grants to help communities to accommodate growth, protect natural resources, and avoid spillovers from one community to the next” (Daniels 1999). Approaches range from strong state oversight and consistency requirements to general guidelines. For example, Oregon’s urban growth boundaries and metropolitan governance are examples of strong state growth regulation. Wisconsin’s Comprehensive Planning legislation is growth management at the other end of the spectrum. This law commonly referred to as “Smart Growth,” simply mandates that every municipality, county, and town make future land use decisions (zoning, subdivision ordinances) on an adopted plan. The legislation requires that plans address nine elements; including agricultural and natural resources, housing, economic development and land use.

Even with state-mandated policies and programs, local landowners continue to affect growth and change in their communities and their region, both via direct interactions or transactions with their land, and through their participation in the democratic process. Rural areas are areas where the sphere of influence of locals on policy-making and implementation are direct and significant – whether it be through serving as a local elected official, on a plan
commission, or as a citizen voting or providing input through a plan-making or policy-setting process.

**Attitudes of Residents toward Planning for Change**

One notion that has emerged is that different groups of local landowners may differ significantly in terms of attitudes, perceptions and beliefs pertaining to growth. The literature provides a solid argument that these differences may be based on the duration of residency or tenure (long term versus newcomers) or their socio-demographic characteristics. An extension of this literature, anecdotal evidence, and continually evolving rural dynamics suggest that the type of landowner (seasonal versus year-round) of residency or tenure, may play as important or more important a role in influencing attitudes toward growth.

**Newcomers and Long Term Residents: The “drawbridge” continues to lift**

Perceptions of community change may be different between newcomers and long-term landowners. "Coming anew to a seemingly pristine rural setting, the new owners may feel that what they see is the way the land has always been, and hence automatically merits preservation. The long-time owners, on the other hand, may remember that a dense forest was once an open field... They tend to have a greater appreciation than the newcomers of the ability of the rural landscape to absorb change and to recover from environmental damage" (Healy and Short 1979).

When compared to residents living in an area long term, newcomers more frequently expressed concern over growth (Cockerham and Blevins 1977). This may be because newcomers are less reliant on local economic development for their livelihood (Healy and Short 1979). In addition, often newcomers “describe themselves as retirees from major metropolitan areas who have seen development ruin the quality of life in their former communities.” (Spain 1993, p. 160). They have “witnessed the effects of unplanned, land consuming growth in suburban settings” and “seek fervently to avoid seeing the process repeated in their new rural settings”(Healy and Short 1979). Newcomers tend to value their new communities for their rural qualities, and do not want to lose this character to development (Dubbink 1984), often valuing the aesthetic character to a greater extent than the ability to derive income from the land (Healy and Short 1979; Dubbink 1984). “Nontraditional landowners often focus entirely on their land’s amenity values and disregard its productivity” (Healy and Sliort 1979).

Recognizing differences in perceptions of community change, this would logically translate into different levels of support for policies to manage growth and development.

Comparisons of attitudes based on resident duration have shown new residents more likely than traditional residents to support environmental controls and land-use planning measures (Blaha 1990; Green, Marcouiller et al. 1996) or historic preservation (Graber 1974). As early as the rural renaissance commenced in the 1970s, Graber observed: "everyone wants to be the last person to move into Georgetown. They want to close the gate after they are in" (Graber 1974, p. 510). This concept evolved in subsequent literature to be called the “drawbridge hypothesis.”
The body of literature exploring the drawbridge syndrome has continued to expand. Cockerham and Blevins's study of Jackson Hole, WY (1977) revealed that newcomers to a community and long-term residents differentially cite growth and lack of land use planning as the most negative aspect of living in a growing, amenity-rich community, with newcomers more frequently expressing concern over growth. The early results of Graber and Cockerham and Blevins are supported by contemporary studies. For example: newcomers in rural northern Wisconsin were more likely to support land use controls than long-term residents (Green, Marcouiller et al. 1990); recent migrants to rural Michigan were more supportive of preservation-oriented policies (Blahna 1990); newcomers to the Chesapeake Bay believed preservation of the Bay to be the most important funding goal for the County, whereas long-term residents of this area prioritized the creation of jobs as a more important funding goal (Spain 1993).

However; other recent studies reveal that the drawbridge syndrome does not always hold up. To the contrary, Smith and Krannich demonstrated that both long-term residents and newcomers ascribed high importance of preserving existing community ways of life. In their study, long-term residents were actually more supportive of preserving existing ways of life (2000). Others have demonstrated new residents were more likely to voice shared environmental concerns (Fortman and Ksel 1990). In the Upper Great Lakes region both long-term residents and recent migrants strongly supported continued growth in rapidly growing counties (Voss 1980). Others have also demonstrated a strong consensus in favor of future population growth among both newcomers and long-term residents (Sofranko and Fliegel 1980; Fliegel, Sofranko et al. 1981). These results suggest less discord within localities, but raise the issue of inconsistency in the literature.

The mechanisms behind divergent attitudes toward controlling growth and development are varied and several. For example, while newcomers are attracted to rural areas for their amenity value and environmental quality, long standing residents may view the land from a utilitarian/economic development perspective (Shannon 1991). Dubbink attributes divergent perspectives on growth management to the differing ways newcomers and long-term residents conceive of “rurality.” He posits that whereas newcomers are drawn to rural areas for the “rural” essence of the area, long-term residents feel this quality is already significantly diminished by the time this in migration begins: “The long-time residents are bewildered by the growth controller’s efforts to save something that they think no longer exists. But the growth controllers, who never experienced the towns when they were smaller, are fiercely protective of the perceived rural qualities of their settlements and determined that further modernity shall not intrude” (Dubbink 1984).

Factors other than the type of duration of residency may certainly influence attitudes toward growth and development. For instance, nature of employment, level of education, and age; with “blue-collar” workers, less than average education, and those over 40 years of age being more resistant to historic preservation (Graber 1974). Other influential factors may include whether individuals are accustomed to land use controls. Often newcomers are more accustomed to land use controls as they come from metropolitan areas, with greater land use control traditions (Cockerham and Blevins 1977; Dubbink 1984). Amount of land owned
may also considerably influence attitudes toward control of land use, with those who own less land demonstrating more favorable attitudes toward local versus individual control (Cockerham and Blevins 1977).

As an aggregate, newcomers are often less concerned about economic development as compared to long-term residents (Smith and Kranich 2000). Newcomers are generally not drawn to an area for economic reasons (Dubbin 1984). They tend to “live outside the local market and wage economy…” and their “fiscal futures are not bound to the town’s” (Dubbin 1984). Similarly, a study in Cape Cod suggested those with the least direct links to the local economy were more likely to support a development moratorium (Bolles 1990).

Spain (1993) characterized newcomers as a “technical, professional and bureaucratic elite” who are “aware of development pressures and their attendant public costs, desirous of escaping the effects of extended urbanization, conscious of their power to restrict entry, and politically committed to protecting their advantage” (Spain 1993, p. 161).

Support for growth management was also linked to amount of land owned, with larger landowners representing more traditional uses, such as ranching, and thus less accepting of land use controls imposed on their property (Cockerham and Blevins 1977). Reason for owning property may significantly influence a resident or landowner’s attitudes toward the changing landscape. Previous studies have demonstrated that newcomers aim to retain the characteristics that brought them to the region, thus favoring growth management to a greater extent than long-term residents. This is rooted in the reasons for owning property. Often citing the natural resource values for relocating to an area, newcomers do not want to see these natural amenity values threatened. This rationale results in the “drawbridge” mentality wherein newcomers desire to preserve the natural amenity values that attracted them to the location initially by keeping others out (Smith and Kranich 2000). Thus, newcomers have been measured as having higher levels of environmental concern (Smith and Kranich 2000).

Other studies have compared attitudes toward growth management among communities based on level of tourism development. One such study demonstrated that communities with higher levels of tourism tended to support future population growth more than those communities less dependent on tourism (Smith and Kranich 1998). It was theorized that these communities with higher percentages of retirees, amenity migrants, or telecommuters were more likely to desire the current rate of growth and development in the community (Smith and Kranich 1998).

Newcomers may be more likely than long-term residents to favor local government control of land use, because newcomers have often come from urban areas with stronger traditions of land use control (Cockerham and Blevins 1977). Those anticipating a loss of local control are generally less likely to support a regional planning effort. At the same time, however, the anticipated positive consequence of regional government as a predictor or support was measured to be more important than the level of provincialism (Bolles 1990).

Seasonal Landowners: Rising or lowering the bridge?

As demonstrated above, the literature examining differences between newcomers and long-term residents is relatively expansive. However, researchers are only beginning to explore the
dynamics between seasonal and year-round residents. Because seasonal residents comprise a significant proportion of the population in rural areas, this dynamic is particularly salient to communities.

Year-round residents are more likely than seasonal homeowners to support economic development activities, whereas seasonal landowners were more likely to support land use planning (Green, Marcouiller et al. 1996). Like newcomers, seasonal residents often seek to preserve the natural qualities that brought them to the area (Cockerham and Blevins 1977). Similarly, a study of homeowners in another rapidly growing Wisconsin county demonstrated that year-round residents were more connected to local business activity and economic growth than seasonal residents were. Thus, seasonal residents were more likely to support growth management (Marcouiller, Green et al. 1996). Property likely represents a lower proportion of the total wealth of seasonal residents - therefore land use controls and growth management are not perceived as threats to the extent that year-round residents might view them.

Building the bridge between rural sociology and planning

This research draws upon, and therefore bridges, two bodies of literature. For years rural sociologists have explored themes of community change and the social structural dynamics in natural amenity rich regions (Graber 1974; Ploch 1978; Schwarzweller 1979; Sofranko and Fliegel 1980; Voss 1980; Fliegel, Sofranko et al. 1981; Rank and Voss 1982; Kramlich and Greider 1984; Blahna 1990; Fortman and Kusel 1990; Green, Marcouiller et al. 1996; Kramlich and Smith 1998; Smith and Kramlich 2000). This literature review illustrates that the planning literature cuts across the same themes, approaching issues of growth and community change and the ever-changing demographics for its practice-based implications. Planners, like rural sociologists above, question the implications of growth and change in rural areas (Nelson and Duiker; Cockerham and Blevins 1977; Healy and Short 1979; Brown, Phillips et al. 1981; Dubbink 1984; King and Harris 1989; Lapping, Daniels et al. 1989; Nelson 1992; Spain 1993; Davis, Nelson et al. 1994; Daniels and Lapping 1996; Howe, McMahon et al. 1997; Smutny 1998; Daniels 1999; Esparza and Carruthers 2000). Their interest goes beyond understanding the social structural dynamics to seeking new tools, methods, and approaches that might be used to grapple with this change and positively impact the development of rural communities and regions.

The question of how individuals perceive community change and the extent to which they support growth management draw upon the questions investigated by rural sociologists seeking to understand changing social structural dynamics through a planning lens, seeking to understand implications for planning in theory and practice.

CASE STUDY: WISCONSIN'S PINE BARRENS REGION

The Changing Pine Barrens Landscape

This research situates the issues of growth and scale of land use planning in the context of the Pine Barrens of northwestern Wisconsin. The Pine Barrens extends about 1,500 square miles, spanning five counties. The area is richly endowed with natural amenities; characterized by abundant forested land and hundreds of lakes. Attractive to seasonal homeowners, retirees, and transplants from the Minneapolis-St. Paul metropolitan area,
human settlement has proliferated throughout the Pine Barrens region (PBR), particularly in forested areas, along lakeshores, and areas adjacent to public lands. Research integrating population and housing census data and land cover in the Pine Barrens has demonstrated an association between housing development, forest cover, and water resources—housing growth largely focused on these natural amenities (Radeloff, Hammer et al. 2001).

In the Pine Barrens, the natural resources discussed above have been a magnet for both population and housing growth. Population in three of the five Barrens counties grew at twice the state growth average of 9.65 percent in the 1990s (Northwest Regional Planning Commission and Wisconsin Department of Natural Resources 2000). The number of housing units is perhaps even more important in terms of impact on the landscape, increasing nearly 50 percent between 1970 and 1990. Seasonal housing units have increased 75 percent in this time period (Northwest Regional Planning Commission and Wisconsin Department of Natural Resources 2000). The landowning population of this area is almost evenly divided between seasonal and year-round residents. The housing growth is largely attributed to “neorural” residents (retirees, seasonal, etc) who may bring different attitudes, perceptions and behaviors regarding managing growth and development, and planning for growth than traditional (long-term, year-round) residents.

Anecdotally, managers report differences between seasonal and year-round landowners as well as new migrants and long-term residents in levels of support on a broad array of planning and natural resource issues (Northwest Regional Planning Commission and Wisconsin Department of Natural Resources 2000).

Characterizing the Changing Rural Landscape

Drawing upon Lapping and Daniels conceptualization of the “two rural America’s,” the PBR captures elements of both “fringe” growth and deep, remote rural America. The PBR’s proximity and ever-expanding access (via local and interstate transportation improvements) to the Twin Cities metropolitan region (as is evidenced by a growing number of commuters to the Cities) suggest it has important characteristics of a rural-urban fringe and the requisite growth pressures as described by Daniels and Lapping (1996): At the same time, the PBR’s history is that of a remote, rural area dependant on natural resources touched by the “rural renaissance” of the 1970s. A documented haven for amenity-seeking vacationers and recreational homeowners, the PBR embodies essential qualities of both “rural Americas” and therefore by traversing this broad terrain, this research provides a particularly relevant case study.

Planning for a Dynamic Landscape

Wisconsin’s cities, villages, counties and towns have the authority to make various land use decisions that ultimately determine how this growth is configured on the landscape—including zoning, development review, and utility extension. Further, with Wisconsin’s Comprehensive Planning legislation passed in 1999, communities throughout the State area required to make land use decisions (zoning, plat approval) consistent with a Comprehensive Plan. The legislation, popularly referred to as “Smart Growth” requires that a community makes decisions consistent with an adopted plan containing each of nine required elements (including Agriculture, Natural and Cultural Resources; Economic Development; Housing; Transportation; and Economic Development) by 2010. The planning process requires and
encourages broad public participation. The state administers a program that provides grants for communities to undertake this planning process. As a result, many communities throughout Wisconsin, including rural towns that might not normally have engaged in such a formal planning process, are undertaking comprehensive planning processes. Several communities in the study area — including towns and counties — have begun writing comprehensive plans to guide their future growth and development. This process necessarily engages the public in a discourse about the future growth and development of communities. With public involvement comes the need to balance a range of interests, values, and goals that are different as the individuals in a community. In communities with perceived or real factions of newcomers and long-term residents; seasonal and year-round residents; this balancing of interests can be challenging for the planners facilitating the process and the local government decision-makers who ultimately implement (or choose not to implement) strategies to manage growth and development.

**RESEARCH PROTOCOL**

**Overview: The landscape scale**

The Pine Barrens region of Wisconsin is an ecologically defined but politically and administratively fragmented landscape. Heralded as ecologically significant for its rare mosaic of ecoregions, this region harbors several threatened and rare species and is noted for its exceptional natural beauty of abundant forested land and myriad lakes. As a result of these amenities and the related growth, the Pine Barrens is a prototypical remote, rural region grappling with balancing the natural amenity induced growth with their preservation. However, there are many unique attributes of this region that make this study unique and salient to local residents, decision-makers, and to an interdisciplinary body of researchers concerned with both the theoretical and practical implications for planning for growth and development.

**Protocol: Examining the “pieces of the puzzle”**

As a phenomenon, growth is observed and quantified at a regional or community scale, however the individual behaviors as precursors to growth and the implications of growth are perhaps most appropriately measured at the parcel level. An understanding of how individuals behave relative to perpetuating growth and likewise how they respond to community change and growth management may better inform local decision-making, especially recognizing the dynamic mixture of participants in land markets in rural areas (Healy and Short 1979). The extent to which local landowners perceive change resulting from growth as a threat to their community, support growth management measures, and the level at which they believe future growth and development should be managed from are crucial questions.

**Methods and Measures**

The data for this study were gathered through a self-administered mail questionnaire directed to adults of households owning improved property that is located within the boundaries of the Pine Barrens within Burnett and Washburn counties, adhering to the boundaries of an ecologically defined landscape, rather than the political and administrative boundaries present. Therefore, the sampling region was matched as precisely as possible to the ecological boundaries of the PBR within Burnett and Washburn Counties (see Clendenning et al. 2004 for more details).
The sample consisted of 422 year-round residents and 378 seasonal residents. Duration of residency/ownership is also analyzed as a categorical variable with respondents owning property in the area for less than twelve years categorized as newcomers and those whose tenure is equal to or exceeding twelve years classified as long-term residents. Seasonal residents were defined as those that reside in the region for less than six months of each year and whose zip code is outside the geographical boundaries of the study area. The distribution of year-round and seasonal households in our sample approximates that of the population.

The population contains approximately 55 percent year-round households and 45 percent seasonal while our sample consists of 53 percent year-round households and 47 percent seasonal (see Clendenning et al. 2004).

The successful implementation of this survey methodology resulted in a response rate of 82.8 percent. Return rates for seasonal residents and year-round residents were comparable, with seasonal residents having a slightly higher response rate of 85.4 percent compared to 80.4 percent for permanent residents (see Clendenning et al. 2004).

The independent variables type and duration were evaluated singularly and interactively to measure relationships with views on growth and development, anticipated consequences of growth management, and preference for level of governance controlling future growth and development. We developed Analysis of Variance (ANOVA) and Chi-square models to analyze the extent to which the responses to each individual item within the broad dependent variable categories are affected by type, duration and the interaction of the two variables.

The ANOVA models were expanded to incorporate several socio-demographic variables: characteristics of individuals including the type of residence, duration of landownership, sex, income, age; and characteristics of their property/location including size in acreage, a binary measure of whether their property was forested, town classification as urban or rural, and rate of growth in the area.

Table 1: Displays the three broad categories of variables. Each of the three has two to seven individual questions from the survey that were measures of facets of the variable.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>SURVEY ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SUBJECTIVE VIEWS OF GROWTH AND DEVELOPMENT</td>
<td></td>
</tr>
<tr>
<td>a. Perceptions of community change</td>
<td>Development in northwestern Wisconsin is causing a loss of its &quot;northwoods character.&quot; (42A) The more this community changes, the happier I am with it as a place to live. (42G) Recreational home development is having a good effect on this community. (51A) New people moving into this area over the past several years are having a bad effect on this community. (51B)</td>
</tr>
<tr>
<td>b. Level of support for policies to manage growth and development</td>
<td>Public policies to manage growth and development are needed to slow down the development in northwestern Wisconsin. (42P)</td>
</tr>
<tr>
<td>2. SUBJECTIVE VIEWS OF PRIVATE PROPERTY RIGHTS</td>
<td>It is acceptable to restrict private property rights in order to protect the environment (42B) Use of private land should be based on what the owner wants rather than being restricted by regulations (42C)</td>
</tr>
<tr>
<td>3. SUPPORT FOR REGIONAL PLANNING SOLUTIONS</td>
<td>a. Support for community cooperation</td>
</tr>
<tr>
<td>b. Preferred level of governance</td>
<td>Which level of government, if any, should have primary responsibility for managing growth and development? Federal, county, state, or individual? (44)</td>
</tr>
</tbody>
</table>
RESULTS AND DISCUSSION

The data suggest that there are some differences between responses to land use controls, planning, and growth management attributed to type and length of residency, but not to the extent that planners and land managers might postulate, and that residents might attest to anecdotally. In addition, while differences do exist in response to certain survey items, overall support for land use planning tools among all respondents is moderate to quite high.

Perceptions of community change

For instance, considering the resident of the Pine Barrens as an aggregate, most of the respondents (67 percent) feel that development is causing a loss of the "northwoods character." At the same time, less than 17 percent of respondents would agree that the more their community changes the happier they are with it as a place to live. Considered together, these results indicate an overall negative perception of community change spurred by development. However, respondents do not overwhelmingly cite recreational home development as a factor diminishing their satisfaction with their community. Nearly 45 percent of respondents feel that recreational home development is having a good effect on their community. Further, most respondents are relatively neutral regarding the effect of new people on their community. The above suggests an apparent disconnect between acknowledgment of "erosion of place" (as indicated by concern over loss of "northwoods character" and concern about community change) and the attribution of this to housing and population growth, notably a failure to connect this growth and change to proliferating seasonal and recreational homes. Or alternatively, the belief that the positive economic implications of new and recreational home development supersedes the adverse effects.

When partitioning by type and duration, more year-round than seasonal residents agree that development is causing a loss of the northwoods character. (Table 2) Similarly with duration of residency, as more long-term residents would tend to focus on the adverse impacts of new people and recreational home development. In addition, the long-term residents feel more adversely affected by change, as indicated by their higher probability of disagreeing that the "more their community changes the happier I am with it as a place to live." To this end, it might appear that the "erosion of place" is more salient to year-round than seasonal residents, and long-term residents than to newcomers. This runs contrary to Cockerham and Blevins's study of Jackson Hole, WY (1977) wherein newcomers more frequently expressed concern over growth. In the Pine Barrens long-term and year-round residents, tend to express more negative reactions to growth and community. The notion that long-term and year-round residents are more invested in a locale both in terms of time, historical connection to community, and share of personal wealth in property may explain this negative perception of community change.

Table 2: Views of Growth and Development

<table>
<thead>
<tr>
<th></th>
<th>44.7</th>
<th>42.2</th>
<th>33.8</th>
<th>23.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern over loss of northwoods character</td>
<td>35.2</td>
<td>33.6</td>
<td>32.3</td>
<td>22.3</td>
</tr>
<tr>
<td>Concern about community change</td>
<td>44.5</td>
<td>43.9</td>
<td>33.5</td>
<td>22.4</td>
</tr>
<tr>
<td>Attribution of change to housing and population growth</td>
<td>31.5</td>
<td>33.1</td>
<td>34.2</td>
<td>27.7</td>
</tr>
<tr>
<td>Attribution of change to recreational home development</td>
<td>36.7</td>
<td>34.8</td>
<td>25.3</td>
<td>21.29</td>
</tr>
</tbody>
</table>
Support for Growth Management

The negative perceptions of community change, new residents, and seasonal/recreational homes measured by long-term and year-round residents do not translate into a greater desire for growth management than their new or seasonal counterparts. In fact, more than 55 percent of respondents agree that public policies are needed to slow the growth and development, there is no difference between respondents in terms of their duration or type of residency. Perhaps this reflects the balance between the aspects of this statement. Whereas long-term and year-round residents seem to recognize the adverse effects of growth and development, they may not agree with public policies as the appropriate way to deal with it. Indeed, in the Pine Barrens year-round and long-term residents have less confidence in the efficacy of public policies at mitigating the impacts of growth and development than seasonal residents or newcomers, as measured by the statements categorized under anticipated consequences of growth management.

Overall, more than 55 percent of respondents overall agreed that managing growth and development would help slow down the pace of change in their community, while less than 17 percent disagreed with this statement. However, seasonal residents are more likely than year-round residents to agree that growth management efforts would be effective in slowing down the pace of change in their community. (Table 3)

Further, the majority of respondents (75 percent) agreed that public policies managing growth and development help maintain a clean environment. Few respondents disagreed with that statement. Again, seasonal residents are more likely to agree with the utility of public policies in safeguarding environmental values. These results suggest that whereas long-term and year-round residents perceive the adverse effects of growth and development to a greater extent than their new or seasonal counterparts, they have less confidence in public policies to effectively manage growth and development.
Table 3: Anticipated consequences of managing growth and development among seasonal and year-round residents

<table>
<thead>
<tr>
<th></th>
<th>30.9</th>
<th>62.1</th>
<th>26.1</th>
<th>13.3</th>
</tr>
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<tbody>
<tr>
<td><strong>Significance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>p</strong></td>
<td></td>
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</table>

***Indicates significance at p < 0.01.

Those results are similar to previous studies wherein new residents were more likely than traditional residents to support environmental controls or land-use planning measures (Blahna 1990; Graber 1974; Marcouiller, Green et al. 1996). Taking this a step further, this research demonstrates that perhaps residency type (seasonal versus year-round) is a more important predictor. Like Smith and Kramich (2000) who demonstrated that both long-term residents and newcomers report high importance of preserving existing community ways of life, residents of the Pine Barrens do show support of policies to manage growth and development. However, type of residence can be more important for predicting broad support for growth management. Although year-round residents perceive change and growth as a threat to a greater extent, similar to previous studies in Wisconsin (Marcouiller, Green et al. 1996), in the Pine Barrens seasonal residents are more likely to support growth management.

Private Property Rights and Growth Management

Another element to consider is the degree to which land use controls and growth management activities are palatable to residents. A strong private property rights ethic can run counter to support for public policies to reign in rampant growth. Often the support of growth management is tempered by a strong private property rights ethic. Growth management, land use controls, and planning are seen as impinging on individual rights.

Interestingly, over 68 percent of respondents agreed that it is acceptable to restrict private property rights in order to protect the environment. Less than 25 percent disagreed. In contrast, the response to the second measure of private property rights was much more polarized: more than half of the respondents disagreed with the statement “use of private land should be based on what the owner wants, rather than restricted by regulations” while nearly half agreed. Very few were neutral toward this statement. This inconsistency is difficult to understand, but may be attributed to the specificity of the first statement: perhaps a limitation of private property rights for a given purpose (in order to protect the environment) conjures less negative connotations to the respondent than a restrictions where the purpose is vague and the regulations run contrary to the owner “wants.”

As predicted, year-round residents hold a stronger private property rights ethic than seasonal residents, but this is only the case for one of the two measures. Long-term residents and newcomers do not differ in terms of their private property rights ethic. (Table 4) Following from Cockerham and Blevins’s study of Jackson Hole, WY (1977), it was predicted that land use controls would seem more threatening to long-term and year-round residents than to short-term and seasonal residents because of percentage of their total net worth invested in PB property, and more profound private property right mentalities hinged to their rural origin. Again, this provides some support for the disconnect between negative perceptions of community change and lack of support for public policies to address it; such policies are
often seen as counter to private property rights, an ethic that year-round residents tend to hold strongly.

In summary, the overall response to community change, attitudes toward managing growth and development, anticipated consequences of managing growth and development, and private property rights ethic seem to provide a consistent message. Respondents overall perceive change induced by growth and development as a threat to the character of their community as well as their quality of life. The majority of respondents support policies to manage growth and development. This level of support may be compromised by a moderate private property rights ethic. In particular, it is among those to whom the negative consequences of growth and development seem most profound (year-round and long-term residents) whom one might expect to hold requisite levels of support for public policies to minimize those effects. However, it is both lack of confidence in the efficacy of growth management policies and a stronger private property rights ethic that the connection fails to be made. Respondents overall failed to attribute the negative consequences of growth and development to new residents and recreational homes.

Planning for Regional Cooperation

In terms of scale of planning for future growth and development and promoting a regional approach, there is an overwhelming amount of support for cooperation of communities, with nearly 75 percent of respondents agreeing that there needs to be more cooperation among communities in planning for future growth and development. This is meaningful in terms of Wisconsin's Comprehensive Planning legislation, which requires intergovernmental cooperation as an element of an individual communities planning effort, and grant funding that favors communities engaging in multi-jurisdictional planning efforts. Further, it bodes well for the regional scope of planning that is required where economic, ecological, and social variables cross jurisdictional boundaries, such as in the Pine Barrens region. We see this cooperation happening already in a portion of the study area -- Washburn County. Here, county and town-level planning is underway concurrently (Northwest Regional Planning Commission 2003).

Table 4: Private Property Rights Ethic among Seasonal and Year-round Residents

<table>
<thead>
<tr>
<th></th>
<th>Seasonal</th>
<th>Year-round</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>66.7</td>
<td>69.7</td>
</tr>
<tr>
<td></td>
<td>33.6</td>
<td>25.0</td>
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</table>

Table 5: Attitude toward Community Cooperation Among Newcomers and Long-term Residents, controlling for Type

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<thead>
<tr>
<th>Type</th>
<th>Newcomers</th>
<th>Long-term</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>76.2</td>
<td>73.5</td>
</tr>
<tr>
<td></td>
<td>76.5</td>
<td>64.1</td>
</tr>
<tr>
<td></td>
<td>6.8</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>2.3</td>
<td>6.9</td>
</tr>
</tbody>
</table>

*Indicates significance at p<.01.

However, whereas there may be wide support for cooperation among communities in theory, in reality it is often stymied by local interests superseding regional goals, lack of political
will, the increased time required to coordinate, and conflicts of interest among localities.

Often, to counter these conflicts of local interest, even when cooperation is attempted, guidance from an overlying government entity can be appropriate and effective.

Interestingly, most respondents prefer county-level control of future growth and development. This is another positive indicator for regional-scale planning in the Pine Barrens. This level of support may be indicative of the joint county-local planning efforts already underway in Washburn County, as well as the strong county and Northwest Regional Planning Commission presence in Burnett County. There was no difference between long-term residents and newcomers. Preferred level of governance among seasonal and year-round residents was different, as predicted. Year-round residents were more likely than seasonal residents to cite local or individual control as preferred scale of governance over future growth and development. This is not surprising, as year-round residents are limited to the local scope of interest and have much less experience with regional and metropolitan government living predominantly in rural area. On the other hand, the great majority of seasonal residents originate from urban areas, in particular the Twin Cities metropolitan area. Here, there is a strong presence of regional metropolitan governance and cooperation. By virtue of experience, it makes sense that the seasonal residents would be supportive of higher levels of control.

Other Factors Influencing Attitudes toward Planning

While residency type and duration have strong relationship with attitudes toward growth management, there are other key factors. Studies throughout the past decades from Graber (1974) to Smith and Krairich (2000) portray socio-demographic differences between the newcomers and long-term residents: most notably higher income and education level among newcomers, referred to in the literature as “social class.” For instance, income is significantly related to views of managing growth and development, private property rights, and preferred level of governance. This study further supports these measured difference between long-term and new residents, and further demonstrates that these differences can be extended to seasonal and year-round residents, with seasonal residents enjoying higher levels of income and education than their year-round counterparts. This is important to this study because income and economic circumstances can predict levels of support for growth-control mechanisms.

Another consideration is age - which is related to attitudes toward new residents, belief regarding growth management as a way to slow community change, and private property rights ethic. For instance, it tends to be those residents in the middle age categories who are more likely to perceive newcomers as having adverse impacts on the community. At the same time, those respondents in these age categories are least likely to perceive growth management as a positive way to protect the environment or slow the pace of change in the community. Interestingly, the oldest respondents were most likely to agree that growth management would help slow the rate of growth, suggesting that perceptions of the “old

Table 6: Comparison of Preferred Level of Governance between Newcomers and Long-term residents, controlling for resident type

<table>
<thead>
<tr>
<th>Seasonal</th>
<th>Year-round</th>
<th>Newcomers</th>
<th>Long-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.7</td>
<td>11.2</td>
<td>17.1</td>
<td>12.5</td>
</tr>
<tr>
<td>4.1</td>
<td>4.1</td>
<td>48</td>
<td>47.7</td>
</tr>
<tr>
<td>29.1</td>
<td>31.0</td>
<td>23.4</td>
<td>19.5</td>
</tr>
</tbody>
</table>
boys’ network as somewhat inaccurate. Furthermore, the older respondents in general tended to have the least strong private property rights ethics.

Factors associated with the property and community also beg consideration. For instance, growth management is a much more salient issue to those residents in more rapidly growing areas. They are more likely to ascribe negative views to new people and recreational homes. Rate of growth also impacts views on managing growth as a means to slow development, with those in the fastest growing areas more likely to perceive the efficacy of growth management and the need for community cooperation. These results are similar to the findings of a previous study that demonstrated that communities with higher levels of tourism tended to support future population growth more than those communities less dependent on tourism (Smith and Kranich 1998).

Often newcomers are more accustomed to land use controls as they come from metropolitan areas, with greater land use control traditions (Cockerham and Blevins 1977). Whereas previous studies suggested that amount of land owned may influence attitudes toward control of land use, with those who own less land demonstrating more favorable attitudes toward local versus individual control (Cockerham and Blevins 1977), my results did not show this. In fact, amount of property owned was not directly related to any of the measures and was therefore dropped from the model.

Although we did not measure property value directly, as was the case in Nelson (1997), where newcomers own property of a higher value, we assume a similar disparity between property values based on distribution of waterfront and forested parcels. These data from the Pine Barrens indicate a realization of this trend, with over 70 percent of lakefront parcels under seasonal ownership, similar to Spain’s findings where two-thirds of newcomers own waterfront property versus one-third of long-term residents (Spain 1993). Further, there is a significant difference among seasonal and year-round residents who report owning forested land. The disproportionate distribution of amenity-rich, and thus more monetarily valuable, parcels represents a privatization of public resources (Spain 1993), presenting challenges for management and access, and having the potential to incite conflict. “Privatization refers to the conversion of previously accessible public goods or services to personal use by people able to afford this transformation” (Spain 1993, p. 163).

Whereas previous studies indicated support for growth management was also linked to amount of land owned, with larger landowners representing more traditional uses, such as ranching, and thus less accepting of land use controls imposed on their property (Cockerham and Blevins 1977), my results showed no relationship between acreage and growth management attitudes.

Table 7: Multiple Correlation Regression Illustrates Significant Factors in Determining Subjective Views of Growth and Development

<table>
<thead>
<tr>
<th>Factors</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Land Owned</td>
<td>0.00</td>
</tr>
<tr>
<td>Property Value</td>
<td>0.073</td>
</tr>
<tr>
<td>Acreage</td>
<td>0.0418</td>
</tr>
<tr>
<td>Waterfront</td>
<td>0.6975</td>
</tr>
<tr>
<td>Seasonal</td>
<td>0.422</td>
</tr>
<tr>
<td>Year-Round</td>
<td>0.651</td>
</tr>
<tr>
<td>Forested</td>
<td>0.545</td>
</tr>
</tbody>
</table>
Implications for Planning in the Pine Barrens

Overall, these results provide support for the planning that is currently underway in the study region, as well as expansions of current efforts under Wisconsin’s Comprehensive Planning, and other state-mandated planning legislation. Whereas overall levels of support for planning are moderate to high for respondents, it is necessary to consider the distribution of support among residents (newcomers and long-term, seasonal and year-round) to understand how growth management might play out in the region.

Formulation of goals and objectives – substantive outcomes of the planning process – may be complicated by the diversity of the population and multiplicities of land ownership within the PBR. This a landscape where seasonal and year-round residents, newcomers and “oldtimers” intermingle. The purported “culture clash” between residents as creates a contentious political terrain.

This study demonstrates that newcomers and seasonal residents do hold somewhat different views on growth management. Whereas they may be less likely to perceive the adverse impacts of growth and development, they may have more confidence in the growth management process and therefore could be an asset to the planning process. Even where traditional (long-term and year-round) and new and seasonal residents may express some similar concerns about growth and change in their communities, planners must seek to understand whether these truly are shared underlying concerns, or just a shared rhetoric toward preserving rural character (Dubbink 1984). However the data demonstrate that views may not be as disparate as they are predicted to be; overall there is a high degree of concern.
for community change, environmental protection, and hence a moderate level of support for managing growth and development. Furthermore, the majority of landowners believe the county is the most appropriate level from which to address future growth management. This measured commensurability between goals and objectives of PBR residents and landowners, despite alleged conflict, suggests an optimistic future for planning in the region.

Whereas the comprehensive planning process is a state-imposed planning mechanism, its emphasis on public participation opens the door for acknowledging the plurality of voices in the region and embracing a more bottom-up, inclusive approach. Uncovering differences between groups of residents in terms of support for the planning process in general suggests the relevance of listening to all voices and hence legitimizing the planning process in the region.

One issue that should be considered is the apathy toward planning and land use decision-making in amongst the general public, as suggested by low rates of attendance at planning meetings where decisions regarding the future direction of growth and development are actually made. Even despite the best attempts to involve the public in these decision-making processes and soliciting public guidance of the comprehensive planning process, attendance is limited. Generally, unless the public feels threatened by a potential “crisis” — the incursion of a locally unwanted and particularly noxious land use, few show up. It is those that actually participate who guide the planning process, and any degree of growth management that is pursued. This reality begs the question of who is actually participating in planning processes, how are they participating (continually or sporadically), and how and if the decision-making bodies consider local participation. Analysis of participation extent and frequency would further our understanding of how differences in opinion between new and old residents, seasonal and year-round residents, as measured by the survey we conducted may actually influence local government decision-making. Even the greatest degrees of divisiveness between groups that do not “show up” and participate have minimal ramifications on the process. On the other hand, subtle differences of opinion among individuals that do participate can significantly alter policy-making and stymie implementation.

Knowing this, the differences between residents suggest a profound challenge exists for the rural planner: “to assure that all sides are represented when decisions about the community’s future are at stake” (Spain 1993, p. 168). It is incumbent to explore what these dynamics mean for the way we think about planning for rural areas and the way practitioners negotiate this ever-changing rural planning terrain. The planning mandated under Wisconsin’s Comprehensive Planning legislation may be an apt springboard for engaging in consensus building and community based planning under a state-directed planning framework in the Pine Barrens region, as several counties, towns, and villages in the area are currently engaged in community planning under the Comprehensive Planning legislation.

Conclusions: Bridging the Divide

This research provides evidence of the commonalities of the dynamics explored by rural sociologists for decades and the planning literature, particular as it applies to rural areas. In the late 1970s, Healy and Short alluded to the rebirth of rural planning (Healy and Short
In the decades following, the planning literature has increasingly focused on rural dynamics and the complexity of resulting issues.

Rural "quality of life" continues to be a catch phrase in both the planning and rural sociological literature. Whereas the literature cumulatively attempts to discuss this notion of quality of life as the guiding concern of newcomers and nontraditional residents, setting them apart from long-term and year-round residents and being the basis of their support for growth management techniques (Healy and Short 1979). However, this terminology again falls prey to the rhetorical phenomenon alluded to by Dubbink who asserts that "shared rhetoric about rural living that conceals quite divergent concepts and objectives" (Dubbink 1984, p. 406), wherein shared terminology and ways of referring to planning issues and problems do not reflect the same ideas of what truly constitutes a "rural setting" or a high "quality of life."

Further, similarly stated goals and objectives in planning documents may result in very divergent implementation strategies (King and Harris 1989). One could argue that traditional and non-traditional residents likely value quality of life equally, however because of their unique economic and social circumstances, they define this concept differently. For example, for newcomers and seasonal residents who are typically wealthier and less linked to local economic conditions for their livelihood, quality of life may indeed refer to the aesthetics, rural character, and peaceful serene rural setting. However, for traditional residents whose entire livelihood is linked to the local economy, quality of life is also their first priority. However, their conception of quality of life is first economic - their ability to survive economically which is highly dependant on local conditions and enhanced by growth in the local economy.

As early as the late seventies, the planning literature began to recognize the need to "know the local diversity of interests," "determine whether there exists a general desire for some sort of land use controls," and "present policy alternatives in terms sensitive to the locality's mix of environmental and economic objectives" (Healy and Short 1979, p. 314). It is not that these directives fell on silent ears in subsequent years. Decades of shifting demographic trends continued to present a changing rural landscape that rural sociologists first sought to understand and describe. Planners and policy-makers ability to grapple with these changes was first predicated on gaining an understanding of the dynamics of rural places, a reality, planners and rural sociologists have come to realize, is in a perpetually shifting state spurred by demographic trends, technology, and global conditions.

This research demonstrates that there is a clear nexus between the rural sociological perspective and the emergent rural planning discipline. Rural sociologist had demonstrated the complexity of rural locales in recent decades induced by the changing social structure.

This research demonstrates that this complexity is still abound and evident in areas like the Pine Barrens Region. The earliest literature suggested that further research is needed on the realities of parcelization in rural areas (Healy and Short 1979). Ten years later researchers had still not adequately "risen to the challenge to investigate the nature of small town and rural planning to assist rural planners in understanding the uniqueness of their context" (King and Harris 1989, p. 182). Whereas the rural sociological literature has assisted in understanding the dynamics of these changes, there remained a gap in understanding of the implications and applications of growth management in addressing these dynamics revealed
by rural sociologists (King and Harris 1989). Whereas planning theorists began to recognize this emergent complexity of settlement and discuss it couched in terms of “heterogeneity,” “multiplicities of interest,” “pluralism,” and embracing “varied epistemological approaches” – all calling for a shift from an underlying modernist planning paradigm to a more context sensitive framework, this discussion has primarily focused on urban area dynamics.

Although not couched in these postmodernist terms, the literature driving the rural planning practice has begun to call for an enhanced understanding of these dynamics and embracing them in planning processes that were more sensitive to the local context, increasingly participatory, and draw up on local knowledge and assets (Lapping, Daniels et al. 1989; Daniels 1999).

This research abets the understanding of amenity-led growth in a unique rural context – defined by its remote rural character as well as its proximity and connections to a major metropolitan region. Further, the results here are aligned with much of what the rural sociological research has demonstrated over the years - the complex dynamics of the social structure rural regions. We suggest that these lessons mirror those conveyed by the planners.

First, the complex dynamics alluded to by the rural sociologists are the very same forces the rural planning literature responds to when it calls for an infusions of local knowledge, context-sensitivity, and participation in local and regional planning. The social dynamics uncovered by this research, together with the state-mandated comprehensive planning institutional planning framework in Wisconsin, provides an appropriate and necessary testing ground for participatory, community-driven planning under state-led directives.
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We used simple random sampling to draw the sample from the property tax records. Type of residence (seasonal and year-round) was determined by the zip code of the property tax billing address.

A modified version of Dillman’s Tailored Design Method (Dillman 2000) was used to implement the survey with seven total mailings: a pre-notification letter, the survey, a reminder postcard, a replacement survey, two additional postcard reminders and a specially delivered third copy of the survey.

The responses to the individual items measured respondent attitudes on various dimensions of managing growth and development in northwest Wisconsin. The response format for these questions, with the exception of preferred level of governance (3b above), is a Likert scale ranging from 1=strongly disagree to 5=strongly agree. Preferred level of governance is a nominal level variable that will be measured with one item on the questionnaire. Based on responses to the following, four nominal categories were created.
Raising the Gangplank: A Defense of Localism Aimed at Resource Protection

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Department of Urban and Regional Planning

Introduction

Since the inception of locally-based land use regulations there has been concern over their use and abuse. Zoning in particular has been targeted as a policy tool that is too often employed to the benefit of narrow local interests with racist and class discrimination effects (Babcock 1966). These criticisms commonly derive from urban and suburban contexts where the stakes in land use decisions can be quite high. The relationships between housing, property values and school finance provide particularly strong motivation for local efforts to influence the character of new development through regulations (Rusk 1995; Fischel 2001).

As one moves further and further from the urban core, the underlying dimensions of these critiques become weaker. School districts, for example, become regional in scale encompassing small cities, their immediate suburbs and the hinterland. Total population often becomes more homogenous as one moves away from urban centers and into the countryside (Frey 2000). At the same time, the potential for regulations to achieve wider
societal goals in resource protection and management increases with distance from urban
population centers. How far can the critique of localism be extended before it becomes a
tool for development advocates who argue that environmental protection must give way
to the need for affordable housing?

This paper summarizes the critiques of localism as they relate to housing
development regulations. I then illustrate the difficulties that arise when the urban
critique of localist housing policy is extended beyond its metro origin into the rural
countryside. I argue that in the rural context, locally-led efforts to restrict development
through land use regulations in order to protect community character and local ecology
should not be held to the same criteria of justice and equity used in metropolitan regions.
In doing so, I illustrate how the distinction between urban and rural places remains a
useful one for analyzing housing markets and the effects of restrictive land use
regulations.

What's Wrong With Localism in Land Use Regulation?

Localism in land use regulation is not highly regarded by those outside the local context
looking in. The very term suggests its derogatory antecedents: parochialism and
insipid. Localism invokes terrific labeling: cronyism, good-old-boys, NIMBYs,
BANANAs. Promoters of localism are “misanthropic” newcomers who “have a fervent
conviction not to let where they live become just another suburb” (Daniels 1999, p. 53).

Localism runs counter to supposedly desirable social goals of cosmopolitanism,
cooperation, harmony, regionalism, and perhaps the most loaded term of them all:
progress. It is something to be overcome. Institutional responses to localism range from

multi-jurisdictional councils to regional governments to state and national prescriptions
of what can and cannot be delegated to local bodies.

The critiques of localism in land use regulations are hardly hollow and it is useful
to review their bases and alleged consequences. It is then possible to weigh localism on
the basis of its positive and negative effects. The two strongest critiques include charges
that local governments are inherently myopic and fail to consider the wider public
(Jacobs 1989; Rusk 1993), and that local governments lack adequate capacity to be fully
granted authority over important decisions (Cutler 1959).

Parochialism

The narrow focus of local government jurisdictions is often seen as counter to the wider
public interest. For example, the local resistance to noxious land uses such as solid waste
landfills, gravel pits, radio and television antennae, high-voltage electrical transmission
lines and power plants seems to ensure that such uses—which seemingly need to go
somewhere—have a hard time getting sited anywhere (Rabe 1994).

While local governments actively push away undesirable land uses, they can often
work hard to pull in “plum” land uses that will in some way benefit the community. In
the process, communities begin to compete with one another for new types of
development that presumably will provide prosperity and lower taxes to whoever wins.
Research suggests, however, that the winner inter-place competition is oftentimes a
private corporation and the loser is the wider public (Power 1996).

Parochial regulations labeled the “drawbridge” or “gangplank” syndrome is a
particularly selfish form of localism. Such localism says in effect ‘I got mine, to hock
with you". It can be difficult to distinguish the envy from the frustration on the part of those on the wrong side of the moat when the drawbridge metaphor is invoked.

**Ineptitude**

The power to regulate land use is not inconsequential and so it is rarely taken lightly. The administrative responsibilities it entails can be significant. These arguably originate in the organization of government as a guarantor of property rights (through land titles, enforcement of trespass laws, etc.) and extend to the minutiae of ordinance implementation (ensuring proper notification, maintaining minutes of land use decisions, arranging for appeals processes, etc.). Not all of the tens of thousands of local governments in the US is up to the task of carrying out the duties and obligations that institutional in land use regulation entails (Cutler 1959).

With regards to land use regulation, local jurisdictions can be aligned along a spectrum from the fully competent to the fully incapable. Competence is analogous to capacity, and it is easy to understand how large cities and suburbs can call forth their financial and human resources to carry out somewhat complex regulatory schemes. Few people question whether or not cities like New York or Chicago have the administrative wherewithal to actually enact land use regulations and maintain the associated institutions. If anything, they are too good at it for some people's liking.

At the other end of the spectrum of capacity and competence lay thousands and thousands of local units of government with much less human and financial resources than their big city kin. At the extreme are those communities that don't even bother with land use controls at all: regulation is either centralized at the county and/or state level or they simply do not exist. These communities do not attract quite the same level of attention as those further up the spectrum with just enough capacity to try and employ local land use regulations. Such jurisdictions are more likely to be highlighted as examples of why local governments are incapable of bearing this great responsibility.

In spatial terms, those rural communities with arguably the least capacity cover the greatest ground. In Wisconsin, for example, unincorporated rural towns are home to roughly one-third of the state's total population but they preside over a vast majority of the state's land base.

It is perhaps reasonable then to wonder whether or not local governments with limited capacity can actually be entrusted to make and enforce land use decisions that effectively balance private interests with the public good. Surely if powerful interest groups and corporations can capture and control state and federal agencies, then the meager town board doesn't stand a chance. At the same time, commentators from the left have pointed out that the "quiet revolution" - which increased state and federal roles in land use - has served to standardize and "modernize" land use regulations in a manner that well suits powerful capitalist interests (Walker and Heiman 1981). With a consistent set of rules, powerful outside interests can more easily overcome local peculiarities (Scott 1998).

It may be cold comfort to think that the anachronistic, parochial, and occasionally prejudiced systems of local land use regulation could serve the public good simply by rendering local processes unintelligible to powerful outside interests, but such a possibility remains. At the same time, there is nothing inherent in local governing bodies to preclude them from increasing their decision-making capacity. Indeed, this is one of
the more compelling reasons to continue having so many thousands of small local governments: that they may best be positioned to fulfill the promise of de-centered, participatory, “strong” democracy (Barber 1984; Shuttin 2001).

The following section puts some more meat onto the above critiques of localist regulation by focusing on a single issue: housing. At first blush one might wonder on what grounds a local unit of government would oppose something as commonplace and seemingly desirable as housing. After all, don’t communities exist primarily to provide for a population? When examining the issue of housing it is important to keep in mind that most opposition to new housing and associated population growth derives not from the houses per se but rather from the effects that might be expected as a result of development. Moreover, it is not the average effect but the potential “peak” effect that seems to generate such great interest (Fischel 2001).

An Example of Localism: The Challenge of Housing

Local units of government are often accused, sometimes rightly, of using land use controls to exclude in-migration along racial and class lines. These criticisms are usually along the lines of the parochialism discussed above, though when considering the overall challenge of providing housing to those least capable of caring for themselves one must wonder if the thousands of suburban districts are even capable of fulfill their obligations. So long as they are able to “beggar thy neighbor”, we may never find out.

The growth of the “exclusive” suburb coincided closely with the landmark Brown vs. Board of Education decision requiring integrated schools. By creating their own school districts, suburbs were able to better control the racial makeup of the student body.

They quickly learned that excluding affordable (dense) housing could simultaneously keep out a certain race and class of people and enhance the fiscal position of the school system and local government (Perin 1977; Rusk 1995; Pendall 2000).

In metropolitan and suburban contexts, the discriminatory effects of land use regulations are prominent enough to motivate an array of policy and third sector responses. These range from public provision of housing in central city and suburban locations to rental vouchers, reverse commuting programs, and inclusionary development policies. To the extent that central cities bear a disproportionate share of the total costs for these programs, it would be difficult to describe the current system as fair.

The clearest examples of exclusion occur when a community explicitly disallows a particular form of housing such as duplexes, apartments or mobile homes. The landmark Mt. Laurel decision in New Jersey is often cited as evidence of prejudicial localism and an example of positive state intervention. As a result of the case each municipal unit of government in New Jersey must accommodate a certain degree of high-density housing. Similar inclusionary policies exist in the Twin Cities of Minnesota and in Portland, Oregon, in both cases enforced by a regional body of government (Orfield 1997).

Beyond simply excluding particular forms of housing, localism can be expressed through the form and function of land use regulations. For example, simply delaying the process of housing construction through regulatory reviews can add costs to the developer, costs that are likely to be born by the eventual homebuyer (Malpezzi 1995). Requiring large lots is another way to shape the make-up of a community’s incoming residents. Larger suburban lots fetch higher prices and are typically host to larger, more
expensive homes—what some have come to calling “McMansions.” Additional regulations such as exactions can further increase the “entry fee” for getting into a particular suburb/school district (Kaiser and Burby 1988; Altshuler and Gómez-Ibáñez 1993).

A more extreme form of land use regulation is the use of growth boundaries such as those in Oregon. In places such as Portland, some fear that the constraint on market supply could lead to an inflated run-up on land prices. Whether or not such an inflationary effect has actually taken place is the subject of some debate, with most commentators agreeing that the constraint is difficult to sort out from numerous other factors affecting housing affordability, including the strength of the regional job market and associated incomes, the relatively high level of amenities in the city, and the trend towards larger and higher quality homes (Knaap 1985; Phillips and Goodstein 2000).

While large lot zoning and its variants can be implicated in segregation and inter-municipal fiscal disparities, these are not their only effects. One must consider the very real impact of these practices on the environment and aesthetic character of a community (Pendall 1999). In a recent article, Robert Liberty sets out to make the case that exclusionary, large lot housing regulation has a significant negative effect on the environment and ecology (Liberty 2003). Liberty’s point is that exclusionary zoning is consummate with urban sprawl and as such it is implicated in all the outcomes associated with rapid, extensive urbanization (Frye 1997).

Liberty’s own analysis, however, conflates large lot developments in Colorado (40 acre) with those found in metropolitan areas (Liberty 2003, p. 584). Such conflation places rural policy makers in the unwarranted category of “exclusionary” when seeking to use land use controls to protect natural resources. This following section discusses some of the positive roles that large lot zoning can play in protecting natural resources.

**Large Lot Zoning as a Natural Resource Protection Policy**

Using large lot zoning and other land use regulations to manage and protect natural resources is like using a sledgehammer to drive a nail. It will get the job done, but it’s perhaps more than necessary. In Wisconsin, the use of zoning to protect natural resources was first initiated in the 1930s when the state enabled counties to create rural zoning districts to guide forestry, farming, and recreational development to suitable sites. The relatively high understanding of how zoning works and the local administrative capacity that has been developed to enforce and defend it both make zoning an attractive tool for furthering resource protection objectives. Two examples highlight how zoning can crudely but effectively be used to carry out natural resource protection.

**Preventing Landscape Fragmentation**

Subdividing land into smaller and smaller parcels does more than just create affordable home sites. The process of creating home sites through subdivision is an archetypical example of habitat fragmentation, one that is relatively permanent. There is a growing body of evidence that fragmentation for development has negative consequences on sensitive plants and animals (Odell, Theobald et al. 2003). Cluster development—concentrating housing to preserve open space—is often promoted as a strategy to accommodate development and protect resources. However, in the absence of large lot requirements, there is little or no incentive to employ cluster techniques.
As land is subdivided, access to private lands for recreation can also be decreased (Cordell, English et al. 1993). Making it more difficult to split lots could lead to more large lots open for recreation, but not necessarily. Fragmentation also has potential effects on forest management and, as the western US and Australia illustrate, could place more homes in fire-prone wildland interface areas. While requiring very large lots does not prevent these effects, it could effectively limit the number of homes and structures placed in the woods. In addition, large parcels could be more readily and economically managed for timber production.

**Increasing Storm Water Infiltration and Protecting Surface Water Quality**

Lot size is inversely related to the percent of a given parcel converted to impervious surface. This association is most evident in urban areas where high-density development creates large patches of impervious surface, requiring expensive stormwater sewer systems for flood avoidance. The increased volume and velocity of stormwater in more urbanized areas increases the amount of sediment and dissolved particles that are delivered to lakes, streams and wetlands. Commonly referred to as non-point pollution, this is quickly becoming the most prevalent water quality threat in the US. The growth in impervious surface and increase in runoff also correlates with downstream flooding problems, as was recently experienced in Europe. A logical place to begin limiting runoff and non-point-pollution is at its source (Potter 2003). The following section focuses more closely on the water quality aspects of subdivision and development through the case of a watershed in rural northwestern Wisconsin.

**Case of the Long Lake Watershed in Washburn County, Wisconsin**

Self-proclaimed "Vacation Land", Washburn County is a recreational county providing leisure and retirement opportunities to people from Twin Cities of Minnesota and nearby Rice Lake and Eau Claire, Wisconsin. Most parts of the county are within a two to three hour drive of downtown Minneapolis. It is similar in many respects to many of the rural places being analyzed to detect "culture clash" and study the effects of tourism migration (Beyers and Nelson 2000; Smith and Kramlich 2000; Walker and Fortmann 2003).

The county is located along the extent of the last glaciation in the Midwest, and the legacy of the Holocene is evident in the rolling hills, rocky soils, and numerous lakes and wetlands. The forests of the county were initially logged off in the late 19th Century and the logs sent downstream to build countless barns and market towns in the American Heartland (Twining 1975). The failure of farming to take root in the cutover resulted in great amounts of tax forfeiture in the 1920s-1950s (Carstensen 1958).

Today over one quarter of the county's land base (148,000 acres) is publicly owned by the county government and managed for timber, wildlife and recreation (Washburn County Forestry Department 2001). Timber sales on county land yield nearly one million dollars annually in gross revenue. While there is little federal or state forestland in the county, private industrial and non-industrial forests abound. The landscape is hardly as breathtaking as the Rocky Mountain West or even the Adirondacks, but it has a subtle charm and, as discussed below, is highly regarded for its water resources.
Forestry remains a major economic driver in the county, but tourism and housing generate more economic activity as measured in jobs and sales taxes. In 2003 travelers spent an estimated $54 million in Washburn County (Wisconsin Department of Tourism 2004). Following Krammich and Zollinger (1997) Washburn County would be characterized as a resource-dependent community in transition. The economic base is currently moving away from forestry and agriculture and towards recreation, second-homes, and retirement development. The transition is towards a post-productive landscape where natural resources- trees, water and wildlife- are more appreciated in their current state rather than as inputs into value-adding processes (Mather 2001).

In addition to its location and forested landscape Washburn County is endowed with significant water resources. These include 262 named lakes and 704 smaller unnamed lakes. All told, lakes cover over 30,000 acres in the county and provide just under 1,000 miles of shoreline (Northwest Regional Planning Commission 2003, p. 2). Pressure for cabins, cottages, resorts, second and retirement homes has long been felt in Wisconsin’s lake rich regions (Waite 1959; Yanggen and Kusler 1968). Statewide zoning requirements for minimum frontage and lot size in shoreland areas (lakes within 1,000 feet of lakes and 300 feet of rivers) have been required in unincorporated areas since the 1970s.

At a finer sub-county scale, there is evidence that portions of the county- notably those townships with fewer lakes and more intensively managed forests or farmlands- would be better classified as sustained resource dependent communities (Krammich and Zollinger 1997, p. 206). These townships have seen only a fraction of the housing development associated with lake and forest amenities. In the last twenty years the pressure has steadily increased development and redevelopment in lake rich rural areas, due in part to healthy regional economies and ongoing strong demand for water frontage (Derus 2000). Responses these pressures have come in the form of local, county and state programs to purchase lands and regulate development near lakes. In Washburn County, where public lands abound, regulatory attention and resource monitoring has been focused on lakes.

Past Local Efforts: Shoreline Regulations and Lake Planning

One of the institutional responses to shoreland development pressures includes classification projects that align zoning requirements to the ecological capacity of a given water body (WDNR Bureau of Watershed Management 2000). Washburn County’s lakes classification and subsequent shoreland zoning revisions took place at the end of the 1990s. As a result of this process, lakes in the county were classified based on vulnerability to development and designated for either minimum, moderate, or maximum protection. Lakes with maximum protection levels required double the minimum frontage (300 feet) and required a minimum lot size of 3 acres.

The experience in Washburn County with lakes classification is similar to those in other parts of the state, though some counties are choosing not to implement more restrictive zoning on vulnerable lakes. Lake planning is a state-local program that complements lake classification and zoning. Lake planning efforts are commonly initiated by local lake associations or districts or by municipal and county government. The standard lake planning project proceeds in three phases: water quality study,
establishment of water quality goals and analysis of alternative scenarios, and proscriptive recommendations for meeting goals.

Long Lake is a 3,200 acre flowage lake located in the southeast corner of Washburn County. The Long Lake Preservation Association (LLPA) is a non-profit organization of property owners on and around the lake. The LLPA’s mission is “to preserve and protect Long Lake, its watersheds and ecosystems”. The LLPA and the Wisconsin DNR sponsored a three-phase lake planning project between 1994 and 1997. The plan included specific water quality goals stated in terms of total phosphorous, the limiting nutrient affecting algae blooms and subsequent hypoxia in the lake. These goals were established for five basins in the lake. As shown in table 1, the phosphorous levels have increased since 1994 and the lake has subsequently been classified as a eutrophic lake.

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Table 1. Summer total phosphorous goals from Lake Management Plan and actual averages for sampling stations in Long Lake (Source: Barr Engineering Company 1997) and self-help testing results available on the WDNR web page http://www.dnr.state.wi.us).

The 1997 lake management plan included a nutrient budget to identify the sources of phosphorous coming into the lake. With little of the watershed in agricultural use (less than 10%) and no direct discharge sources of phosphorous, efforts to manage phosphorous are targeted to non-point sources found throughout the Long Lake area. The Long Lake Management Plan reports that 40% of the phosphorous reaching the lake is coming from direct surface runoff (Barr Engineering Company 1997). The balance of phosphorous is coming from direct atmospheric deposition (16%), groundwater (15%) and internal loading (24%).

Of these phosphorous sources, surface runoff is the only one that can be readily managed in the long term through readily available and relatively inexpensive practices. To address the runoff issue, the plan recommends widespread adoption of stormwater best management practices and enforcement of large-lot (>5 acre) zoning throughout the watershed, including the areas beyond the 1,000 foot shoreline zone (Barr Engineering Company 1997, p. 35). The plan suggests that the LLPA work with an attorney to draft the required ordinances and work with the county “until the ordinances are passed” (Barr Engineering Company 1997, p. 44).

This advice reflects a rather coarse understanding of how local ordinances could and should be developed. In the case of Long Lake and Washburn County, the LLPA was involved in the county-wide lakes classification project and the subsequent zoning ordinance revisions. A former LLPA board member now serves on the town and county board and on the county zoning committee. The LLPA has also been active in the development of the most recent and still ongoing planning effort: a county-wide, bottom-up effort to create comprehensive plans in accordance with Wisconsin’s recently updated planning and land use laws.
Current Local Efforts: Comprehensive Planning in Washburn County

In 1999 the State of Wisconsin adopted Act 9 as part of the omnibus budget for that year. Act 9 amended its planning and land use laws (State Chapter 66) to require that land use decisions and ordinances be based on statutorily defined comprehensive plans (Ohm 2000). The law includes a 2010 deadline for local governments to develop or update plans in accordance with the more detailed state definition. The legislation was accompanied with substantial state grant monies that local governments could apply for and use for creating their plans.

Washburn county and most of the local municipalities (towns, villages and cities) cooperatively applied for and received state grants for comprehensive planning in 1999 and 2000. The three towns that encompass the Long Lake watershed were included in the first round of Washburn County comprehensive planning grants. Their planning efforts began in the summer of 2001 and are anticipated to conclude this summer (2004) with the adoption of comprehensive plans by local and county ordinance.

In November 2001 the LLPA began exploring ways that their watershed and lake quality concerns could be addressed through a “holistic approach” (Barta 2001). The University of Wisconsin – Stevens Point Center for Land Use Education (USWP CLUE) responded to the LLPA’s request for proposals and developed a lake management project to integrate watershed and lake management with the local comprehensive planning process. This entails working with the planning committees in the three towns that make up the Long Lake watershed: Long Lake, Birchwood and Madge. Since the fall of 2002, USWP CLUE has been providing town planning committees with additional analysis of the Long Lake watershed and proposing strategies for implementing watershed protection both through the local comprehensive plans and through the LLPA’s volunteer activities.

From analyzing the runoff issue around Long Lake it has become increasingly clear that the future of the lake’s water quality and ecology is closely dependent on the character of land use change. As land is converted from forestry to residential use, a greater portion of the watershed will become impervious. In addition, pervious areas will be modified to eliminate ponding and improve drainage. These will combine to increase both the volume of runoff and the concentration of phosphorous entering the lake. Researchers from the University of Wisconsin – Stevens Point Center for Watershed Science and Education (UWSP CWSE) have developed runoff models to attempt to quantify the expected nutrient contribution.

The models necessarily simplify what is a complex phenomenon; they assume average impervious and developed pervious areas for different lot sizes and project the amount of water that would then runoff given average precipitation scenarios. The models indicate that 40-acre lots would essentially be similar to undeveloped forestland and contribute approximately .02 pounds of phosphorous annually through runoff. A two-acre parcel, in contrast, would be expected to have 12% of the land covered in impervious surface and another 50% in developed pervious (lawns). Such a parcel would yield approximately .17 pounds of phosphorous annually, almost nine times the amount of the undeveloped parcel. Smaller lots like those already developed on the lake (and allowed under shoreland zoning) could be expected to yield .39 to .58 pounds of phosphorous per year, more than twenty times the amount from undeveloped wooded areas.
Nutrient loading from existing development is obviously a major issue and one that will need to be addressed. At the same time, it seems only prudent to approach new development with great caution. Until runoff BMPs are widely and consistently adopted by developers, builders and homeowners, lot size restrictions remain a straightforward means of minimizing impacts of watershed-wide development on the lake. The town comprehensive planning committees have been addressing questions of lot size and density in their efforts, though they come at it from a slightly different angle.

From my observations of the planning processes in the county, I have seen many of the committee members grapple with the concept of “rural character”. The survey conducted by the NWRPC as part of the planning process found that most respondents seek a protectionist approach to land use and the environment. At the same time, they are hesitant to tell other people what to do with their land. In a series of questions, the greatest agreement was found to the following three statements:

- Should provisions be made to preserve the natural beauty of lakes, rivers, streams and shorelands? (81% yes);
- Should a landowner have the right to sell his or her farmland for purposes other than farming? (80% yes);
- Should the rural character of Washburn County be preserved? (75% yes)

(Commission 2002, pp. 3-5)

The greatest disagreement was found to the questions “is it important to attract new population/more tourists to this area” (34%/46% yes respectively).

As part of developing future land use maps for the comprehensive plans, committee members and other meeting participants discussed the issues of allowable lot sizes and densities in their towns. Much of the undeveloped land in the towns around Long Lake are currently in agricultural or forestry zoning categories requiring 20 acres of land for each residential structure. These rural zoning categories are loosely maintained and as Donald Last (1997) found in a number of Wisconsin counties, rezonings for smaller lots- generally 3 to 5 acres- is common and largely uncontroversial.

The comprehensive planning process has provided an opportunity for local residents to consider the long-term implications of parcelization and development trends. Their deliberations largely center on the aesthetic impact of widespread small lot development; such lots are seen as inconsistent with rural character. At the same time, the committees must contend with the fact that the vast majority of existing residential structures are already located on small lots on and around lakeshore. This pattern may satisfy some commentators’ desire for “clustered” development (Wells 2002): traveling around most parts of the towns one would be hard pressed to guess how many homes actually exist in towns like Long Lake, Madge and Birchwood. It is somewhat ironic then that this particular form of clustering poses the most substantial threat to adjacent lakes, the most unique and valuable assets in the region. It is doubly ironic that deflecting homes away from the lakes would threaten the town’s other unique asset in its scenic, undeveloped countryside. What then is a town planning committee to do?
Likely Impacts of Large Lot Zoning on Local and Regional Housing Markets

There is growing consensus among the planning committees that unchecked development through out the town would equate with failure of their plans. The discussion now centers on what du jour lot size will be acceptable: 10 acres? 20? 40? Discussion of these proposals includes some committee members and citizens who express concern about the impact on affordability. To paraphrase: “it’s getting so that locals won’t be able to afford to live here”. Were lot sizes held at 20 to 40 acres, current values ($2,000/acre) would yield parcels priced between $40,000 and $80,000. Even with premiums for plottage, 5-acre parcels currently being sold in the area are remarkably affordable at $15,000 to $20,000.

The regulation of lot size could have additional induced effects on existing and new homes. First, if it effectively protects water quality it can be expected to further increase land values. This is fairly straightforward: people prefer better water quality and will pay higher prices to access it (Boyle, Lawson et al. 1998; Krysel, Boyer et al. 2003). The restrictions could also have a demand-induced effect on local existing homes if homebuyers are not willing to substitute homes outside the watershed. In sum, implementation of large lot requirements will likely increase the cost of new and existing housing in the towns that choose to adopt them.

The towns of Long Lake, Madge and Birchwood are also part of a multi-county regional workforce and housing markets. The cities of Hayward, Spooner and Shell Lake all have active programs that subsidize new housing and housing rehabilitation. These small cities are about 15 to 20 minutes from the Long Lake watershed towns. Reduction of the number of low-cost, small rural lots in the region could effectively increase demand for existing and new housing in these municipal areas.

Likely Impacts of Large Lot Zoning on Surface Water Quality

Based on the analysis of lot size, impervious surface, runoff and nutrient delivery, it is in a lake’s best interest to prevent an abundance of small lots from being created in its watershed. Larger lots with larger price tags may eventually lead to larger homes and still more impervious surface, but this is not a foregone conclusion. Homeowners with greater financial capacity could be more apt to employ BMPs that effectively manage stormwater.

Any development potentially deflected from the Long Lake watershed due to regulations will surely end up in another watershed, but in so far as municipalities have some capacity to address stormwater management and treatment, they may be better prepared to contend with any increase in development pressure. The nearby city of Rice Lake, located twenty minutes downstream from the Long Lake dam outlet, will soon reach the threshold size requiring a comprehensive non-point pollution management plan under the Clean Water Act. To the extent that water flowing out of Long Lake and into downstream impoundments is lower in phosphorous due to development regulations, downstream communities will benefit as well.

Conclusions

This paper set out to demonstrate that the relative merits of localism heavily depend on the particular context of its exercise, but that rural localism should be granted greater
immunity to the discriminatory charges often leveled at metropolitan communities. In the case of the Long Lake watershed, this would suggest that the local towns should go forward with their efforts to enact large lot zoning. If housing issues arise as a consequence, the towns should engage their neighboring communities in developing regional solutions. The “raising of the gangplank” on the part of the rural towns is legitimately due to their concern about natural resources and their rural character, and sacrificing these while regional housing opportunities exist would be folly.

The above analysis suggests that the distinction between rural and urban is important to maintain from a policy perspective. Such distinction helps to evaluate the appropriateness of particular land use and housing policies. In rural areas the establishment of new home sites in the countryside is largely an expression of choice rather than necessity. In the absence of a community planning effort or community-based resource management effort, local institutions are unlikely to consider the potential externalities of permitting unchecked rural housing development. Pro-growth advocates are likely to draw on the combined neo-liberal rhetoric of job creation, youth retention, tax relief, and private property rights to argue for lax land use and housing regulations. These policies are unlikely to create jobs and retain youth (Lyon, Felice et al. 1981), lower taxes, or increase anyone’s ability to fulfill their personal aspirations (Barber 1984). The development will, however, despoil the ecology and permanently alter the character of the rural area as it proceeds on the trajectory to exurb, suburb, and eventually to anyplace USA (Salamon 2003).

In cases such as the Long Lake watershed where local, parochial interests coincide with the wider public interest— in this case of protecting public surface waters through restrictions on lot sizes— ancillary governance institutions (state and federal government and courts, universities, non-governmental organizations) should go out of their way to support and defend those local actions that effectively secure the public good. In this way, the local institutions can go forward with greater confidence and determination, both of which will be tested by interests favoring growth irrespective of the public consequence.

This is not to say that localization in housing and land policy is to be supported anywhere and everywhere. Society must remain alert to the possibility that local efforts to protect resources and community character are simply facades for exclusionary motives. Such questionable policies are more likely to exist along the margin of the rural-urban fringe in the zone where character and resource motives are still somewhat valid, but increasingly outweighed by an equally valid need for metropolitan housing. More work is needed to determine the exact location of such fringe zones.

The literature describing “exurbs” is a start, but the current definitions are unsatisfactory in that they describe the fringe on the basis of the commuting patterns around metropolitan areas (Nelson and Dueser 1990; Nelson 1992). As those areas expand and transportation improves, so does the exurban zone. From the rural community’s perspective such definitions can be overly determinative. It places rural areas— especially those just beyond the exurban extent— in the unavoidable path of urban America’s inexorable outward march and denies them any role in shaping their own future. David Theobald’s recent work using actual housing density measured at the census block group level represents a major advance in the area of locating the rural-
urban fringe “from above”, but it remains to be discussed if a single “rural” density can be used across the entire US (Theobald 2001).

Surveillance of fringe local governments (through analysis of their plans and policies) provides one alternative marker of the fringe-rural border. On the rural side one can expect to find communities articulating no-growth philosophies to realistically protect natural resources. On the metropolitan side, one will find communities with “growth management” schemes that largely accommodate new growth but focus on the fiscal impacts to ensure such growth is capable of “paying its own way” (Pogodziński and Sarn 1990). In such places, the debate is no longer over whether or not to sacrifice local natural resources; the matter to be settled is simply one of price.

Regardless of the detection method used, the border is likely to expand as population grows and households express their desire for more space. The rate and direction of expansion will likely vary depending in large part on the political will to sort out wants from needs. Absent a real regional or state led effort to control urban growth (such as that in Portland, OR), the rate at which the fringe expands ought provide an indicator of how well (or how poorly) the devolved, bottoms-up natural resource management scheme works (Braddock 2003).

References


AGRI-ENVIRONMENTAL CONTRACTS AND EQUITY:
ARE THEY COMPATIBLE FOR THE SUPPLY OF RURAL AMENITIES?
(CASE STUDY IN SOUTHERN FRANCE)

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AGRI-ENVIRONMENTAL CONTRACTS AND EQUITY:
ARE THEY COMPATIBLE FOR THE SUPPLY OF RURAL AMENITIES?
(CASE STUDY IN SOUTHERN FRANCE)

1. Introduction

The Farming Acts of the 1960s enabled France and Europe to develop a self-sufficient agricultural sector capable of exporting. The methods adopted were those of the technical modernisation and restructuring of farming operations. However, this model was showing its limits by the mid-1980s. Within the European Union itself, voices were raised against the negative impacts of this intensive farming model on food safety, on the preservation of natural resources (soils, water resources, biodiversity...) and on the demographic, economic and social structure of rural areas. Outside Europe, this model was also challenged in the name of free markets and the deregulation of trade, and because it distorted competition to the detriment of developing countries through exports of European farming surpluses.

In 1992, the European Union began to reform its Common Agricultural Policy, spurred on by the GATT agreements signed in Marrakech in 1994. Gradually, the principles of de-coupling of production subsidies, of ecoconditionality and of modulation came to constitute the new conceptual framework of agricultural policies. Concerning the idea of sustainable development in Member States, the European Union bestowed a major role on agriculture through its environmental and social functions: a normative vision of the multifunctionality of agriculture was thus put forward as a means of implementing sustainable economic and social growth in our societies (Laurent 2002).

In France, this notion was adopted within the framework of the new Farming Act of 1999 designed, according to the farming organisations, "to renew the terms of the contract between agriculture and the Nation" (Hervieu 2002). At the same time, on the occasion of the debate on Agenda 2000 at the Berlin summit, the European Union created the second pillar of...
the Common Agricultural Policy centred on rural development and multifunctionality (Lowe, Buller, and Ward 2002).

On the French as on the European level, the new orientations of farming and rural policy allow for specific public support to encourage agricultural production systems to produce rural amenities and environmental services. These policies also have the declared objective of protecting employment, the rural social fabric and farm revenues, as well as seeking to promote fair allocation of public subsidies and their redistributive nature from the point of view of the social cohesion of rural areas (Butault, Chantreuil, and Dupraz 2002).

However, on the latter point, the previous Common Agricultural Policies have not achieved efficiency and equity in the principles governing the distribution of public funds. Certain authors even consider that they have contributed to the creation of two-tier farming, creating a division between zones given over to intensive agriculture and others concerned with respect for the environment (Alphandéry and Billaud 1996). Moreover, they have not contributed to slowing down the disappearance of farms or to ensuring sufficient revenues for farmers (Fabre and Laurent 1998; Commins 2004).

The purpose of this study is to analyse the distribution norms that are at work implicitly or explicitly in the new French law on farming, as well as the principles of equity that underlie them. First, these norms will be discussed on the theoretical level in terms of the principles of equity and justice. Then, we will analyse, both from an economic and sociological point of view, the selection processes of farmers in relation to a specific agri-environmental contract form called the Contrats Territoriaux d’Exploitation, for the Southwest region of France.

2. Distributive norms, principles of equity and amenities

Although it was not only with the works of J. Rawls (1971) that the social sciences started to show an interest in social justice, it is these studies that have nonetheless provided the impetus and framework for in-depth analysis over the last thirty years. To avoid embarking on a history of social thinking, we will take the 1960s and the years of the post-war boom as the starting point for our analysis. It was in this period that contemporary issues of equity and social justice gained in importance. The setting up in several western countries of a strong Welfare State can help to define the context. Social justice came to lie at the heart of the disciplines of the social sciences. In equal opportunities, in the rights of women or of minorities, in social housing or in access to wealth, the central question of equity was one that came up time and time again. Deriving from a wide range of ideological worlds, the theories of social justice were many (Kellerhals 1995). Within these various movements, a certain crystallization of ideas took place in the 1960s and 1970s on the basis of empirical studies. In this way, a theory of equity was constructed.

2.1 Principles of equity, principles of justice

Even though there was no shortage of thinking on the subject of equity, it did not give rise to a central paradigm. Indeed, it was only with the philosophical contribution of John Rawls that the paradigm of justice as fairness was established. Nonetheless, in sociology or in psychosociology, a theoretical consensus emerged with the definition of three principles. The principle of merit considers that each individual receives proportionally to the effort made. The second apprehends equity by giving to each according to his or her situation, whether they are needy or not; this is the principle of need. Finally, the principle of equality is expressed through a form of equity in which everyone receives the same thing, whatever their situation or contribution. It is accepted today, however, that the distribution of goods, be they...
material or symbolic, is carried out through a system "composed of a mixture of these principles rather than the monopoly of just one of them" (Kellerhals 1995:266).

Rawls' masterly theorisation (1971) established these principles as a paradigm, expressing them a little differently. The philosopher defined two principles of justice endowed with a particular lexical order. The first is the principle of equality of liberty, in which "each person is to have an equal right to the most extensive scheme of equal basic liberties compatible with a similar scheme of liberties for others" (1971:53). The second is in fact composed of two principles: the principle of fair equality of opportunity (functions and positions open to all in conditions of fair and equal opportunities) and the principle of difference (that is to say for the greater benefit of the most severely deprived, within the limits of a fair rate of saving).

The principles of justice as defined by Rawls are just and fair principles. A principle is fair if it respects the two principles presented previously. The Rawlsian conception of justice is built around this edifice and justice is constituted by this whole in its order of precedence. Indeed, the principle of equal liberty dominates the principle of difference in such a way that a society in which the fundamental liberties are not guaranteed cannot be considered a fair society. It is therefore not possible to envisage an improvement in the fate of the most deprived if it should involve a violation of these liberties.

The basis of justice in terms of equity resides in compliance with the principles of justice that prevail over all distribution of wealth in society. Among these principles, it would appear that the principle of difference, the principle which maximizes the expectations of the most deprived, constitutes the aspect of the theory of Rawls which is the most closely compatible with utilitarianism (Van Parijs 1991).

However, the interpretation made of this philosophical contribution varies from one discipline to another, and from one standpoint to another. We can wonder how close the empirical principles (the principle of merit, the principle of need and the principle of equality) highlighted in social science studies are to those of Rawls. There is a close convergence between the principle of equity in terms of equality and Rawls' principle of equal liberty. For the philosopher, each individual placed in their original position possesses primary goods of a natural (health, talents...) and social (rights, fundamental liberties, revenues...) character. It is to protect these goods that a common agreement is necessary. The principle of equality therefore aims to protect the basic liberties related to these primary goods such as political freedom, freedom of expression, freedom of the individual from oppression, personal property rights.

The particular case of equity of an egalitarian nature corresponds to a situation in which the first principle of justice coincides with the principle of equality supported by sociological approaches. The match between the two, however, is not reciprocal. The principle of equality is only a particular case of the first Rawls' principle. The other two principles coincide, on the philosophical level, with the idea of equity according to merit and according to need.

Nevertheless, a major difference is found in the ongoing adjustment of the social principles which are constantly adjusting to changes in society, whereas in Rawls, the principles are the very foundation of the social contract; as a result, the former are necessarily reflexive in nature whereas the latter are immutable. A second difference relates to the predefined lexical order that the principles must follow in the Rawlsian theory of justice, while in sociology, they do not observe any hierarchy. There is therefore material for debate as to the fact of whether the principles of equity based on merit and on need are always compatible with a society which aims to be equitable and egalitarian. We propose to approach this question by getting away from the philosophical debate to examine the question of resource distribution from economic and sociological standpoints.
2.2 Justice and distribution of wealth: the nature of the ‘social contract’

The principles of equity bring us to the debate on distributive justice (Rawls 1971). The theory of justice in terms of equity proposes an alternative to the utilitarian vision of economics in which the main objective is the maximisation of social welfare with no reference to the distribution of this among individuals. Rawls supports the idea that justice should not focus on welfare as such but should seek to provide individuals with primary goods. Thus, to achieve a certain degree of egalitarianism, the criterion of choice is the ‘maximin’ which is founded on the principle of difference. According to this principle, each allocation should be assessed in terms of its impact on the situation of the individuals who are the most deprived of these goods. An important aspect of the Rawlsian vision, contrary to the egalitarian vision, is thus to accept the persistence of a certain inequality in distribution if, and only if, the introduction of inequality constitutes a necessary condition to improve the situation of the most deprived.

However, in its widest acceptance, distribution takes us beyond mere market goods because society is like a distribution operator (Ricoeur 1988). It is to this society that individuals sign up by contract: “the object of the idea of justice is thus the [...] distributive structure of the basic social phenomenon” Ricoeur (1988:131). It is this idea that we understand here.

In this perspective, equity can be approached in two different ways. One approach is to look at the rules of procedure that aim to set up a fair framework enabling individuals to find a place (in relation with the three principles of justice evoked) on the basis of an initial contract (theory first put forward by Hobbes) founded on common political values. In this effect, society is treated “as a congregational, mutualist phenomenon” Ricoeur (1988:131). In a procedural approach to achieve fair distribution, three stages emerge: the choice of the independent criterion aimed at deciding on the fair result, the definition of the procedure to be followed, and the result. Sociology focuses on the choice of an independent criterion and considers justice as being in a process of perpetual redefinition (Pharo 1998). For Habermas (1984), it is in the debate between the actors that the values, fair and unfair, are defined. Agreement is found on the basis of a practical reason commonly accepted by the actors. Ferry (2000) refers to a consensus by confrontation which achieves a collective unity of agreement.

Economists, on the other hand, turn their attention more closely to the result of the distribution, placing the emphasis on Rawls’ second principle (composed of the principle of equality of opportunities and difference principle). They look at whether distribution succeeds in reducing inequalities and favouring the less privileged, or not.

In this theoretical framework of justice, public intervention aiming to encourage farmers to produce amenities is approached from this twofold viewpoint, complementary and constructive. The question of amenities, exemplified by the French Constats territoriales d’exploitation, will be studied in terms of the principles of justice selected for the distribution of public aid. The sociological view focuses on the process of negotiation by which the principles to be applied were chosen, while the economic view looks at how the results match up to the principles considered.

However, this approach translates only the equity between farmers belonging to the same generation. We will now take a look at how intergenerational equity could be legitimised.

2.3 Intergenerational perspective and environmental responsibility

The Rawlsian principles of justice which prevail over all distribution of wealth in society allow for the respect of intragenerational equity, whatever the generation being considered. However, the author expresses reluctance at the idea of using one of them, the principle of difference, for the purposes of intergenerational equity for it does not guarantee that the fair rate of saving will be determined. This being the case, if we wish to consider a production of amenities that favours the long-term protection of the environment, it is necessary to define a
principle that enables the implementation of intertemporal distributive justice while taking into consideration the welfare of future generations.

According to the OECD (1999), rural amenities are defined as natural or man-made goods that the public appreciates regardless of the role they might have in production processes. In the economic literature, amenities are generally assimilated with positive externalities of production and associated with a given territory. Moreover, rural amenities are made up of the set of environmental services associated with the presence of natural habitats which deliver benefits associated with their use (for instance the hydrological processes provided by wetlands) or non-use (determination to conserve irreplaceable species or habitats for the future). More generally, they are wild areas, cultivated landscapes, historic monuments, traditional crops, locations for recreational activities (hunting, fishing)… Rural amenities are by their very nature endowed with particular economic and societal values (Bonnieux, Rainelli, and Vermersch 1998). The economic values are use and non-use values: option, existence and bequest values.

Within the framework of the implementation of the multifunctionality of agriculture by the European Union, an intergenerational perspective put an emphasis on bequest and existence values. Only these two values imply a bond between two generations belonging to different moments in the period of time in question.

From a theoretical point of view, one pertinent approach to the analysis of the intergenerational perspective in relation to the ethical dimension of the environment can be constituted by Jonas’ Responsibility principle (1979). In the philosopher’s approach, the ethical dimension of the natural environment is based on the existence of intergenerational solidarity. The Responsibility principle fundamentally constitutes an essential principle of human action and is expressed as follows: “Act in such a way that the effects of your action are compatible with the permanence of authentically human life on earth.” (1990:30) He indicates that the individual has the power to cause humanity to run a risk, but does not have the right to do so. The intervention of the ethical thus becomes legitimate for it regulates the power of the individual to act, to be aware of and responsible for his or her acts.

In his approach, Jonas takes into account the global dimension of the human species. Human actions is linked to the conscience of humanity and humanity must make sure it does not mortgage the well-being of as-yet-unborn generations by respecting ecological balance. Nature as an object of human responsibility enters the field of the ethic. In this ethic, Jonas refers implicitly to values of nature that are independent of any usage (bequest and existence values) when he writes: “[…] the solidarity of destiny between man and nature […] also brings us to rediscover the autonomous dignity of nature and orders us to respect its integrity above and beyond the utilitarian aspect.” (1990:188)

Under these conditions, obligations must be defined in order to limit the power of action in order to conserve the integrity of nature and preserve the existence of humanity. The naturalistic approach of the philosopher consists in taking into consideration indirect obligations, with the preservation of the conditions for the existence of humans on earth, and direct obligations, by attributing an intrinsic value to nature (Larrère and Larrière 1997).

In an intergenerational perspective, the Responsibility principle supposes a break with the reciprocity that traditionally links obligations and rights. Considering that future generations cannot demand rights or respect obligations with regard to the present generations, Jonas confers on the Responsibility principle an ethical translation of irreversibility. By nature, the obligations are not contractual. As a result, intergenerational equity is asymmetrical: it invites us to define the rights and duties of the present generations with regard to generations to come.

In considering the effects of human activities on the earth (greenhouse gas emissions, exhaustion of natural resources), we should adopt collective actions which consider the
environment in its global dimension, both spatial and temporal. The Responsibility principle thus implies the implementation of preservation ethics by public and not private means. On this subject, Jonas writes: "If the sphere of production has invested the space of essential action, then morality must invest the sphere of production from which it was excluded in the past, and must do so in the form of public policy." Jonas (1990:28). The rationality of the choice of the public decision-maker becomes a 'collective' rationality in that the compliance of the community with the Responsibility principle depends above all on its social recognition. The legitimacy of the obligations is based on norms and rules accepted by society as a whole.

Such a vision is quite pertinent in the management of rural amenities so that future generations can benefit from their existence. The role of the State in defining the terms by which they will be distributed between the generations is essential here, for market mechanisms cannot take into account a future social demand for these resources.

3. Agricultural Multifunctionality and public subsidies: a way of achieving fairness?

3.1 Analysis of a specific agri-environmental contract: CTE

For several years now, the multifunctional character of agriculture has been very present in public policies in recognition of the existence of a social demand for non-market services of an environmental nature (Romstad 1999; Randall 2002). In this context, the normative approach of multifunctionality is based on the idea that agriculture does not only supply food products and raw materials. It has two other major functions: social and environmental.

The first contributes to the viability of rural areas and to local development by creating jobs in the primary production sector as well as in the processing and supply circuits. It plays a role in maintaining, recreating or reinventing rural social bonds. It serves as a territorial anchor for the development of a sense of local belonging and of citizenship. The second concerns the production of rural amenities whose existence confers an ecological and patrimonial value on rural areas. Besides this, these social amenities can also reinforce the social bond: for example, landscape development favours the protection of natural resources, but can also contribute indirectly to the development of tourism and associative action within the territory.

The Farming Act of 9 July 1999 marked, in France, the commitment of the government to the implementation of agri-environmental measures by creating the Contrat Territorial d'Exploitation (CTE). Founded on the recognition of the multifunctionality of agriculture, the CTE is based on a contract in which the farmer undertakes to develop multifunctional farming activity which contributes to the creation of added value while ensuring the protection of natural resources, of landscapes and of biological diversity, as well as equilibrium of the territory and employment.

The contract is made up of two components: an 'economic and social' and an 'environmental' which include agri-environmental (AEM) funds. The farmer can undertake to take environmentally friendly measures, but also to make the necessary investments for the viability of his business. The environmental protection measures are set out in a schedule validated by the European Union. Their aim is to minimise the negative impacts of farming activity on natural resources and to encourage the production of rural amenities such as the landscape, water quality and biodiversity.

Several studies in France have tried to assess the impact of the first measures taken to decouple farming subsidies on the reduction of inequalities in earnings. On the basis of the farm revenue data, it would appear that de-coupling has accentuated the role of the surface area of the farming operations in the formation of disparities in farmer earnings. Actually, the CTE is a tool that favours large farm operations and supports certain sectors more than others (Butault, Chantresl and Dupraz 2002).
We will study the way in which the distributive norms implemented in the CTE influence inequalities between large and small farms in access to public subsidies on the one hand, and analyse the redistributive impact of this tool on the other.

Although, it is difficult to state that the sense of justice debated during the standard contract negotiation has a direct impact on the economic inequality between contracting and non-contracting farmers. We will analyse the principles of equity underlying the sharing out of the environmental effort associated with this distribution mechanism.

3.2 Principles of justice and inequalities in earnings among farmers

Our study covers one French département: the Dordogne. Agriculture in the area still occupies almost 330,000 ha, or 40% of the territory. The choice of this département was based on four characteristics that are relevant to multifunctionality. First and foremost, the whole of the département lies within the intervention zone of the European Union regarding the structural funds intended to promote rural development. Next, the farms tend to be rather small in size with an average of 29 ha against 42 ha nationally. The third characteristic concerns the great diversification of farm production. Alongside the widespread system of mixed farming – livestock rearing, we can identify 16 production sectors of which the largest are cattle and sheep breeding, arable crops (wheat, corn and oleaginous and protein plants), vines and fruit trees. The other sectors are essentially specialised production such as tobacco, walnuts, fattened ducks and geese, strawberries, chestnuts and truffles. Lastly, the move towards the contracts under the CTE system is currently one of the strongest in France. With 657 contracts as of June 2002, the Dordogne ranks among the top 5 French départements in terms of the number of CTEs signed.

As early as 1998 (more than a year before the law was promulgated), the Dordogne positioned itself as a pilot département. While the outline of the implementation procedure had already been defined (institutions concerned, duration of the contract), the objectives remained to be specified. A certain amount of room for manoeuvre was therefore left to the departmental institutions, in particular regarding adjustments of the content of the contracts to the desired orientations of local farming. A working group was set up for this purpose with the ultimate goal of writing up standard contracts.

The institutions involved in this debate in the département came from the agricultural world and from the environmental world in order to encourage the complementary approaches required in the production of rural amenities. The participants from the farming sector were from professional, administrative or economic backgrounds. Less numerous and necessarily more discreet in a collective group where the balance of power was against them, the participants with environmental skills were State agents, representatives of environmental protection associations or local authorities. In the course of the consultation process, the contours of the multifunctionality of agriculture in the département were specified (Cardon and Chabert 2003). The justice we can read into this is the result of the cooperation between these protagonists, thus leaving in suspense the question of a more wide-ranging political and moral consensus on the scale of society as a whole.

The debate revolved around the general orientations of the CTE working on the basis of the political proposals put forward by the various participants. Certain farming professionals (the Chamber of Agriculture, in particular) saw in the CTE the possibility of receiving public aid that had hitherto been difficult to get for small farms in France. As well as this, funding dedicated to the production of amenities and not to the production of foodstuffs was seen by them as particularly welcome to readjust the distribution of public funding between the farmers in the country as a whole. Implicitly, it is the distributive principle of need that the participants wanted to apply by taking into consideration not the volume produced by each farm, but the productive unit itself: each farm should be “entitled”
to received public subsidies, even if it plays only a small role in the production of market agricultural goods.

This political objective is similar to another objective that came up, the survival of the largest possible number of farms. This objective was shared by all the participants, wishing to slow down the loss of vitality of rural areas. In this respect, public aid is perceived as being an additional revenue that improves, or even restores, the viability of certain farms. This conception led the elected representatives of farming professionals to favour access for all farmers to the CTEs. Each farmer, whatever the size and type of production of their farm, must be able to sign a CTE. It must suffice to be a farmer, either full-time or with other activities. For this norm of equality really to apply, the issue in preparing the standard contracts was to propose specifications placing the contracts within reach of everybody.

Finally, all the signatures up to the end of the year 2002 concerned two standard contracts: the first, entitled 'recognised quality' and the second, 'added value and diversification'. These two standard contracts attract only 6% of the eligible farmers (farmers under the age of 55) covering 10% of the utilised agricultural area. Moreover, statistical analysis of the CTEs signed show that, in full, large farms were privileged. The average farmed surface area of the farms that signed a CTE was around 59 ha, while the average for the département is 29 ha. The proportion of small farmers (farm of less than 30 ha) in the sample is 26%, when in the agricultural census of 2000 they represented a proportion of 67%.

To go into this result in more depth, we can ask two questions: 1/ were the small farms that signed a CTEs advantaged in relation to the larger ones? 2/ have the CTEs made it possible to reduce inequalities in earnings between farmers?

Concerning the economic component of the contracts, the principle selected on the national level was to provide partial financing for economic investments aiming to improve the viability of farms, with a ceiling imposed on the amounts granted. In the case of the Dordogne, the average proportion of the investments engaged and funded by the CTE came to only 34%. Investment capacity being closely linked to the economic vitality of the farms themselves, it is therefore not surprising to note a positive correlation between the value of the gross farm income and the total amount of the economic investments undertaken. In other words, the farms with the highest gross income had the possibility to undertake bigger investments.

Concerning the environmental section, the value of the Gini index relating to the distribution of AEM aid was 0.40. Thus, AEM aid slightly favoured the big farms. But if we break down the inequality index between the part explained by intragroup inequality (in this case, inequality between the small farms on the one hand, and inequality among the bigger farms on the other) and the part explained by inequality between the two groups, we notice that 60% of the inequality is explained by intragroup inequality. On top of this, the distribution of the AEM among the smaller farms is less egalitarian with a Gini index value of 0.40, against 0.36 for the distribution of the AEM among the big farms.

Despite the persistence of this inequality in the distribution of aid, the AEM have a redistributive effect among the farmers and have enabled a reduction mainly in the inequalities between large and small farms on the basis of their farm income (gross annual income). Thus, the Gini index for the distribution of gross farm income between farmers was 0.36. After the distribution of the AEM, if the revenue conditions applied to signatories do not change, the Gini index value goes down to 0.28, resulting in the proportion explained by inter-group inequality going from 36% to 21%. Inequality in earnings is therefore explained mainly by inequalities within each category of farmer, inequalities which are mainly linked with the crop type.
These results provide timid confirmation of the application of the Rawlsian equity principle which accepts the persistence of a certain inequality to improve the situation of those who are most deprived. Indeed, we have observed that even if distribution of the AEM remains non-egalitarian because strongly dependent on farm size, it has enabled both an improvement in the earnings of small farms and a reduction in the gap between large and small farm earnings.

3.3 Production of amenities and equity between farmers

In the handling of the environmental dimension of the contract, the representatives of the 'environmental cause' wanted the risks and damage to be mapped. Whether it be a question of water pollution, of the preservation of landscapes or the conservation of habitats specific to certain species of flora or fauna, the drawing up of this map implied that the farmers in the zones targeted be obliged to commit themselves to certain agri-environmental measures in signing the contract. In this case, the fact that the farmers receive public subsidies is justified, above all, by the effort made by the farmer in terms of amenity production. The distribution of funding therefore obeys the principle of merit.

However, the application of this principle was a cause for debate. The case of the maintenance of spaces to produce landscapes is an interesting case in point. The question was to know whether farmers who already maintained the forest edges and riverbanks would be able to sign up to the AEM specific to these measures. In principle, public subsidies are supposed to be paid out to compensate for the additional work created by adopting new ways of doing things. They should not therefore be paid out for existing practices. This 'non-remuneration of existing work' was deemed unfair by the farm representatives and the farmers in question: the 'good' farmers would not be able to sign up for the AEM if they had already adopted the practices producing these amenities. Only those who had not respected such practices until now would be able to benefit from public aid. We can therefore wonder what the profound motivations of these new adopters are: the attraction of financial gain or a real desire for change?

The representatives of the 'environmentalists' also consider this situation to be questionable in that the farmers concerned by the CTE system are the very producers who have been at the forefront of the intensification and specialisation of farming and have therefore participated greatly in the deterioration of the environment. This situation reveals a paradox: those who, yesterday, harmed the environment, today find themselves in a position to receive public funding to repair the environmental damage caused, while those who have continued to apply extensive farming practices are excluded.

Going beyond the issue of encouraging changes in farming practices, the environmentalists also consider that the production of amenities by farming activities would gain from granting symbolic recognition to these existing practices by awarding them financial remuneration. This would amount to applying the distributive norm not only on future merit but also on past merit.

The consideration of past merits brings us back to the question of the fair remuneration of the non-market services provided by agriculture. The mobilisation of the notion of externality or of public good to deal with environmental services, services that are consumed free of charge by beneficiaries, renders public intervention indispensable to correct market failures in coordinating the supply of amenities. This being the case, an amenity production funding policy would appear to be indispensable to satisfy the social demand. In this framework, those farmers who have favoured practices that are respectful of the environment should also be concerned by the subsidies. However, the amount would not be calculated on the basis of the additional cost incurred by the farmer, but of the economic value of the non-market services provided to society. Such a distribution norm would be based on perfect equality between the farmers-amenity producers, irrespective of any objective of
redistribution. Having said this, the amount of aid calculated on the basis of this economic value could well remain insufficient as an incentive for farmers to sign contracts.

4. Conclusion

The CTE leads to a mode of regulation which tends towards Rawls’ principle of equity. It is a non-egalitarian tool which nonetheless enables equitable distributive justice between the farmers who sign the contracts. Indeed, the earnings gap between farmers with small operations and those with large farms is reduced appreciably. But the fact that not all farmers have signed CTEs reveals a certain inefficiency of the distribution mechanism. A large number of small farms have been excluded from the system, contrary to the wishes of the institutional protagonists involved in preparing the standard contracts. The CTE is therefore a redistribution tool that is of a low level of efficiency.

However, the results of our analysis are the result of an empirical exploration whose scope is limited to the examination of a single French département. Although we should not generalise, a number of other studies point in the same direction, observing the exclusion of small farms from the system (Dupraz, Léon, and Pech 2001; Fabre and Laurent 1998). Looking beyond this redistributive dimension, our analysis also reveals the incompatibility that exists between the principle of equality—invoked in relation to maintaining social vitality of rural areas—and the principle of merit—invoked in the production of amenities. This being the case, the two objectives being pursued simultaneously by the CTE turn out to be irreconcilable from the point of view of equity. One possible approach would be to design an instrument of public intervention for each of these objectives. Another possible approach, inspired by Rawls, would make it possible to overcome this incompatibility by introducing a hierarchy establishing the principle of equality as the premier principle. This would amount to stating that the vitality of rural areas by maintaining the largest possible number of farms constitutes the priority objective to be achieved and to which the production of amenities by farmers would be subordinated.

Consequently, the selective character of the CTE should be corrected to make the contract accessible to the greater majority of farmers. This would imply challenging the selection criteria (notably earnings levels) and remuneration norms based exclusively on land surface area. Moreover, this brings us back to the social norms defining the ‘good’ farmer, norms communicated by the institutions and which are the reason why certain farmers are not part of the networks of the institutions responsible for implementing the CTEs.

As well as this, these principles of justice only take into account equity between farmers. Yet the production of amenities by the funding of AEM in the CTE is politically justified in the name of the multifunctionality of agriculture by granting this multifunctionality an important role in sustainable development. The production of amenities encouraged in this way must be of benefit to all citizens thus making it possible to legitimise the public funds given to agriculture. It must also be of benefit to future generations by preserving environmental resources as Jones’ Responsibility principle calls on us to do.

Finally, the subordination of the production of amenities to the preservation of the largest possible number of farms can constitute an equitable aid policy. The European argument of preserving farms for the production of these goods and services is therefore fair. In addition, it confers legitimacy to the valorisation of the amenities in a non-market framework. In this respect, we note that if we take into consideration other environmental functions of the agriculture, notably in terms of carbon sequestration or climate stabilisation, rural amenities would be a major part of an agricultural policy in achieving sustainable development in Europe.
References


Annexe

Graph 1. Lorenz's Curve about the AEM distribution between farmers

[Diagram]

Graph 2. Lorenz's Curve about income distribution (before and after Amé subsidies)

[Diagram]
Notes


2. The complete “de-coupling” of farm subsidies from the act of production consists in converting most of the current subsidies into a one-off payment to be paid out to farmers on the basis of the surface area of land that they farm, irrespective of the type of crops or livestock, or the volume of production sold. In addition, the principle of eco-conditionality makes payment conditional on compliance with 18 regulatory requirements in the field of the environment, food safety, animal and plant health and animal welfare. As for the principle of modulation, it institutes slight discrimination in favour of smaller farms by exempting them from a planned reduction of 5% in the single payment (Franca et al. 2004).

3. Bearing in mind that this theme is central to the work of philosophers. The theory of justice in terms of equity is itself the offspring of a Kantian interpretation.

4. Two major disciplines which deal with this theme.

5. In his preface to the French edition, Rawls (1987:12) replaces this principle by the principle of unity. “I continue to think that the principle of difference is important and I will continue to defend it, on the condition that it is accompanied by institutions respecting the two prior principles. But it should be recognised that this argument is not a given and will never have the force of the one in favour of the two earlier principles.”

6. The principles of justice are elaborated through a (virtual) negotiation between individuals belonging to different generations without any of them being aware of their position or function, in accordance with the hypothesis of the veil of ignorance. Consequently, the original position is a purely hypothetical position.

7. This is not specific to the theory of Rawls, but goes back as far as Hobbes (1588-1679), guiding all philosophical thinking on the social contract and giving rise, later, with Bentham (1748-1832), to the utilitarian movement.

8. Jonas does not have an anthropocentric vision of ethics: it is because of the danger the human species represents for nature that it also represents a threat to its own survival. The technological
Amenity-led Development of Rural Areas:
The example of the Regional Action Pilot Program in Germany

by Karlheinz Knickel & Sarah Peter

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Abstract

The 'Regional Action - Rural Areas Shaping the Future' pilot program in Germany, which was initiated by the Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL) in 2001, provides a practical example for a future-oriented policy measure that corresponds with new ideas of rural governance as well as more recent trends in EU level policy formulation. It has been implemented in order to trial-test a new integrated, bottom-up approach to regional development, acknowledging the need for rural areas to better integrate and strengthen their various functions, to more effectively use available resources, to actively create synergies between different fields of development and to create new sources of income. The relevant regional actors, institutions and stakeholders are encouraged to devise integrated development concepts that are geared to the particular regional situation, including co-operative structures (the so-called 'regional partnerships'). The visions that have been developed and the new co-operative structures constitute the basis for the implementation of the program. Policy makers expect the 18 model regions, which have been provided with a support framework over the period from 2002 to 2005, to deliver best-practice models for sustainable development of rural areas.

A particularly important aspect for the realization of these visions has proven to be the cooperation between farmers, conservation groups, small processing companies, the catering and restaurant sector and businesses involved in rural and 'green' tourism. Increasingly, cultural landscapes are perceived as an asset in the development of rural areas. Actors refer to the reassessment of the use of natural resources and the aim of contributing to the quality of living conditions in rural areas. A closely related dimension is the redefinition of relationships between rural and urban areas (cities).

The accompanying research, which is being carried out by the Institute for Rural Development Research (IFL) at Goethe University Frankfurt, documents a heightened awareness of the specific regional potential among regional actors, which might help to discover new possibilities for multifunctional agriculture and amenity-led development in rural areas. In this paper, the emphasis is on the networks involved in the implementation of the program, the key features of the public policy frameworks and the reconstitution of nature-society relations. Reference is made to the redefinition of 'production', the rediscovery of the multifunctionality of agriculture, the interconnectedness of agricultural and rural development and the active creation of synergies at the farm household, farm and regional level in rural development initiatives.

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I. Introduction

A. Shift of European agricultural policy towards multifunctionality

With the Agenda 2000 reform, the European Union made sustainability and multifunctionality key objectives of its Common Agricultural Policy (CAP) and reinforced and introduced a number of measures to promote environmental protection. Member states now have the possibility of withdrawing support payments in cases of non-compliance with environmental requirements. They can also reward farmers who, on a voluntary basis, provide environmental services to protect and enhance the quality of the natural environment, including biodiversity. Increasingly, European society perceives an intact natural environment as a prerequisite for physical and psychological well-being.

Cultural landscapes are increasingly regarded as being at the heart of European society's concern about the future of agriculture and land use. Finding a new balance between societal demands for high environmental quality and the pressures resulting from competition in a market economy is a key issue. New development models aim at sustainable agriculture and maintaining biological and landscape diversity. The European Landscape Convention from 2000 is proof of the increasing interest in the legacy of hallowed places (KNICKEL & VAN DER PLOEG, 2004). Fulfilling this need is particularly urgent in intensively used areas. Given agricultural production systems range from integrated and often intensive systems, which are competitive on international markets but which have only a basic responsibility for biological and landscape diversity, to agricultural systems that focus on the important task of maintaining and developing a rich diversity of nature and landscape values in more marginal areas. It is acknowledged that agriculture provides rural and environmental amenities, and contributes to the maintenance of cultural heritage, the economic viability of rural areas and more localized environmental support (KNICKEL, RENTING & VAN DER PLOEG, 2004).

For a long time, the CAP, laid down in the Treaty of Rome in 1958, was focused on increasing agricultural productivity. Against the background of growing political and financial, social and environmental pressures, since the 1980s there had been criticism. But it was not until the Amsterdam Treaty of 1999 that multifunctionality was made a central issue of the so-called 'European Model of Agriculture' (KIRWAN et al., 2004). This is perceived as an important asset, which was described by the EUROPEAN COMMISSION (2002) as:

- a modern and competitive farming sector, capable of occupying a leading position in the world market, while safeguarding domestic producers' living standards and income;
- a sustainable, efficient farming sector that uses hygienic, environmentally friendly production methods and guarantees the quality products they desire; and
- a farming sector that serves rural communities, reflecting their rich tradition and diversity, and whose role is not only to produce food but also to guarantee the survival of the countryside as a place to live, and work, and as an environment in itself.

For the first time, the fact that the diversity of countryside and rural life is inextricably related to agriculture has been recognized explicitly. The Rural Development Regulation of 1999 (RDR; Reg. EC/1257/99) is the logical outcome of this paradigm shift. It aims at an integrated policy for rural areas, thereby providing increasing chances not only for a more balanced development of rural areas but also for the provision of rural and environmental amenities and nature protection. Development programs associated with the RDR serve to help rural areas maintain their natural living conditions and secure employment in addition to the traditional provision of food and raw material (KNICKEL, 2001).

Within the new paradigm, which has replaced the principle of continually increasing productivity, production remains as only one function of agriculture (KNICKEL, 2001; PRETTY, 1998). This new orientation implies that the agricultural occupation is redefined in these terms, and that farmers must acquire new skills, in order to fulfill what HERBIJEU (2003) calls a 'synthesis profession'. The guiding idea is that through multifunctionality, agricultural enterprises can create a broader basis of income generation and at the same time gain greater appreciation of their outputs from society (KNICKEL, 2001; KNAGST, 2001). The unique multifunctional potential of agriculture is grounded in its multiple commodity (food, non-food crops) and non-commodity outputs (environmental, social, cultural achievements) (HERBIJEU, 2003; MEISTER, 2001). This problem is that does not reward most of the latter financially. This is a gap that policy must still fill (HERBIJEU, 2003). Optimal space amenities must generally be seen as non-commodity outputs of agriculture (ABLER, 2003, WINTER, 2003). At the same time, however, the aesthetic and cultural value of agricultural landscapes can be a considerable extent be turned into monetary value, for example, by exploiting rural tourist potential (KNICKEL, 2001; PRETTY, 2002). This is expected in the case of a significant number of the projects in the model regions, which will be presented later on in this paper.

PRETTY (2002) and HOFFMANN (2000) argue that agriculture contributes to landscape and nature preservation, not in spite of, but through land use. The variety of agricultural-related habitats depends on the agricultural system diversity. A current report by the EUROPEAN ENVIRONMENT AGENCY (EEA, 2004) demonstrates that only extreme types of development - increasing intensification in spite of policy reforms and alternatively abandonment of agricultural land - both lead to a rapid decline of agriculture-dependent biodiversity. At the same time, high nature value farmland has become an important policy focus, as measures like the Pan-European Biological and Landscape Diversity Strategy (PEBLS), the European Landscape Convention, the Birds Directive (79/406/EEC) and the Habitat Directive (92/43/EEC), or the Biodiversity Action Plan for Agriculture show. The 6th EU Environmental Action Program aims at halting biodiversity decline by 2010 by conserving high nature value farmland. According to the EEA report, 15-25 percent of agricultural areas in Europe qualify as high nature value farmland, and are mostly located in Eastern and Southern Europe. For example, this encompasses semi-natural grasslands and is usually associated with extensive farming methods. Meanwhile the CAP has become the most important policy framework for the conservation of high nature value farmland, as it obliges member states to implement agri-environmental schemes through its 'second pillar' as well as to restrict all support exclusively to environmentally sound management (EEA, 2004).

B. Economic functions of agriculture remain important

In spite of overall structural changes and new demands, in many regions agriculture does still play a relatively important economic role, just as the major importance of farming for rural development throughout Europe remains. With the saturation of EU food markets, however, diversification of economic activities has become more and more important. For example, chances for agricultural diversification are seen in intersectoral co-operation efforts with other sectors (e.g., tourism, culture). Rural tourism and new intersectoral co-operation efforts have proven to be vital factors for diversification in most model regions and also open up prospects for the positive intensification of urban-rural linkages.

New farm-related and farm-based activities and markets are developing and existing ones are changing as an expression of new relations between agriculture and society as well as between cities and their surrounding countryside. An overview of such activities is provided in Table 1 below. Thus, multifunctional agriculture can be interpreted as a broadening (e.g., management of nature and landscape, agri-tourism, energy crop production) and a deepening (e.g., organic farming, high-quality production, direct marketing) of typical agricultural
ties. Their transformation into new products and services demanded by society has to be coupled with a cross-sectoral re-orientation (Knuckel, Renting & van der Ploeg, 2004).

Table 1: Farm-related activities and their function, market potential and policy dependence

<table>
<thead>
<tr>
<th>Activity</th>
<th>Function *</th>
<th>Market potential</th>
<th>Policy dependence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Organic) food production</td>
<td>Production</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Non-food fibre production</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bio-energy</td>
<td>Energy</td>
<td>++</td>
<td>++ b</td>
</tr>
<tr>
<td>Quality and regional production</td>
<td>Supply (local, regional); cultural heritage</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Management of the landscape</td>
<td>Landscape and open space; prevention of natural hazards; groundwater recharge; cultural heritage</td>
<td>++</td>
<td>++ b</td>
</tr>
<tr>
<td>Protection of biotopes and wildlife</td>
<td>Biodiversity</td>
<td>++</td>
<td>++ b</td>
</tr>
<tr>
<td>Agri-tourism</td>
<td>Leisure; cultural heritage</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>New farm-based activities (care, etc.)</td>
<td>Services; supply</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Part-time farming</td>
<td>Rural economic viability</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>All (economic) activities</td>
<td>Income and employment; rural economic viability; cultural heritage</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

* Defined in terms of commodity and non-commodity output
* * Multiply by reason of the lack of internationalization of the external costs of unsustainable resource consumption

Source: Knuckel, Renting & van der Ploeg (2009)

The large number of activities that can be observed in rural areas and that are related to farm households and farming activities have three main characteristics (van der Ploeg et al., 2002):

- The activities are an expression of new relations between agriculture and society, city and countryside; they constitute a response to new societal needs.
- By mobilizing new revenues and finding new forms of organization, co-operation and cost reduction, the activities represent new responses to the price-squeeze in the food sector.
- The activities stand for a reconfiguration of farm resources and their relation with rural areas, food supply chains and the institutional environment.

A key question in current discussions in academic and policy circles as well as among economic actors is to what extent such new activities require public support and what the most efficient policy approaches and support measures are.

II. The Regional Action pilot program

A. The situation of agriculture and rural areas in Germany and Europe

Before presenting one specific policy initiative with very high potential for policy-practice synergies, a brief account of the present situation of agriculture and rural areas in Germany and Europe will be given.

Changes in agricultural land use are closely linked with changes in agricultural structures that can be described well in terms of some characteristic farm and regional level processes (see for example European Commission 1997; European Environmental Agency, 1998; Knuckel, 1990):

- Farm growth and specialization, representing the multifunctional, production-oriented development path, which is strongly linked to the globalization of markets and the industrialization of food production;
- Concentration of production, income and employment at the regional level and, simultaneously, the marginalization of less-favored, mountainous areas and of regions that are more distant from processing industries and markets (polarization).

The share of primary agricultural production in the gross added value of the German economy has decreased from 3.4 percent in the year 1970 to 1.2 percent in the year 1999, and thus by more than half. The proportion of the labor force working in this sector dropped from 4.1 percent in the year 1991 to 2.7 percent in 1999. This corresponds with figures for European agriculture: In the six founding EU member states, the number of farms fell by 42 percent between 1967 and 1997, a loss of 2.7 million farms. Between 1987 and 1997 alone, the number of farms fell by 24 percent in the EU-12 (Barrotta, Breiden, 2002). The decrease in the number of agricultural holdings is matched by an even more pronounced decline in agricultural employment.

A process that has received much less attention while it has become more and more important is the diversification of agriculture, the development of new farm-based or farming-related services such as landscape management, an increasing quality orientation and a focus on regional products and markets. Diverse patterns of income generation and a focus on regional markets have become more important once again. In this respect, the diversity of agriculture and food traditions can be regarded as a strength. To an increasing extent, food quality is embodied by a blend of attributes, including taste, safety, environment, regional authenticity, and artisanal craftsmanship. Altenstein (2000) specifically points out the market advantages that are available to food and non-food producers, processors and retailers who can document and deliver environmental benefits, and he emphasizes that European consumers are more and more interested in food products with "emotional qualities". He refers to consumers wanting food products that tell a story or are linked with a (pleasant) experience (for example farm shopping experience, holiday, childhood), products that are not anonymous (that is, the producer is known to the consumer) and that are "from the region" (because the emotional ties people have to their region are transferred to the product), authentic products that have a guaranteed, "real" quality, products that are linked with prestige or a particular lifestyle or products that are simply likeable because they are well known to the consumer and emotionally positioned in the market.

B. Objectives of the Regional Action pilot program

In light of this broad background of mega-trends affecting rural areas (structural change, diversification, increasing demands for food quality and environmental quality) there are very significant regional differences. Rural areas are characterized by a large range of diversity, a fact to which policy-makers have not always given sufficient consideration in the past. Nature, culture and agriculture in the Allgäu region in southern Bavaria are entirely different from the conditions found in the Enseland region in northwestern Germany, for example. The Barln-Ückermark region in one of the new states in eastern Germany has a 22 percent unemployment rate, one of the highest in the country. By contrast, the Oberland - a typical rural area in Bavaria - only has a 6 percent rate of unemployment. With regard to the kinds of support required, it is important that the particular regional situations are taken into account by local development agencies, national governments and the EU when developing policies designed to support these new activities. As elsewhere in Europe, there are no standard solutions
for development in rural areas and, as a result of that, new bottom-up policy approaches in support of sustainable development in rural areas are being tested.

The pilot program 'Regional Action - Rural Areas Shaping the Future' is an example of a new type of support scheme that specifically addresses the development of new economic activities as well as their linkages with the enhancement of environmental quality. It was initiated in 2001 by the Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL) in Germany. The Regional Action program is expected to provide a concrete translation of the idea of the 'agrarpendende' (agricultural turnaround) into practice (KNOCKEL, 2004). The 'agrarpendende' was supported in the course of the recollection of German agricultural policy, which was a response to massive pressures resulting from the BSE crisis.

This program provides support for the realization of sub-county level, micro-region-specific development concepts devised by regional level actors, institutions and stakeholders (BMVEL, 2002). The size of the micro-regions ranges from 320 sq km to 5,800 sq km; the typical size is 1,500 and 2,000 sq km. The pilot regions have between 36,000 and 1.2 million inhabitants. As for the definition of 'regions' in the Regional Action program, they are supposed to form functionally or spatially homogenous areas (often coherent landscape units) with common problems and potential, and may encompass several municipalities and districts (BMVEL, 2001).

In the Regional Action pilot program, production quantity has been replaced as the main objective by quality production and local added value of rural areas. The program is a response to consumer demand for high quality, affordable food produced in an animal-friendly manner, and attempts to contribute to the harmonization of agricultural production with the environment. Particularly interesting is the aim of using natural resources more efficiently and adding value to them. The improvement of producer-consumer relations through greater proximity is to be achieved by creating transparent methods of production and marketing. The idea is to counteract the growing 'alienation' (HERNIEU, 2003) between consumers and food production as well as the reduction of farming to merely one link in increasingly more industrialized food supply chains. High quality food production and transparency is now understood to be a central starting point for a renewed 'social contract' and rural development, because it can secure the economic basis of agriculture as well as increase its appreciation in society (NACHHALTIGKEITSRAT, 2001).

Beyond food production, the Regional Action program aims at an integrated and sustainable development of rural areas. A key idea is to better coordinate and strengthen the various functions of rural areas. The active generation of synergy is central to the activities and their combination at the farm and the regional level. While specialization in agricultural production and segmentation of agriculture from other rural activities had been envisaged in the past, the development of functional and amenity-led development is fundamentally different because mutual benefits and 'win-win situations' between different activities appear both strategic and desirable (BRUNORI & ROSSI, 2000; KNICKEL & RENTING, 2000). Processing and direct marketing, for example, frequently lead to an involvement in quality-production. Quite frequently, nature and landscape management ends up triggering an involvement in direct marketing, on-farm processing or organic farming. Agri-tourism is the result of an involvement in direct marketing, on-farm-processing or organic farming. The different combinations are an expression of the creation of synergy at the farm and/or the regional level. Synergy is also expressed in the regional branding of foods, the relative popularity of the newly established product lines and in the linkage between the image of the region and continued development of green tourism. The revitalization and strengthening of urban-rural linkages is a closely related aim, which promises mutual benefits.

C. Implementation

At the beginning of 2002 eighteen regions were chosen by a jury on the basis of the quality of their concepts for integrated and sustainable development of their region. More than 200 regions had taken part in the competition. The concepts presented had to be agreed upon at regional level by those who were actively involved including the major regional interest groups. The design of the pilot program as a competition aimed at encouraging regions to demonstrate greater innovativeness in their development concepts and methods of implementation. Adding value to natural resources had to be part of the regional strategy as presented in the development concept. The winning regions now receive an annual grant of approx. 1.5 million Euros. Through the grant, the Ministry is providing a support framework over the period from 2002 to 2005, thus actively backing up regional development activities, including in particular a regional management structure and the implementation of particularly innovative core projects (BMVEL, 2001). A selection of them will be presented later on in this paper.

Figure 1 provides an overview of organizational structures in a typical model region. The Federal Ministry provides framework steering as a promoter, while detail steering is delegated to the regional level, in accordance with the principle of subsidiarity. Thus, overall federal government interests are safeguarded while the regions are given greater responsibility. Horizontal partnerships within (and to some extent between) the model regions are occupied with vertical partnerships between the model regions and the federal government level.

Figure 1: Overview of organizational structures in a typical model region
(Source: BMVEL, 2001a)

A fundamental aspect of the pilot program is the principle that the regional actors themselves take charge of the development of their region, thus making their superior knowledge of the local situation accessible. The support mechanism tries to encourage community participation and action, to foster local and co-operative initiatives at all levels and to facilitate the creation of new alliances between the relevant groups and joint action. The co-operation structures - the so-called 'regional partnerships' -, which had to be conceptualized as a part of the regional
development concepts, provide the basis for the implementation of the program. In many regions they are constantly being improved. It is expected that these newly formed co-operation structures will provide the foundation for longer-term involvement and co-operation of regional actors in regional development processes. The regional management teams of the model regions function as an important agent for networking and skill building (BMVEL, 2001).

The specific organization in the individual regions is run by a group representative of those who are actively involved. The main idea is to hold decision-making power within the regional partnerships themselves. A regional public body - often the district authorities or the agricultural office - has the responsibility for financial management and budget administration. A regional management team plays a key role in promoting regional networking, supporting project development and interlinking individual projects as well as in preparing decisions in the relevant bodies within the regional partnerships (Knickel et al., 2004). The Institute for Rural Development Research (IIaS) at Goethe-University Frankfurt (www.iias.de) is carrying out the accompanying research for the pilot program. This is aimed at providing the policy level with comprehensive analyses and recommendations for further policy formulation and at mainstreaming of bottom-up approaches as well as at supporting learning processes at the regional level.

III. Role of rural amenities in the Regional Action program

A. Rural amenities promoted by the pilot program

Increasingly, managing the European countryside is comprehended as not being exclusively the responsibility of farmers alone. It calls for a public debate on the possible role and contribution of different types of actors (farmers, landowners, societal groups, nature conservation organizations, volunteers, etc.) in managing the countryside. RAYMENT & DICKIE (2001) underline the important role of nature conservation for rural development in the UK, where it supports employment and local economies. There are various benefits, for example, direct employment in the nature conservation sector or positive effects of an intact environment on rural tourism, when visitors are attracted and inject cash in the form of expenditures on regional goods and services.

The integrated approach of the Regional Action pilot program aims at reconciling diverse regional interests. Natural amenities benefit as actors from different sectors, just as nature protection, agriculture and tourism co-operate in joint projects. Thus, natural resources constitute added value for environment-friendly use and at the same time their viability is secured through environment-friendly use. Conservation practices contribute to the economic competitiveness of agricultural enterprises by enhancing the use of natural resources but also through the capitalization of environmental assets through tourism, for example. The model regions’ landscape potential, such as lakes and flower-rich grasslands, and facilities such as hiking trails offer visitors possibilities for recreation, sports or nature education, and have an important tourism potential. Visitors from the city find a space that counterbalances the negative aspects of urban living. They can purchase fresh, high-quality food from nature-friendly production on farms or at farmers’ markets in the city. The preservation of rural landscapes that are attractive for rural living and tourism is an important goal in all model regions, and the latter is a promising economic factor.

B. Some project examples from the model regions

Table 2 provides an overview of the almost 400 projects that have been implemented so far in the 18 model regions. The data is broken down according to the thematic fields of development.

Table 2: Overview of projects in the model regions

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<tbody>
<tr>
<td>a) Project type</td>
<td></td>
</tr>
<tr>
<td>concept development, planning, information, facilitation</td>
<td>286</td>
</tr>
<tr>
<td>investment</td>
<td>84</td>
</tr>
<tr>
<td>regional agri-environment scheme</td>
<td>8</td>
</tr>
<tr>
<td>other</td>
<td>15</td>
</tr>
<tr>
<td>b) Main core cause</td>
<td></td>
</tr>
<tr>
<td>agriculture &amp; nature conservation</td>
<td>100</td>
</tr>
<tr>
<td>regional and direct marketing</td>
<td>191</td>
</tr>
<tr>
<td>non-food production and renewable energy sources</td>
<td>80</td>
</tr>
<tr>
<td>eco-tourism</td>
<td>136</td>
</tr>
<tr>
<td>information, qualification</td>
<td>194</td>
</tr>
<tr>
<td>other</td>
<td>12</td>
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The following project examples have been extracted from the website of the Regional Action pilot program (www.modellregionen.de).

1. Regional-level agri-environmental schemes

Agri-environmental schemes (AES) started in the early 1980s when communal and district-level programs aimed at landscape management and nature conservation were introduced. Most of these programs focused on specific goals such as the protection of wetland birds or the maintenance of particular habitats. They were based on site-specific management agreements with farmers. Since the introduction of Regulation (EC) 2078/92, all EU member states are obliged to implement AES within their territory. AES reflect the stipulation in Article 130(C) of the European Treaty that environmental protection shall be a component of Community policies. The Regulation acknowledges that farmers have an important function as stewards of the environment and the countryside. They are being financially rewarded for landscape management and preservation practices.

In order to reduce transaction costs there has for some time been a trend towards zonal programs implemented at member state level. The main problem is that more centralized, horizontal schemes are less likely to reflect the diversity of the environment and to meet the particular needs for nature conservation. The regional variations of agriculture and of types and intensities of land use demand a regionally differentiated agri-environmental support framework. Thus, an important question is how regional and local level actors can be involved in the differentiation and fine-tuning without leading to a disproportionate increase in administration and control costs.
A second important impulse for regional level planning and implementation is the need for complementary support measures aimed at the promotion of structural and longer-term changes. Examples are the improvement of decentralized, regional and local marketing structures, the introduction of structural changes in farming systems, the establishment of biotope networks in mixed farming areas, and the gradual reduction of very high livestock densities in some regions. However, integration of various rural development and agri-environmental measures can be achieved more effectively at the micro-regional level.

Several model regions have attempted to develop new approaches addressing these two demands:

- Concept for new agri-environmental measures in the Eifel region (12/2002 to 08/2003): The objective of this project directed at farmers is to conceptualize region-specific measures for the conservation of the particular landscape as well as supporting renewable sources of energy. The project also aims at opening up new employment opportunities in the field of landscape and biotope management, and it comprises the development of a regional umbrella brand name, under which products from extensive agriculture are being marketed.

- Nature-friendly grassland management in the Odenwald region (01/2004 to 06/2005): This project, which is directed at farmers as well, aims at elaborating management concepts for the different regional types of high nature value grassland. It is expected that this will contribute to the economic competitiveness of agricultural enterprises and, at the same time, to the maintenance of the region's cultural landscape. Emphasis is on the realization of concepts through active participation of dairy and beef farmers. Results from the project are expected to be applicable to other grassland regions.

- Amelioration of soil erosion on agricultural land in the Sächsische Schweiz region (11/2003 to 11/2004): The project is directed at farmers as well as non-agricultural actors. The main objective is flood prevention as well as measures for natural flood retention areas. Floods resulting from heavy rain and melting snow have in the past negatively affected water quality as well as leading to soil erosion and blocked roads.

2. Project examples for adding value to natural resources through eco-tourism and renewable sources of energy

The following project examples were chosen in order to illustrate ways in which natural resources constitute added value for the model regions. The overall orientation of the projects objectives is again in line with those of the program to create new sources of income in rural areas through diversification and to increase the regional added value while preserving and adding value to natural resources. In addition, the projects have a strong cross-sectoral alignment.

- Combination of nature protection and eco-tourism in the Altmark region (02/2003 to 02/2004): The background of the project is the high nature and landscape potential of the Altmark region in one of the new federal states (former East Germany). The area comprises three nature reserves of supraregional importance. The promotion of nature-friendly tourism aims at adding value to regional nature and landscape potentials by connecting existing tourism offers in the three nature reserves and by their re-arrangement towards sustainable, environment-oriented offers to be established in the market place. The project tries to interlink ecological and agricultural interests through increased farm households in regional tourism. In contrast to high-intensity farming and farmer-operated provision of accommodation and other services includes farmhouse bed and breakfast, guesthouses, farmhouse self-catering, farm-based camping and campsites, visitor farms/museums and farm-based leisure activities. The regional added value is expected to increase as a result of brightened attractiveness for visitors and increased demand for newly established tourism offers. The starting point was an assessment of existing tourism offers, followed by the conceptualization of new offers, their connection and their marketing. Within several months, the new regional label 'Storm Country Altmark (Stormerland Altmark)' was established. One of the first lessons is that the activation and connection of existing offers (and actors) is at least as important as the creation of new offers.

- Network for renewable sources of energy in the Barnim-Uckermark region (04/2003 to 03/2004): The generation and distribution of energy in the Barnim-Uckermark region, located close to the Altmark, is at the moment dominated by large facilities. Yet there is potential for environment-friendly, renewable and decentralized forms of energy generation, which have been neglected up to now. The aim of the project is to realize this potential in order to increase the regional added value and keep incomes within the region. Various initiatives for alternative energy collection are operating side by side in the region in an unconnected manner, and market access for small enterprises is difficult. The central aspect of this project is the establishment of a regional-level network with the function of cross-sectoral co-operation and knowledge transfer for the use of renewable sources of energy. In addition, pilot and demonstration facilities for the processing and use of renewable sources of energy have been established, and the University of Applied Sciences of Eberswalde has developed a qualification program in co-operation with external experts.

- Hiking for nature protection and environmental education in the Reutlingen region (03/2002 to 05/2005): Reutlingen is located in southern Germany. It has 146 kilometers of attractive, well-maintained long-distance hiking trails. The idea behind the project is to use this tourism infrastructure more effectively for nature protection and sustainable development goals. The expected medium and long-term effects of the project are an increased demand for regional products in the restaurants along the hiking trails as well as in direct marketing facilities; a heightened awareness and appreciation of the local landscape, food products and culture; promotion of new alliances and co-operations between local authorities, gastronomy, agriculture, tourism businesses and nature conservation groups. Future co-operation efforts with schools for environmental education as well as connections with other regional tourism initiatives are planned.

IV. Learning from the model regions

A. Regional Action as a bottom-up approach to sustainable regional development

The Regional Action program is an example of the supplementation of state intervention with less institutionalized mechanisms of co-ordination, discussed as 'governance'. Framework steering replaces traditional interventionist policies, territorially and function-oriented measures replace sectoral ones, and more attention is being devoted to regional markets than simple integration in vertical production chains. The regional level initiative remains, at the same time, embedded in the greater EU and global context (KINSI, 2001). The underlying idea is that the mobilization of endogenous regional development potentials can counterbalance the negative effects of globalization. The experiences gained indicates that this can also contribute to the effective realization of environmental and social objectives that tend to be neglected at the state level (FURST, 2001a, 2001b).

The relevance of the region as a level of action can be explained in terms of the complexity of integrated, economically, ecologically, and socially sustainable development, which calls for cross-sectoral approaches. In contrast with higher levels, this complexity is transparent at the regional level, and the actors can still comprehend the intertwined dimensions. Proximity to the regional situation and problems, as well as direct perception of interrelations, changes
and impacts also generates greater motivation to get actively involved in their solution (Knickel et al., 2004). Thus, motivation and involvement of the relevant actors, stakeholders and the population can be achieved more effectively from within the region.

The regional partnerships established in each model region support the intersectoral and multidisciplinary exchange of information, interlink key actors and groups and help raise awareness of the regional development process. They initiate new development approaches expressed in arrangements and negotiations between different actors and levels, and also serve as an instrument for the creation of social cohesion. Instead of participation of all, ideally, the partnership represents various regional interests as a regionally acknowledged group. New relationships between groups and sectors that had formerly acted separately have been formed and are still being formed, by way of which regional development is being transported onto a broader basis. The pilot program also contributes to a heightened awareness of specific regional potential and identity, which help uncover and exploit new possibilities for ameliorated rural development. Regional identity is used as an economic development tool, which is linked to the enhancement of regional landscapes and biological conservation values.

B. Encouraging innovativeness

The design of the pilot program as a competition is aimed at encouraging regions to demonstrate greater innovativeness in their development concepts and methods of implementation. This aims at constructive competition between the participating regions (innovative development concepts), and between the winning model regions (innovative development/implementation). Competition also takes place at the inner-regional level (innovative projects). ENSIGHT (1996) underlines that there is a greater co-operation potential as well as a greater competitive potential within regional level networks. What might be questioned about the innovation potential of the regional partnerships is the fact that the persons involved are at the same time those who make decisions regarding the development of their region. On the one hand, this is an advantage in various ways, for example because of the regional actors’ more precise knowledge of existing resources and constraints. On the other hand, this might be an obstacle, if certain innovation needs are specifically at the cost of regional actors, who might therefore try to block them (see also Adriaan, 2003). Others argue that partnerships have the capability of rising above the level of being affected, and therefore create access to innovation. They can function as motors of innovation because they integrate different perspectives and competencies, while single institutions fail to do so. Thus, increasing importance is becoming as the basis for processes of regional renewal and development (Champetier & Janot, 1997).

The example of regional level agri-environmental schemes is a good illustration: Target groups and actors at the local level (ecologists, nature conservationists, farmers, planners) are involved in the design of the schemes. Environmental institutions and NGOs are directly involved in planning, decision-making and the actual implementation of the schemes. The same actors are also involved in monitoring and evaluation, aimed at establishing a continuous learning process for the improvement of natural resources management. Farmers themselves become more concerned with environmental improvements instead of just fulfilling management restrictions. Simultaneously, more public support for measures regarding biological and landscape diversity is being created.

Most obviously the model regions teach us that new forms of development are possible. It is not surprising that the Regional Action program is one of three major initiatives that constitute the core of the German Sustainable Development Strategy. New societal demands expressed, for example, in the Biodiversity Convention, the EU Flora-Fauna-Habitat Directive and the EU Water Framework Directive are being addressed. In many projects, the guiding principle is the decoupling of economic growth from increased resource consumption and, one step further, linking of environmental interests with economic developments through the active creation of synergies. Regional-level processing and marketing, short chains and community-supported agriculture provide new opportunities for green and local products in the market place and an alternative to increasing standardization in mainstream production and markets (Van der Ploeg et al., 2002). The Regional Action approach as a whole secures the two central principles of sustainable regional development: stimulating innovation in a goal-oriented manner, and allowing for subsidiarity (WWF, 2002).

The model regions and projects also show what the abstract concept of the multifunctionality of agriculture and rural space could mean in actual practice. Multifunctionality emerges as a redefinition of identities, strategies, practices, interrelations and networks. Sometimes this redefinition rests on a historically rooted, but marginalized cultural repertoire. In other situations, it is based on highly ‘market-oriented’ responses that embody a general or partial reconceptualization of what farming should be in the context of the new ties emerging between town and countryside. In this respect, job creation in rural areas is not so much a function of natural resources, rural amenities or infrastructure, but of local people and entrepreneurship (Biondi & Rossi, 2000; Van der Ploeg et al., 2002; Knickel et al., 2004). The characterization of the many new fields of activities that contribute to the developments in the model regions as multidimensional is in line with the view that strict segregation of different functions (living, producing, recreating, conserving nature, etc.) is less and less realizable. Instead, new forms of multifunctionality are (re-)emerging, which, taken together, can result in the construction of a new resource base at the regional level. The related reconfiguration of resources often goes beyond the individual farm gate (Knickel & Renting, 2000). Tourists enjoy the beauty of the landscape (aesthetic function), drinking water schemes try to keep water clean (abiotic function), diversity of flora and fauna is perceived and protected as a valuable good (biotic function) and farmers still use the land for production and income generation (production and income functions).

Local and regional level actors see the greatest threat to these new developments in the overall trend towards concentration and globalization of the larger agricultural economy. The industrialization, concentration and globalization processes clearly put substantial collateralization of pressure on quality, price, and cultural and regional distinctiveness. Regional shops that provide the potential of high-quality food products may have to compete with an extremely concentrated retailing sector, with mega-retailers and food service companies acting as effective gatekeepers to the entire agri-food chain.

D. Towards reconstitution of nature-society relations

What has brought about an initiative such as the Regional Action program? Obviously, it has not been one single factor or influence that has reversed the overall situation. There have been a number of developments in society that have led to a re-evaluation of agricultural and rural development goals. First of all, food production has become less of an issue in quantitative terms. The more recently food-related crises clearly demonstrate that today agricultural production is being assessed more in terms of food quality and food safety. Secondly, environmental questions, the ‘consumption’ of nature and standards of living in rural areas have become much more important. Nowadays, the more traditional, less intensive and more diversified forms of agriculture that are better adapted to natural conditions are well-regarded because of their substantial environmental advantages. The fact that they are less productive no longer seems as important. There is also acceptance of the fact that, without farming, the maintenance of high nature value areas and semi-natural pastoral habitats would hardly be possible or would be very costly. The synergies between farming and nature conservation have be-
ene very strong because both sides benefit from it. Thirdly, the idea of sustainability has led to a reassessment of the use of natural resources and, as a result, more industrial forms of agricultural production have lost a substantial part of their credibility and prestige (Knickel, 2001).

The projects that are being implemented and the entire initiative indicate that agriculture and, more generally, the potential of rural areas are no longer being evaluated in mono-functional terms. Less intensive and more diversified forms of agriculture are now well regarded, because they tend to be better adapted to natural conditions and because of their more favorable linkages with integrated development in rural areas.

In this respect, the rediscovery of the multifunctionality of agriculture is mainly a result of societal changes and to a much lesser extent a result of changes in policy. There has been a rediscovery that farming is more than just a mono-functional activity involving (food and non-food) production and that - more than other economic activities - it produces a range of goods and services, including those amenities that are appreciated by society but that do not have a real price in the market. Regional actors perceive balanced economic development as a precondition for strengthening the role of farmers as producers of services, landscapes and biodiversity. High-quality agricultural production with a high added value is regarded as a key to balanced development. Regional products are advertised with a high quality image, which is in line with the promotion strategy of tourist agencies and the local catering and restaurant sector. The high nature quality image supplies a 'unifying concept' for creating coherence between the various activities.

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