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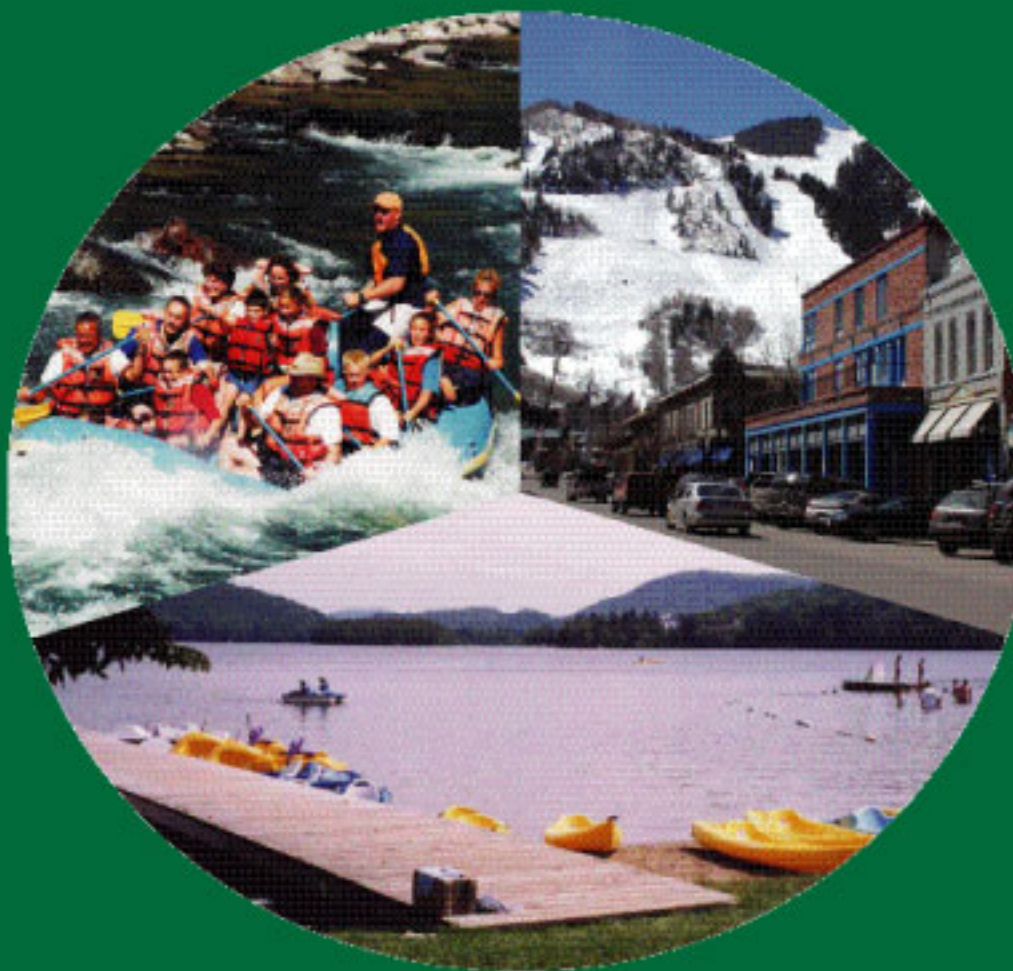


Economic
Research
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Economic
Research
Report
Number 7

Recreation, Tourism, and Rural Well-Being

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August 2005



A Report from the Economic Research Service

www.ers.usda.gov

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Richard J. Reeder and Dennis M. Brown

Abstract

The promotion of recreation and tourism has been both praised and criticized as a rural development strategy. This study uses regression analysis to assess the effect of recreation and tourism development on socioeconomic conditions in rural recreation counties. The findings imply that recreation and tourism development contributes to rural well-being, increasing local employment, wage levels, and income, reducing poverty, and improving education and health. But recreation and tourism development is not without drawbacks, including higher housing costs. Local effects also vary significantly, depending on the type of recreation area.

Keywords: recreation, tourism, recreation counties, rural development, economic indicators, social indicators, rural development policy.

Acknowledgments

The authors wish to thank the following reviewers for their helpful comments: Calvin Beale and Pat Sullivan of the Economic Research Service and Rick Wetherill of Rural Development, all of USDA, as well as Steven Deller of the Department of Agricultural and Applied Economics, University of Wisconsin at Madison. Thanks also go to Courtney Knauth for her editing assistance, and to Anne Pearl for the graphic design and text layout of the report.

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Summary

With their high rates of growth, rural recreation counties represent one of the main rural success stories of recent years. During the 1990s, these places—whose amenities attract permanent residents as well as seasonal residents and tourists—averaged 20-percent population growth, about three times that of other nonmetropolitan counties, and 24-percent employment growth, more than double the rate of other nonmetro counties. However, tourism- and recreation-based development has been viewed as having negative as well as positive economic and social impacts, leading some local officials to question recreation development strategies.

What Is the Issue?

Critics argue that the tourism industry—consisting mainly of hotels, restaurants, and other service-oriented businesses—offers seasonal, unskilled, low-wage jobs that depress local wages and income. As more of a county's workforce is employed in these jobs, tourism could increase local poverty and adversely affect the levels of education, health, and other aspects of community welfare. Meanwhile, the rapid growth associated with this development could strain the local infrastructure, leading to problems such as road congestion.

On the other hand, if tourism and recreational development attracts significant numbers of seasonal and permanent residents, it could change the community for the better. For example, the new residents could spark a housing boom and demand more goods and services, resulting in a more diversified economy with more high-paying jobs. Even low-paid recreation workers could benefit if better employment became available. Income levels could rise, along with levels of education, health, and other measures of community welfare, and poverty rates could be expected to decline.

This study quantifies the most important socioeconomic impacts of rural tourism and recreational development.

What Did the Study Find?

Rural tourism and recreational development results in generally improved socioeconomic well-being, though significant variations were observed for different types of recreation counties.

Rural tourism and recreational development leads to higher employment growth rates and a higher percentage of working-age residents who are employed. Earnings and income levels are also positively affected. Although the cost of living is increased by higher housing costs, the increase offsets only part of the income advantage.

Rural tourism and recreational development results in lower local poverty rates and improvements in other social conditions, such as local educational attainment and health (measured by mortality rates). Although rates of serious crimes are elevated with this kind of development, this may be misleading because tourists and seasonal residents, while included as victims in the crime statistics, are not included in the base number of resi-

dents. Rapid growth brings its own challenges, particularly pressures on infrastructure. The one growth-strain measure examined in the study, commuting time to work, revealed little evidence of traffic congestion in rural recreation areas.

Rural recreation counties have not benefited equally. Rural counties with ski resorts were among the wealthiest, healthiest, and best educated places in the study, while those with reservoir lakes or those located in the southern Appalachian mountains were among the poorest and least educated. Rural casino counties had relatively high rates of employment growth and large increases in earnings during the 1990s.

How Was the Study Conducted?

The study assessed the effect of recreation and tourism development on 311 rural U.S. counties identified by ERS as dependent on recreation and tourism. The findings here, showing largely positive effects, pertain mainly to places already dependent on recreational development. Counties just beginning to build a tourism- and recreation-based economy may not benefit to the same extent.

The authors used multiple regression analysis to determine the degree to which socioeconomic indicators in the 311 counties had been affected by recreational development. The key variable in the regression analysis was recreation dependency, a composite measure reflecting the percentage of local income, employment, and housing directly attributable to tourism and recreation. For each socioeconomic indicator in the study, two regressions were computed to explain intercounty variations—one for a single point in time (1999 or 2000) and one for variations in changes that occurred during the 1990s. A descriptive analysis, supplementing the regression analysis, compared recreation and other nonmetro county means for each of the socioeconomic indicators and trends, and then made socioeconomic comparisons among the different types of rural recreation counties.

Introduction

While the economies of many rural areas in the United States have been sluggish in recent years, rural communities that have stressed recreation and tourism have experienced significant growth.¹ This has not gone unnoticed by local officials and development organizations, which have increasingly turned to recreation and tourism as a vehicle for development. However, not all observers are convinced that the benefits of this approach are worth the costs. There are concerns about the quality of the jobs created, rising housing costs, and potential adverse impacts on poverty, crime, and other social conditions.² This report assesses the validity of these concerns by analyzing recent data on a wide range of socioeconomic conditions and trends in U.S. rural recreation areas. The purpose is to gain a better understanding of how recreation and tourism development affects rural well-being.

Recreation and tourism development has potential advantages and disadvantages for rural communities. Among the advantages, recreation and tourism can add to business growth and profitability. Landowners can benefit from rising land values. Growth can create jobs for those who are unemployed or underemployed, and this can help raise some of them out of poverty. Recreation and tourism can help diversify an economy, making the economy less cyclical and less dependent on the ups and downs of one or two industries. It also gives underemployed manufacturing workers and farmers a way to supplement their incomes and remain in the community. Benefiting from growing tax revenues and growth-induced economies of scale, local governments may be able to improve public services. In addition, local residents may gain access to a broader array of private sector goods and services, such as medical care, shopping, and entertainment. While other types of growth can have similar benefits, rural recreation and tourism development may provide greater diversification, and, for many places, it may be easier to achieve than other kinds of development—such as high-tech development—because it does not require a highly educated workforce.

Many of the potential disadvantages of recreation-related development are associated with the rapid growth that these counties often experience; on average, “recreation counties” grew by 20 percent during the 1990s, nearly three times as fast as other rural counties. Rapid growth from any cause can erode local natural amenities, for example, by despoiling scenic views. Cultural amenities, such as historic sites, can also be threatened. Growth can lead to pollution and related health problems, higher housing costs, road congestion, and more crowded schools, and it may strain the capacity of public services. Small businesses can be threatened by growth-induced “big-box” commercial development, and farms can be burdened by increased property taxes. In addition, newcomers might have different values than existing residents, leading to conflicts over land use and public policies. Growth can also erode residents’ sense of place, which might reduce support for local institutions, schools, and public services.

Aside from these general growth-related issues, some specific problems have been linked to tourism and recreation industries. These include the potential for higher poverty rates associated with low-wage, unskilled workers who are attracted to the area to work in hotels, restaurants, and

¹In this report, “tourism” and “recreation” refer to the development process in which tourists, seasonal residents, and permanent residents are attracted to the community to take part in recreation and leisure activities.

²For a good overall discussion of the benefits as well as the liabilities of recreation and tourism as a rural development strategy, see Gibson (1993), Galston and Baehler (1995), or Marcouiller and Green (2000).

recreation sites. Higher poverty rates could lead to various other social problems, including higher crime rates, lower levels of education, more health problems, and higher costs of providing public services.

With this mix of positive and negative impacts, it is understandable why experts on development policy may be uncertain about the value of rural tourism and recreation development strategies. Hence, it is important that policymakers have access to information about the nature and extent of the socioeconomic impacts of this type of development.

Past research has examined some of the impacts (Brown, 2002). Much of that research, however, is in the form of case studies, with only a few empirical studies examining nationwide rural impacts, such as the articles by English et al. (2000) and Deller et al. (2001). English et al. examined the impact of tourism on a variety of measures of local socioeconomic conditions (local income, employment, housing, economic structure, and demographic characteristics). Deller and his colleagues examined recreational amenities (including recreational infrastructure), local government finances, labor supply characteristics, and demographic demand characteristics, estimating their effects upon the growth of local population, employment, and income.

Our research used an approach similar to that of English and his colleagues, which identified a group of tourism-dependent counties and then used regression analysis to estimate the effect of tourism on various indicators of local rural conditions. Using the new ERS typology of rural recreation counties developed by Kenneth Johnson and Calvin Beale (2002), we identified differences between rural recreation counties and other nonmetro counties for various indicators of economic and social well-being.³ We also examined socioeconomic variations by type of recreation county. We then used regression analysis to test statistically for the effect that dependence on recreation (including tourism and seasonal resident recreation) has on local socioeconomic conditions. Details about the regression analysis are provided in the appendix.

We hoped to shed light on several important questions about this development strategy. Among these are:

- How does rural recreation development affect residents' ability to find jobs?
- How are local wages and incomes affected?
- How does recreation development affect housing costs and local cost of living?
- What effect does recreation development have on local social problems such as crime, congestion, and poverty?
- How are education and health affected?
- How do various types of recreation areas differ in socioeconomic characteristics?

³We also examined fiscal and economic conditions in earlier research (Reeder and Brown, 2004), but our fiscal findings were not easy for us to interpret, so we excluded them from this report.

What Is a Recreation County?

In 1998, Beale and Johnson identified 285 nonmetropolitan recreation counties based on empirical measures of recreation activity, including levels of employment and income in tourism-related industries and the presence of seasonal housing (Beale and Johnson, 1998). They modified and expanded their typology a few years later (Johnson and Beale, 2002). Their 2002 typology identified 329 recreation counties that fell into 11 categories, varying by geographic location, natural amenities, and form of recreation. It is this typology that ERS has adopted as its recreation county typology. We used the 2002 typology, which covered only nonmetropolitan counties. To simplify our analysis, we excluded Alaska and Hawaii.⁴ This reduced the number of recreation counties in our study to 311.

One of the advantages of this typology is that it includes not only places with significant tourism-related activity but also those with a significant number of seasonal residents. (See box on next page, “How Were Recreation Counties Identified?”) Like tourists, most seasonal residents are attracted by opportunities for recreation, including some who come simply to relax in a scenic rural setting. In theory, seasonal residents should have a bigger economic impact on the local community than tourists because they stimulate the housing industry and their season-long presence significantly increases the demand for a wide range of local goods and services. In addition, seasonal residents often later become permanent residents. Because many seasonal residents first came to the area as tourists, it is difficult, if not impossible, to separate the long-term impact of tourists from seasonal residents. Our use of the ERS typology, which covers both tourism and seasonal recreational/residential development, thus seems ideal for estimating the long-term, overall impacts of tourism and recreation combined.

Another advantage of this typology is that it is derived from a continuous variable—a weighted average of tourism and seasonal housing dependence (see box on next page). In theory, this continuous variable may be used more effectively to estimate impacts than a simple recreation/other nonmetro dichotomous variable because it allows us to examine variations in the extent of recreation. Similarly, the different types of recreation counties in the Johnson/Beale typology can be used to further elucidate and estimate the impacts of recreational activity on local socioeconomic conditions.

General Characteristics of Recreation Counties

The 311 recreation counties in our study are located in 43 States, but tend to be concentrated in the West, the Upper Great Lakes, and the Northeast (fig. 1). In the West, this reflects the ample opportunities for hiking, mountain climbing, fishing, and wintertime sports found in the many national parks and ski resorts there. By contrast, the high concentration of recreation counties in the Upper Great Lakes and Northeast—especially in New England and Upstate New York—is largely due to the popularity of long-established second homes in areas with lakes. Many of these areas also have significant wintertime recreation activities, including snowmobiling and skiing. Not surprisingly, recreation counties score higher (4.25) on ERS’ natural amenities index than other nonmetro counties (3.34).⁵

⁴We also excluded several counties that had been metropolitan in the 1980s but had lost their metropolitan status by 1993.

⁵The ERS natural amenities index ranges from 1 to 7, encompassing six measures of natural amenities, covering climate (temperature and humidity), topographic variation (such as mountains), and water area. Data for this index are available at <http://www.ers.usda.gov/Data/NaturalAmenities>.

How Were Recreation Counties Identified?

The 2002 Johnson/Beale typology covered only nonmetropolitan counties, using the 1993 Office of Management and Budget (OMB) definitions of metropolitan areas. Johnson and Beale began by examining a sample of well-known recreation areas to determine which economic indicators were most appropriate for identifying other such counties. They then computed the percentage share of wage and salary employment from the Census Bureau's 1999 County Business Patterns data and personal income from Bureau of Economic Analysis data as these data apply to recreation-related industries, i.e., entertainment and recreation, accommodations, eating and drinking places, and real estate. They also computed a third measure: the percentage share of housing units of seasonal or occasional use, from 2000 Census data. They then constructed a weighted average of the standardized Z-scores of these three main indicators (0.3 employment + 0.3 income + 0.4 seasonal homes). Counties scoring greater than 0.67 on this recreation dependency measure were considered recreation counties. Next, they added several large nonmetro counties that did not make the cut but had relatively high hotel and motel receipts from 1997 Census of Business data. Additional counties were accepted if the weighted average of the three combined indicators exceeded the mean and at least 25 percent of the county's housing was seasonal. Then Johnson and Beale deleted 14 counties that lacked any known recreational function but appeared to qualify "either because they were very small in population with inadequate and misleading County Business Patterns coverage or because they reflected high travel activity without recreational purpose, i.e., overnight motel and eating place clusters on major highways." These calculations produced their final set of 329 recreation counties. In 2004, ERS established these recreation counties as one of its county typologies (available at <http://www.ers.usda.gov/Briefing/Rurality/Typology/>). By 2004, some of these counties had changed their metropolitan status based on the new 2003 OMB definitions of metropolitan areas.

Data from the 2000 Census reveal that recreation and other nonmetro counties average similar population sizes (table 1).⁶ However, during the last decade, the population of recreation counties has grown almost three times as fast (20 percent vs. 7 percent, on average). Recreation counties also have relatively low population densities, and more of their residents tend to live in rural parts of the county (those with less than 2,500 population).

Using the ERS 1993 county economic and policy typologies (Cook and Mizer, 1994), we found that the economies in recreational counties were generally more diverse than in other nonmetro counties. For example, only 30 percent of recreation counties were highly dependent on a single major industry (agriculture, mining, or manufacturing), while 58 percent of other nonmetro counties were highly dependent on just one of these industries. Recreation counties also were slightly less dependent on neighboring counties for employment; only 13 percent of recreation counties were identified as commuting counties (with a high percentage of their resident workforce commuting outside the county for employment), compared with 17 percent of other nonmetro counties.

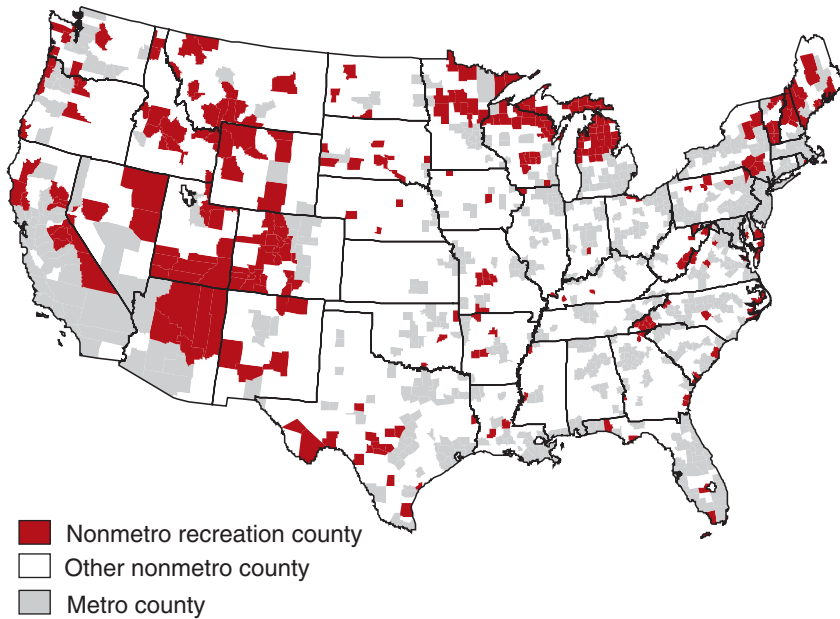
We also found that about a third (32 percent) of recreation counties were retirement-destination places vs. only 4 percent of other nonmetro counties.

⁶The averages shown in this report are "unweighted" averages (simple means). In most cases, these averages appear to represent fairly the typical county in the group being reported. In some cases, however, the average (mean) may be unrepresentative in that it differs significantly from the median. We will point out such instances in the text or in a footnote.

Figure 1

Nonmetropolitan recreation counties, 2002

Counties are concentrated in the West, Upper Midwest, and Northeast



Note: Excludes counties in Alaska and Hawaii.

Source: Adapted from Kenneth M. Johnson and Calvin L. Beale, 2002. "Nonmetro Recreation Counties: Their Identification and Rapid Growth," *Rural America*, Vol. 17, No. 4:12-19.

Table 1

Demographic characteristics of recreation and other nonmetro counties

Indicator	Type of county	
	Recreation	Other nonmetro
Nonmetro counties in our study	311	1,935
	<i>Number</i>	
Average county population in 2000	26,256	24,138
	<i>Persons</i>	
Population change 1990-2000	20.2	6.9
	<i>Percent</i>	
Population density in 2000	35.9	40.2
	<i>Persons per square mile</i>	
Rural share of county population in 1990	79.9	72.4
	<i>Percent</i>	

Note: These are county averages (simple means).

Source: ERS calculations using data from the U.S. Census Bureau and Bureau of Economic Analysis, U.S. Department of Commerce.

Many recreation counties (38 percent) were Federal land counties, meaning that at least 30 percent of the county's land was federally owned; only 7 percent of other nonmetro counties had that much Federal land. In addition, relatively few recreation counties (10 percent) had experienced persistently high levels of poverty (from 1950 to 1990), whereas about a fourth (26 percent) of other nonmetro counties fell into this category. Because recreation counties are not homogeneous with respect to these and other characteristics, the averages we present for all recreation counties mask considerable variation.

Economic Impacts

The conventional wisdom among researchers in recent years has been that recreation and tourism have both positive and negative economic impacts for recreation areas.⁷ On the positive side, recreation development helps to diversify the local economy (Gibson, 1993; Marcouiller and Green, 2000; English et al., 2000), and it generates economic growth (Gibson, 1993; Deller et al., 2001). It achieves this partly by acting as a kind of export industry, attracting money from the outside to spend on goods and services produced locally (Gibson, 1993). It also stimulates the local economy through other means. Infrastructure, such as airports and highways and water systems, often must be upgraded to meet the needs of tourists, and such improvements can help foster the growth of nonrecreation industries in the area by attracting entrepreneurs and labor and by providing direct inputs to these industries (Gibson, 1993).

Recreation development can involve significant economic leakages, however, in that many of the goods and services it requires come from outside the community—for example, temporary foreign workers often are drawn to the area to fill jobs in hotels, ski resorts, etc.—and many of the recreation-related establishments (restaurants, hotels, tour and travel companies) are owned by national or regional companies that export the profits (Gibson, 1993). Thus, part of the money from tourists and seasonal residents ends up leaving the locality. Another economic drawback involves the seasonality of recreation activities, which can create problems for workers and businesses during off-seasons (Gibson, 1993; Galston and Baehler, 1995), though this may actually be a plus for places where seasonal recreation jobs are timely, coming when farmers and other workers normally have an off-season.

The greatest economic concern is that recreation development may be less desirable than traditional forms of rural development because it increases the incidence of service employment with relatively low wages. According to Deller et al. (2001), “There is a perception that substituting traditional jobs in resource-extractive industries and manufacturing with more service-oriented jobs yields inferior earning power, benefits, and advancement potential” and that this may lead to “higher levels of local underemployment, lower income levels, and generally lower overall economic well-being.” In addition, many researchers are concerned that recreation may result in a less equitable distribution of income (Gibson, 1993; Marcouiller and Green, 2000). These problems may be compounded by the higher housing costs in some recreation areas (Galston and Baehler, 1995).

These concerns reflect findings from individual case studies. Only a few studies have attempted to estimate how rural recreation areas nationwide differ on economic measures. Deller et al. (2001) found that rural tourism and amenity-based development contributed to growth in per capita income and employment, and concluded that as a result of the positive impact on income “the concern expressed about the quality of jobs created ... appears to be misplaced.” English et al. (2000) also found that rural tourism was associated with higher per capita incomes, and with a higher percent increase in per capita income, although they found no significant relationship for household income. English and his colleagues also found housing

⁷Because most economic development strategies are adopted and implemented at the local level, our goal here is to provide better informed decisions at that level. Hence, the positives and negatives discussed here refer only to the situation facing the local county. Whether rural recreational development is good for the State or the Nation as a whole is also a worthwhile question, but beyond the scope of this report.

costs and the change in housing costs over time to be significantly related to rural tourism. On the other hand, they found no evidence that the distribution of income was less equal due to rural tourism.

To address these economic issues, we examined a variety of indicators reflecting employment, earnings, income, and housing costs.

Employment

Two employment measures, the local employment growth rate (percent increase during the 1990s) and the local employment-population ratio (percentage of working-age resident population employed in 2000) are particularly illuminating. (See box “Data Sources” for each of the indicators used in this study.)

Recreation counties, on average, had more than double the rate of employment growth of other rural areas during the 1990s: 24 percent vs. 10 percent. The regression analysis, moreover, indicated that the extent to which a recreation county was dependent on recreation was positively and significantly related to the rate of local employment growth (see appendix for details on regression analysis). Employment growth generally offers residents more job opportunities, enabling some unemployed residents to find jobs and employed residents to find better jobs. However, job growth does not necessarily improve job conditions for current residents. If too many people come into the area seeking employment, and if those newcomers aggressively compete with locally unemployed (or underemployed) residents, the resident job seekers may end up having greater difficulty gaining employment. Thus, we need to look closely at employment data to determine how recreation affects the local ability to find jobs.

Data Sources

The source for most of our data is the Decennial Census (Census Bureau, U.S. Department of Commerce). Other sources include:

- The Bureau of Economic Analysis, U.S. Department of Commerce, for data on earnings per job, and the Bureau of Labor Statistics, U.S. Department of Labor, Local Area Unemployment Statistics, for employment growth.
- The Uniform Crime Reporting Program (an unpublished data source available on an annual basis from the Federal Bureau of Investigation (FBI)), for data on serious crimes. Note: These data have not been adjusted by the FBI to reflect underreporting, which could affect comparability over time or among geographic areas.
- The Area Resource File (a county-specific health resources information system maintained by Quality Resource Systems, under contract to the Health Resources and Services Administration, U.S. Department of Health and Human Services), for the age-adjusted death rate, the number of physicians, and the area (in square miles) used to compute population densities for regression analysis.
- Kenneth Johnson and Calvin Beale for the recreation county types and the measure of recreation dependency used in their 2002 article.

To measure the ability of residents to find jobs, we examined the percentage of the working-age population that was employed.⁸ For our study, we broke this into three separate rates covering three groups of the working-age population: ages 18-24, 25-64, and 65 and over. We hypothesized that recreation counties might be particularly advantageous for younger and older populations that may have a harder time competing in places with less job growth. In addition, younger and older groups may find it more convenient to work in recreation counties, which are thought to provide more part-time and seasonal jobs than most other places.

As expected, we found higher employment-population rates in recreation counties for both the younger and older age groups. However, the difference was less than 1 percentage point. The main working-age employment rate (ages 25-64) was roughly the same for both recreation and other nonmetro counties in 2000.⁹ However, for each of these age groups, the upward trend in the employment-population rate during the 1990s favored recreation counties. Our regression analysis indicates that recreation had a positive and statistically significant impact on the employment rates for all three age categories in 2000. Recreation also had a positive and statistically significant impact on the increase in the employment rate during the 1990s, except for the older age group.¹⁰

Earnings

Conventional wisdom suggests that a main drawback of tourism is that many of the jobs it creates are in restaurants, motels, and other businesses that tend to offer relatively low wages and few fringe benefits. But does this mean that rural recreation development generally leads to low-paying jobs? To address this question, we examined average annual earnings per job (which include wages and salaries and other labor and proprietor income, but exclude unearned income and fringe benefits). We found that average earnings per job were \$22,334 in 2000 for recreation counties—about \$450 less than in other rural counties (fig. 2, table 2).¹¹ The difference, though only about 2 percent, is consistent with the low-wage hypothesis. On the other hand, our finding that earnings per job increased faster in recreation counties than in other rural counties in the 1990s was not consistent with the conventional wisdom, but again, the difference was relatively small (\$200).

Our regression analysis, however, found no statistically significant relationship between earnings per job and recreation dependency, at least no simple linear relationship.¹² With regard to change in earnings per job during the 1990s, the regression analysis found that recreation had a positive and statistically significant impact on earnings per job. So these findings do not support the conventional wisdom that recreation results in generally low-paying jobs.

The data on earnings per job covered all jobs in the county, including those filled by nonresidents. A different picture emerges when we look only at earnings per resident worker. Aside from excluding nonresidents employed in the county (who, in theory, might be lowering the average earnings per job in recreation counties), this measure totals the income workers receive from all the jobs they have. This is important because recreation counties often provide numerous part-time and seasonal jobs, potentially allowing

⁸This may be viewed as a measure of both the availability of job opportunities to residents and of local economic efficiency.

⁹Comparing medians instead of means, the difference between recreation and other nonmetro counties tends to be bigger in 2000 for all three age groups.

¹⁰Our regression explaining the change in employment rates for the elderly explained only 1 percent of the variation, which may have prevented the regression analysis from detecting the importance of recreation.

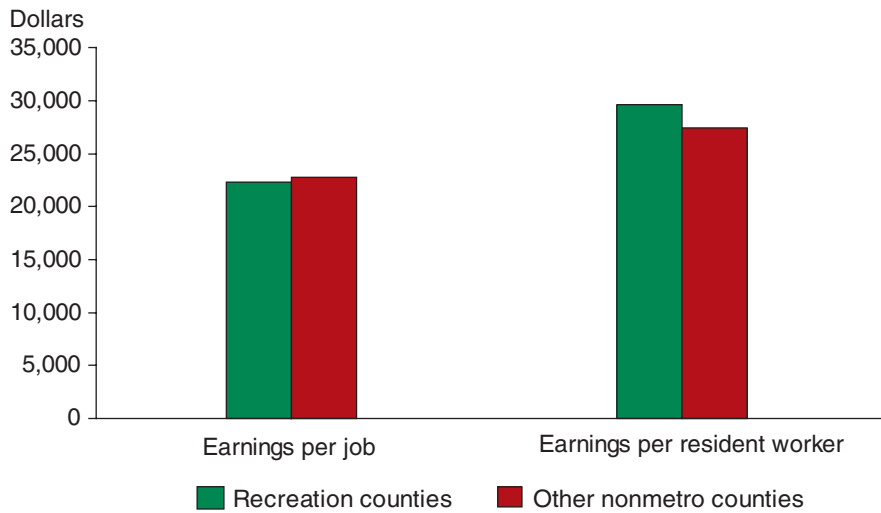
¹¹Although the average earnings per job grew more in recreation counties than in other nonmetro counties, the reverse was true for the median earnings per job.

¹²When we ran a curvilinear regression, we found a significant negative coefficient for recreation dependency, and a significant positive coefficient for recreation dependency squared. This implies that among recreation counties, those with moderate degrees of recreation dependency had relatively lower earnings per job, compared with counties with lower or higher recreation dependencies. We do not have any explanation for this.

Figure 2

Earnings in recreation and nonrecreation counties, 1999

Recreation counties have significantly higher levels of earnings per resident worker



Source: Calculated by ERS using data from U.S. Census Bureau and Bureau of Economic Analysis, U.S. Department of Commerce.

more of their residents to have multiple jobs than the residents of other counties. The average worker's earnings from multiple jobs exceeded the average earnings per job. In recreation counties, earnings amounted to \$29,593 per resident worker (16 years or older) in 1999—about \$2,000 more than in other rural counties—an 8-percent difference.¹³ Our regression analysis found recreation had a positive and statistically significant effect on earnings per resident worker. Thus, some residents may work more hours in recreation counties, but on average they end up earning more than residents of other nonmetro counties.

Income

Earnings are only one source of income. Other sources include interest receipts, capital gains, and retirement benefits like social security. Because many recreation areas have attracted wealthy individuals—including retirees, whose earnings are only a small part of their incomes—we expected recreation county income levels to be higher than in other rural areas. Consistent with this expectation, we found average per capita income was 10 percent higher in recreation counties than in other nonmetro counties (fig. 3). Moreover, per capita income levels were growing more rapidly during the 1990s in recreation counties than in other nonmetro counties. These findings were reflected in our regression analysis, which found recreation had a positive and statistically significant effect on both the level of per capita income and the change in per capita income over time. This should also benefit the community as a whole, because higher incomes mean an increase in demand for local goods and services, as well as increased local government tax collections and contributions to local charities and other social organizations.

One problem in interpreting per capita incomes is that they average together the incomes of the wealthiest and the poorest individuals. Thus, a small number of extremely wealthy people could make the community seem much

¹³Census data also provided median earnings for two kinds of resident workers who were 16 years and older: full-time workers and other workers. For both types of workers, recreation counties surpassed other nonmetro counties in median earnings per worker in 2000.

Table 2

Economic conditions in recreation and other nonmetro counties

Indicator	Type of county	
	Recreation	Other nonmetro
Employment growth 1990-2000	23.7	9.8
Employment/population ratio in 2000		
Ages 16-24	67.4	66.7
Ages 25-64	70.3	70.3
Ages 65 and over	13.6	13.4
Change 1990-2000		
Ages 16-24	0.7	0.0
Ages 25-64	0.7	0.3
Ages 65 and over	1.5	1.4
Earnings per job in 2000	22,334	22,780
Change 1990-2000	5,340	5,140
Earnings per resident worker in 1999	29,593	27,445
Income per capita in 2000	22,810	20,727
Change 1990-2000	7,471	6,564
Median household income in 1999	35,001	31,812
Change 1989-1999	11,952	10,531
Median monthly rent in 2000	474	384
Change 1990-2000	134	104

Note: These are county averages (simple means).

Source: ERS calculations based on data from U.S. Census Bureau and Bureau of Economic Analysis, U.S. Department of Commerce, and Bureau of Labor Statistics, U.S. Department of Labor.

better off than with other measures, for instance, the income of the typical (or median) person in the county. If recreation counties had more wealthy individuals than other rural counties, the per capita measure might be a misleading indicator of how the average family or household in each of these counties differed in income.¹⁴ For this reason, we include a second income measure: median household income in the county in 1999.

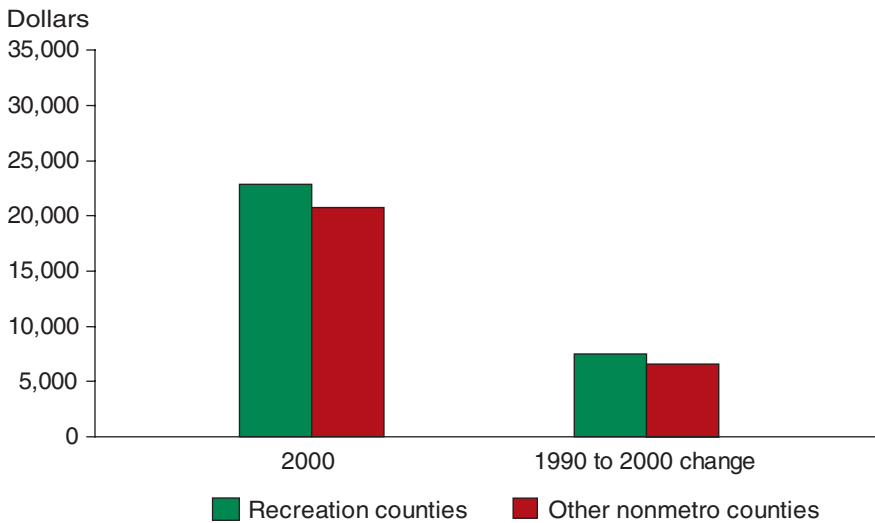
Using this measure, we found that median household income was 10 percent higher in recreation counties than in other rural counties. The recreation county advantage amounted to \$3,185 per year for the median household. The regression analysis reflected this finding, showing a positive and

¹⁴In other words, the mean (average) does not equal the median when income is not normally distributed.

Figure 3

Per capita income in recreation and nonrecreation counties, 2000, and change during 1990s

Recreation counties have significantly higher levels of income and had more income growth in the 1990s



Source: Calculated by ERS using data from U.S. Census Bureau and Bureau of Economic Analysis, Department of Commerce.

statistically significant relationship between recreation and both the level and change in median family income.

Housing Costs

One of the main complaints about recreation areas is that the cost of living in them is often higher, offsetting much of the advantage that residents might obtain from their higher incomes. Of particular concern is that high living costs could become a significant hardship for people struggling to raise families on minimum-wage jobs (Galston and Baehler, 1995). A high cost of living could force some lower paid workers (including some long-time residents) to look for housing outside the area.

The cost of housing is one of the most important contributors to the cost of living. According to Census data in 2000, median monthly rents for housing averaged \$474 in recreation counties, 23 percent higher than the \$384 median rent in other nonmetro counties (fig. 4). Our regression analysis also found a positive and statistically significant effect of recreation on median rent. Rents also increased faster during the 1990s in recreation counties, with the extent of recreation positively and significantly related to the extent of rent increase.

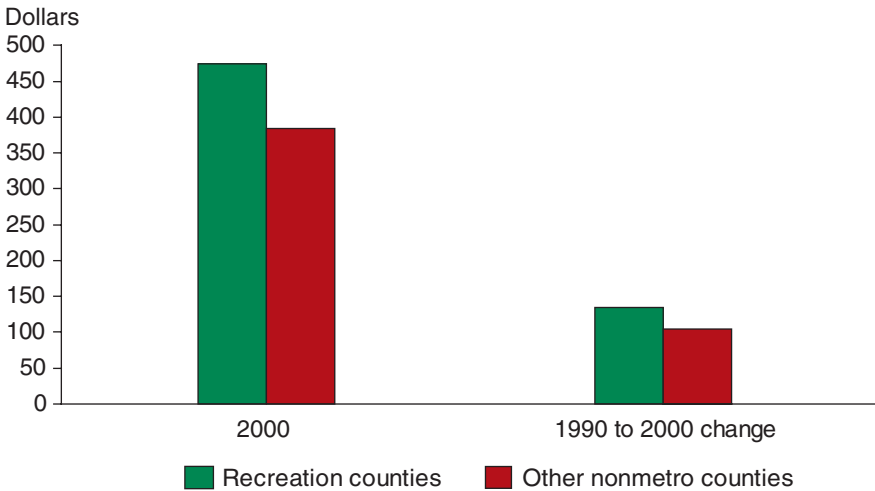
Though recreation counties had higher rents than other nonmetro counties, over the course of a year this amounted to a difference of only \$1,080 per household—about a third of the \$3,185 advantage we found in median household income in recreation counties. So after deducting for their higher rents, we found that households in recreation counties still had a significant income advantage over those in other rural counties.¹⁵

¹⁵Alternatively, we may compare regression coefficients for median rents and median household incomes. If we multiply the median (monthly) rent coefficient by 12 (months per year), we get a \$384 annual rent add-on associated with a 1-unit increase in recreation dependency. This compares with the \$1,474 add-on to median household income associated with the same 1-unit increase in recreation dependency. Thus, the regression analysis implies that higher rents claim only about a fourth (26 percent) of the added income related to recreation.

Figure 4

Median monthly rents in recreation and nonrecreation counties, 2000, and change during 1990s

Recreation counties have significantly higher rents and had more growth in rents in the 1990s



Source: Calculated by ERS using data from U.S. Census Bureau, Department of Commerce.

It is difficult to draw conclusions from this kind of information, for several reasons. First, rents show only part of the housing cost picture. Most housing units in the nonmetro counties we studied (in both recreation and other nonmetro counties) are owner-occupied rather than rented. Assuming that higher rents reflect higher home prices and greater equity in homes, higher home prices should increase the wealth of homeowners in recreation counties. In addition, higher rents and home prices may reflect better housing quality in recreation counties, rather than simply higher costs. This might be expected because more of the housing in these rapidly growing places is likely to be relatively new (and hence more valuable), and recreation county residents, having generally higher incomes, may demand better housing than residents of other nonmetro counties. Higher home values also increase the local tax base, which may lead to higher tax collections, enabling local governments to increase public services. Thus, on balance, it is unclear whether these higher housing costs are a plus or minus for the community.

Social Impacts

Various researchers have examined the relationship between nonmetro recreation and social conditions in a community. Page et al. (2001) note that rapid population growth in nonmetro recreation counties has resulted in overcrowded conditions and traffic congestion. Recreation may also affect local poverty rates. Some authors have argued that recreation activity creates new sources of employment, helping to raise the poor from poverty (Gibson, 1993; Patton, 1985). Others have pointed to the low-wage, seasonal, and part-time nature of many tourism jobs, arguing that tourism may actually add to the number of poor in the community (Galston and Baehler, 1995; Smith, 1989). Recreation affects social conditions in other ways. For example, Page et al. argue that tourism and recreation activity may help to maintain or improve local services, such as health facilities, entertainment, banking, and public transportation, because of the increased demand that tourists generate for these activities. The relationship between recreation and crime has also been explored by a number of researchers (Rephann, 1999; Page et al., 2001; McPheters and Stronge, 1974), with a popular question being whether casinos increase criminal activity (Rephann et al., 1997; Hakim and Buck, 1989).

To address social impact concerns, we identified eight social indicators. Two involve conditions associated with rapid population growth; one identifies a population subgroup (persons in poverty) that may present special challenges; two relate to education; two deal with health-related concerns; and one measures crime.

Population Growth

The first social variable we examined was the county population growth rate during the 1990s. Population growth can be beneficial for stagnant or declining rural areas looking for new sources of employment and income, but in some places it can bring problems. This is particularly true if growth occurs rapidly and haphazardly, contributing to sprawl, traffic congestion, environmental degradation, increased housing costs, school overcrowding, a decrease in open land, and loss of a “sense of place” for local residents.

Perhaps because of their natural amenities and tourist attractions, recreation counties experienced a 20.2-percent rate of population growth between 1990-2000, nearly triple the 6.9-percent rate for other nonmetro counties during the same period (table 3). These results are consistent with our linear regression analysis, which found a positive and statistically significant relationship between recreation and the county population growth rate. Further analysis revealed an apparent curvilinear relationship, in which recreation counties with moderate recreation dependencies experienced higher growth rates than those with smaller and larger recreation dependencies.¹⁶

Travel Time to Work

This variable was included to test the hypothesis that growth in recreation counties may lead to increasing traffic congestion (Page et al., 2001). We found that mean commute times for recreation and other rural counties were not significantly different in 2000. Moreover, during the 1990s, commute

¹⁶The recreation dependency variable had a statistically significant positive coefficient, while the recreation dependency squared variable had a statistically significant negative coefficient.

Table 3

Social conditions in nonmetro recreation and other nonmetro counties

Indicator	Type of county	
	Recreation	Other nonmetro
Population growth 1990-2000	20.2	6.9
	<i>Percent</i>	
Mean travel time to work in 2000	22.7	23.0
Change 1990-2000	4.4	4.3
	<i>Minutes</i>	
Poverty rate in 1999	13.2	15.7
	<i>Percent</i>	
Change 1989-1999	-2.6	-3.1
	<i>Percentage points</i>	
Residents without a high school diploma in 2000	18.4	25.0
	<i>Percent</i>	
Change 1990-2000	-7.4	-8.4
	<i>Percentage points</i>	
Residents with at least a bachelor's degree in 2000	19.2	13.6
	<i>Percent</i>	
Change 1990-2000	4.0	2.4
	<i>Percentage points</i>	
Physicians per 100,000 residents in 2003	123.0	83.4
	<i>Number</i>	
Age-adjusted deaths per 100,000 residents in 2003	817.3	898.3
	<i>Number</i>	
Rate of serious crime per 100 residents in 1999	2.8	2.4
	<i>Percent</i>	

Note: These are county averages (simple means).

Source: ERS calculations based on data from U.S. Bureau of the Census, U.S. Department of Commerce, Department of Health and Human Services, and the FBI.

times increased at roughly the same rate (4.4 percent for recreation counties vs. 4.3 percent for other rural counties). The regression analysis, however, revealed a significant negative relationship between recreation dependence and change in travel time to work during the 1990s. One explanation may be that expanded economic opportunities in recreation counties during the 1990s meant that residents had to travel shorter distances for jobs.

Poverty Rate

Poverty poses a problem for communities by increasing the costs of providing public services and contributing to crime rates, health problems, and neighborhood blight. Previous research has found that an expanding tourist industry is linked with a decreasing rate of poverty (Rosenfeld et al., 1989; John et al., 1988). Given that many recreation counties have attracted well-off retirees and that average income levels have risen in recreation counties, the counties might, on average, be expected to have fewer individuals living in poverty than other nonmetro counties. However, as noted earlier, some have argued that tourism, by expanding the number of low-paying, part-time jobs, could increase the number of individuals living in poverty in these counties (Galston and Baehler, 1995; Smith, 1989).

We found that the poverty rate was substantially lower in recreation counties than in other rural counties. In 1999, 13.2 percent of all residents in recreation counties were living in poverty, compared with 15.7 percent in other nonmetro counties. Mirroring the national trend of declining poverty rates during the 1990s, the proportion of residents living in poverty during the decade declined (at approximately the same rate) in both recreation and other rural counties.¹⁷ Our regression analysis also found a significantly negative relationship between recreation and the poverty rate.¹⁸ In addition, the regression analysis found a statistically significant negative relationship between recreation and the change in the poverty rate.

Educational Attainment

Previous research has identified the central role that education plays in rural poverty (McGranahan, 2000). Education is important, not only because it contributes to the economy, but also because it can affect the quality of life in rural communities and can help raise people out of poverty. Nonmetro areas with lower levels of education tend to be poorer and offer fewer economic opportunities for their residents. Migration (movement to another area) tends to increase with higher levels of education (Basker, 2002; Greenwood, 1993; Greenwood, 1975). Hence, recreation counties, which have had many in-migrants in recent years, may be expected to have higher levels of educational attainment than other nonmetro counties. English et al. (2000) found rural tourism to be associated with higher levels of educational attainment. We examined educational attainment at two levels: high school and college.

Our results show that residents in recreation counties have higher levels of education than other nonmetro residents (fig. 5). Recreation counties have both a smaller share of residents 25 years or older without a high school education, and a higher share of those with at least a bachelor's degree, than residents of other nonmetro counties. In 2000, 18.4 percent of residents age 25 or older in recreation counties did not have a high school diploma, compared with 25 percent in other nonmetro counties. For the same year, 19.2 percent of recreation county residents age 25 or older had a 4-year college degree or higher, compared with 13.6 percent in other nonmetro counties. During the 1990s, educational attainment on both measures improved in recreation as well as other nonmetro counties. These findings

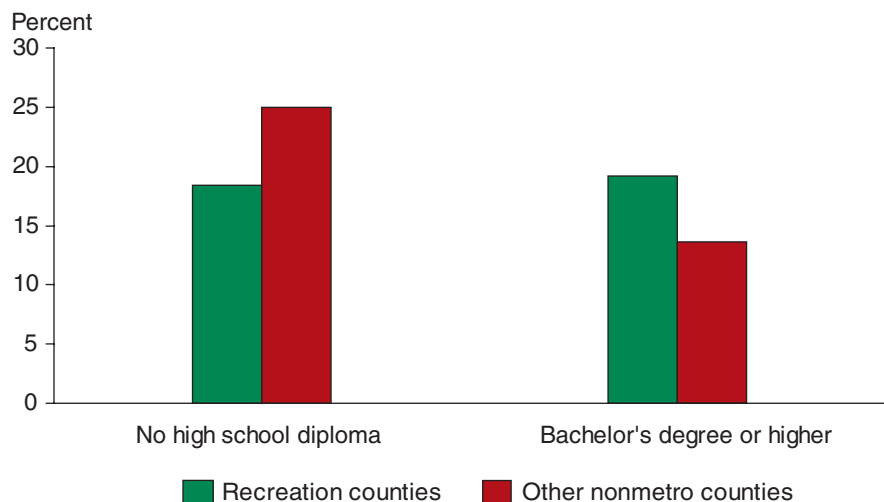
¹⁷Both recreation and other rural counties had rates of poverty in 1999 higher than the 11.8 percent of metro counties.

¹⁸English et al. (2000) found no such relationship.

Figure 5

Educational attainment in recreation and nonrecreation counties, 2000

Recreation counties have significantly higher levels of educational attainment



Source: Calculated by ERS using data from U.S. Census Bureau, Department of Commerce.

are supported by our regression analysis, which found that recreation had a significant negative correlation with the share of residents without a high school diploma and a significant positive correlation with the share of residents with a bachelor's degree or higher. In addition, a statistically significant relationship was found between recreation and an increase in the share of college-educated residents during the 1990s. However, the change in the share of high school graduates during the 1990s, although positive, was not significantly related to recreation.

Health Measures

Health is important for quality of life. In some recreation counties, many individuals moving in are retirees who demand more from health services than younger people; this could result in improved health services in these places. Many recreation counties are in pristine locations with clean air and water, which might also lead to better overall health. In addition, residents in recreation areas are probably more likely to be involved in outdoor activities than individuals in other nonmetro areas, which may also promote better overall health.

Our indicators of local health conditions—the number of physicians available and the age-adjusted mortality rate—support the view that recreation county residents have better health and health services than other nonmetro residents. In 2003, recreation counties had 123 physicians per 100,000 residents, compared with 83.4 per 100,000 residents in other nonmetro counties. The analysis also shows that the age-adjusted death rate (computed as a 3-year average) was almost 10 percent lower in recreation than in other nonmetro counties.

Our regression results show that recreation had a significantly negative correlation with the age-adjusted death rate. However, the relationship between recreation and the number of physicians, although positive, was statistically insignificant.

Crime Rate

Many researchers have looked at the link between recreation activity and crime (Page et al., 2001; Rephann, 1999; McPheters and Stronge, 1974). Some types of recreation counties attract criminals who prey on tourists in-season and rob unoccupied houses during the off-season. Also, some low-income residents of these counties may commit crimes of opportunity, taking advantage of the influx of well-off outsiders. Some researchers have argued that crime may be particularly associated with casinos (Rephann et al., 1997; Hakim and Buck, 1989).

The results of our analysis indicate that recreation counties had nearly a 17-percent higher rate of serious crime (murder and non-negligent manslaughter, forcible rape, robbery, and aggravated assault) than other nonmetro counties. In 1999, the overall rate of serious crime in recreation counties was 2.8 incidents per 100 residents, compared with 2.4 incidents per 100 residents in other nonmetro counties, a statistically significant difference. These results are consistent with our regression analysis, which found that a significantly positive relationship exists between recreation and the crime rate.

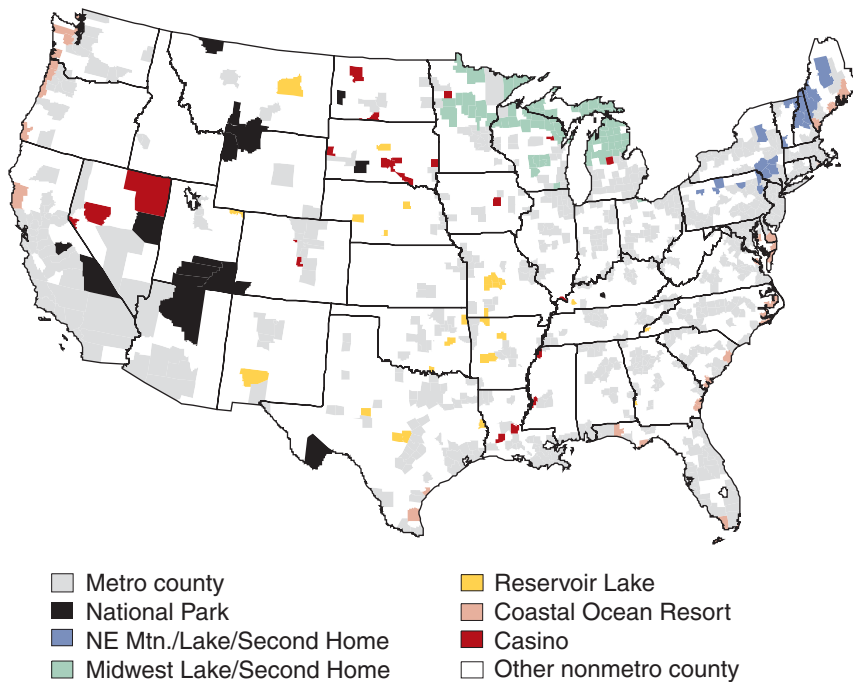
However, the meaning of this finding is not clear because the crime rate is a biased measure in recreation areas, due to the fact that crimes committed against tourists and seasonal residents are included in the total number of crimes (the numerator of the crime rate), while tourists and seasonal residents are not included in the base number of residents (the denominator of the crime rate). So the crime rate is expected to be higher in recreation areas, even if residents of these areas are not more likely to be crime victims than residents of other rural areas.

Variations by Type of Recreation County

As noted, Johnson and Beale (2002) categorized each recreation county as belonging to 1 of 11 mutually exclusive recreational groupings, a classification that provides greater insight into the recreational component of each county (figs. 6 and 7). The single most common category is the Midwest Lake and Second Home, accounting for 70 counties and overwhelmingly concentrated in central and northern Michigan, Minnesota, and Wisconsin (table 4). The Northeast Mountain, Lake, and Second Home group, a closely related category, is mainly concentrated in northern New England (Maine, New Hampshire, and Vermont) and in portions of New York and Pennsylvania. Together, these two similar categories account for more than a quarter of all recreation counties. Both categories are relatively prosperous: Northeast counties had the highest level of earnings per job among all recreation types, and the Midwest category experienced sharp increases in household income during the 1990s (table 5). Both regions had rates of poverty among the lowest of all recreation categories (table 6).

Although almost every type of recreation county registered at least double-digit population growth during the 1990s (the exception being the Northeast Mountain, Lake, and Second Home), Ski Resort counties grew the fastest (increasing 38 percent), continuing a trend from the 1980s. Other recreation categories in the West (West Mountain and Other Mountain) also experienced rapid population growth. Ski Resort counties stand out in other ways,

Figure 6
Nonmetropolitan recreation categories by type (part 1), 2002

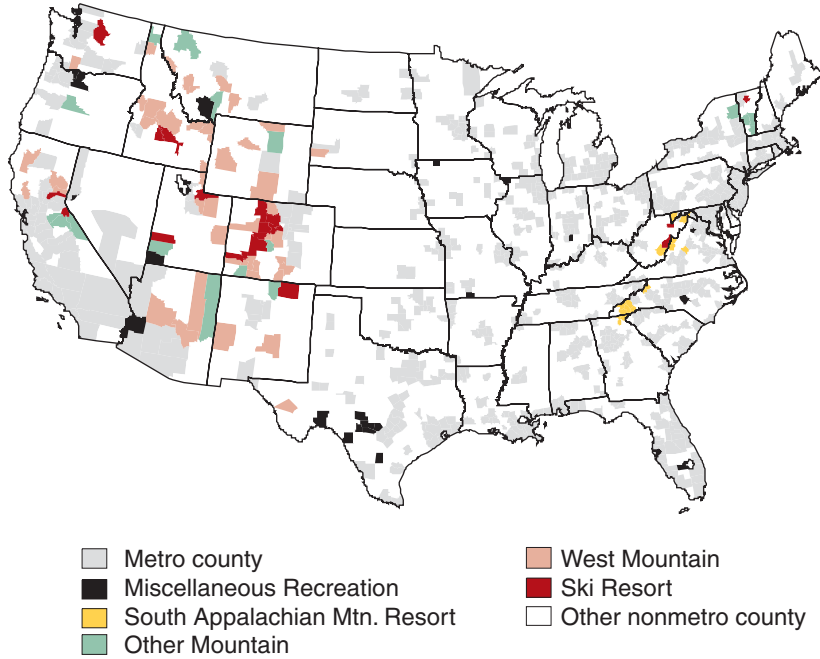


Note: Excludes counties in Alaska and Hawaii.

Source: Adapted from Kenneth M. Johnson and Calvin L. Beale, 2002. "Nonmetro Recreation Counties: Their Identification and Rapid Growth," *Rural America*, Vol. 17, No. 4:12-19.

Figure 7

Nonmetropolitan recreation categories by type (part 2), 2002



Note: Excludes counties in Alaska and Hawaii.

Source: Adapted from Kenneth M. Johnson and Calvin L. Beale, 2002. "Nonmetro Recreation Counties: Their Identification and Rapid Growth," *Rural America*, Vol. 17, No. 4:12-19.

measuring substantially higher than other recreation counties on a number of economic variables, including ratio of employment to population, earnings per job, earnings per worker, per capita income, and median household income. Ski Resorts also had the lowest poverty rate among all recreation categories, but had substantially higher housing costs—nearly 40 percent higher than the average for other nonmetro counties—which grew rapidly during the 1990s. Ski Resort counties also stand out in terms of social indicators, having the highest levels of educational attainment, the largest number of doctors, the lowest death rates, and the highest rate of crime among all recreation categories.

In contrast, Reservoir Lake counties and South Appalachian Mountain Resort counties are among the most economically challenged recreation county types. Reservoir Lake counties, which are mainly located in the Midwest and Great Plains regions, and South Appalachian Mountain Resort counties—in the upland areas of Georgia, North Carolina, Virginia, West Virginia, and Maryland—have among the lowest earnings per worker and lowest median household income levels. They also have among the lowest rents. Both of these regions have among the lowest levels of educational attainment. Further, they have higher-than-average age-adjusted death rates, but relatively low crime rates. The South Appalachian Mountain Resort category also has a significantly longer commute than other other nonmetro counties, possibly a reflection of its mountainous topography.

Table 4

Recreation county categories

Recreation category	Number of counties
Midwest Lake and Second Home	70
Northeast Mountain, Lake, and Second Home	19
Coastal Ocean Resort	35
Reservoir Lake	27
Ski Resort	20
Other Mountain (with Ski Resorts)	17
West Mountain (excluding Ski Resorts and National Parks)	46
South Appalachian Mountain Resort	17
Casino	21
National Park	18
Miscellaneous	21
Total	311

Source: Kenneth M. Johnson and Calvin L. Beale, "Nonmetro Recreation Counties: Their Identification and Rapid Growth," *Rural America*, Vol. 17, No. 4, 2002:12-19.

Casino counties also have relatively low levels of economic development, with the highest rate of poverty—over 40 percent higher than for all recreation counties—as well as below-average levels of per capita income, median household income, and earnings per worker. Still, during the 1990s, Casino counties, which are mainly located in the Upper Midwest, the Dakotas, the Mississippi Delta region, and Nevada, collectively had sharp employment growth (a third faster than the average for all recreation counties). Casino counties, which benefited from the establishment of gambling on Native American reservations during the 1990s, had a lower level of educational attainment, fewer physicians, a higher-than-average age-adjusted death rate, and a significantly higher rate of crime than most other recreation counties.

Table 5

Economic conditions and trends by type of recreation county

Indicator	Casino	Ocean Resort	Reservoir Lake	MW Lake Home	NE MT/LK Home	Nat. Park	West MT	Ski Resort	Other MT	South AP MT Resort	Rec. Misc.	Rec. total	Non-rec. total	
														Percent
Employment growth 1990-2000	31.7*	19.2*	24.9*	23.3*	3.5	19.0*	25.0*	35.3*	26.0*	18.7*	29.2*	23.7*	9.8	
Employment/population ratio in 2000														
Ages 16-24	66.0	67.5	64.6	67.3	68.8	66.3	66.5	74.3*	67.2	66.1	68.1	67.4	66.7	
Ages 25-64	70.4	69.9	67.3	69.4	72.1	69.9	69.7	77.4*	70.6	69.4	71.0	70.3	70.3	
Ages 65 and over	16.0*	13.8	13.3	10.0*	11.6	15.3	15.5*	19.3*	13.5	11.1*	14.8	13.6	13.4	
Change 1990-2000						Percentage points								
Ages 16-24	1.0	-1.4*	0.2	2.7*	1.3	0.7	0.0	0.8	0.5	-0.1	-0.7	0.7*	0.0	
Ages 25-64	0.7	-1.4	0.6	2.8*	1.1	0.5	-0.0	0.4	0.6	-0.7	-0.4	0.7*	-0.3	
Ages 65 and over	2.2	1.6	1.2	2.0	0.8	0.9	0.5	3.0	0.8	1.3	0.9	1.5	1.4	
Earnings per job in 2000	24,372	23,698	19,630*	22,710	25,255*	21,233	20,058*	24,294	23,560	22,412	20,604	22,334	22,780	
Change 1990-2000	6,748	5,761	4,264	5,359	5,100	4,383	3,487*	7,394*	5,342	5,848	4,887	5,340	5,140	
Earnings per worker in 1999	28,249	31,905*	27,033	29,314*	28,968*	28,346	28,618*	34,992*	30,391*	28,596	30,089*	29,593*	27,445	
Income per capita in 2000	21,865	26,628*	20,002	21,485	23,718*	21,891	20,717	29,552*	22,898*	21,895	24,215*	22,810*	20,727	
Change 1990-2000	7,457	8,813*	5,802*	7,243*	7,566*	7,363	5,704	11,080*	7,323	7,834*	8,419*	7,471*	6,564	
Median household income in 1999	33,325	37,239*	29,635*	34,896*	34,447*	33,215	33,905*	44,521*	36,128*	32,843	36,396*	35,001*	31,812	
Change 1989-1999	11,477	11,475*	10,280	13,495*	9,411*	11,231	11,146	16,220*	11,630*	11,244	11,677*	11,952*	10,531	
Median monthly rent in 2000	440*	556*	384	421*	460*	445*	473*	660*	535*	431*	488*	474*	384	
Change 1990-2000	115	140*	110	111	85*	126	151*	228*	142*	129*	150*	134	104	

Note: These are county averages (simple means).

MW=Midwest; NE=Northeast; MT=Mountain; LK=Lake; Nat.=National; AP=Appalachian; Misc.=Miscellaneous; Rec.=Recreation.

*Significantly different from nonrecreation county mean at 5-percent error level.

Source: ERS calculations based on data from U.S. Census Bureau and Bureau of Economic Analysis, U.S. Department of Commerce, and Bureau of Labor Statistics, U.S. Department of Labor. Recreation types from Johnson and Beale (2002), USDA, Economic Research Service.

Table 6

Social conditions and trends by type of recreation county

Indicator	Casino	Ocean Resort	Reservoir Lake	MW Lake Home	NE MT/LK Home	Nat. Park	West MT	Ski Resort	Other MT	South AP MT Resort	Rec. Misc.	Rec. total	Non-rec. total
Population growth 1990-2000	16.7*	18.8*	20.4*	15.8*	5.8	13.3*	27.6*	38.0*	24.9*	18.4*	23.3*	20.2*	6.9
Mean travel time to work in 2000	21.7	22.3	24.3	22.3	23.3	20.3*	23.1	22.1	21.2	26.3*	23.5	22.7	23.0
Change 1990-2000	2.7*	3.8	4.8	4.8*	4.8	4.1	5.1*	4.6	3.9	5.3	3.6	4.4	4.3
Poverty rate in 1999	18.8*	12.4*	15.2	10.7*	12.0*	16.2	14.0*	10.2*	13.9	13.2*	13.3	13.2*	15.7
Change 1989-1999	-4.3	-1.6*	-2.9	-4.4*	0.0*	-4.4	-1.3*	-1.6*	-1.5*	-2.6	-2.1	-2.6	-3.1
Residents without high school diploma in 2000	21.2*	19.0*	23.6	18.0*	18.7*	17.7*	16.1*	11.8*	14.5*	24.7	19.8*	18.4*	25.0
Change 1990-2000	-7.3	-6.9*	-9.4*	-8.9	-6.3*	-6.8	-5.9*	-3.5*	-5.6*	-10.8*	-7.4	-7.4	-8.4
Residents with at least a B.A. degree in 2000	16.2*	22.5*	13.3	14.9*	17.7*	20.9*	20.5*	33.2*	24.3*	17.0*	19.6*	19.2*	13.6
Change 1990-2000	2.7	4.7*	2.8	3.4*	2.7	4.2*	4.5*	6.5*	4.8*	3.4*	4.2*	4.0	2.4
Physicians per 100,000 residents in 2003	78.0	166.6*	52.8*	97.5	181.9*	110.1	109.9*	192.0*	190.7*	149.7*	114.4	123.0*	83.4
Age-adjusted death rate per 100,000 residents in 2000-02	955.6	839.5*	858.8	829.7*	869.0	809.1*	766.3*	661.7*	759.3*	869.7	772.7*	817.3*	898.3
Rate of serious crime per 100 residents in 1999	3.2*	3.2*	2.0	2.6	2.6	2.5	2.6	3.8*	3.0	2.0	3.3*	2.8*	2.4

Note: These are county averages (simple means). MW=Midwest; NE=Northeast; MT=Mountain; LK=Lake; Nat.=National; AP=Appalachian; Misc.=Miscellaneous; Rec.=Recreation.

*Significantly different from non-recreation county mean at 5-percent error level.

Source: ERS calculations based on data from U.S. Census Bureau and Bureau of Economic Analysis, U.S. Department of Commerce, and Bureau of Labor Statistics, U.S. Department of Labor. Recreation types from Johnson and Beale (2002), USDA, Economic Research Service.

Conclusions

This study provides quantitative information on how tourism and recreation development affects socioeconomic conditions in rural areas. Specifically, we wanted to address economic issues related to employment, income, earnings, and cost of living, and social issues such as poverty, education, health, and crime. A summary follows of our main findings on the socioeconomic impacts of rural recreation and tourism development.

- **Employment.** Our regression analysis found a positive and statistically significant association between recreation dependency and the percentage of working-age population with jobs. We also found that, with the exception of the older (65 and over) population, recreation dependency positively affected the change in this employment measure during the 1990s.
- **Earnings.** We examined earnings per job and earnings per resident to measure the value of the jobs associated with rural recreation development. We found that the average earnings per job in recreation counties were not significantly different than in other nonmetro counties, and we found no direct (linear) relationship between local dependency on recreation and local earnings per job in our recreation counties. However, our regression analysis found a positive relationship between recreation and growth in earnings per job during the 1990s. Thus, the trend seems to favor the pay levels for jobs in these recreation counties. These findings concern earnings of all who work in the county, including nonresidents. They report earnings per job, not per worker—an important distinction because workers may have more than one job, and the availability of second jobs (part-time and seasonal) may be greater in recreation counties than elsewhere. When we focused on total job earnings for residents of recreation counties, we found these earnings were significantly higher (\$2,000 more per worker) than for residents of other rural counties. The regression analysis also found a significant positive relationship between recreation and resident-worker earnings. So the earnings picture for recreation counties appears positive for the average resident.
- **Cost of living.** Our research suggests recreation development leads to higher living costs, at least with respect to housing. We found that the average rent was 23 percent higher in recreation counties, and it was positively and significantly associated with the degree of recreation dependency in our regression analysis. While this may reduce some of the economic advantages for residents of recreation counties, it does so only partially. Median household incomes, on average, were \$3,185 higher in recreation counties than in other rural counties. Annual costs associated with rent were \$1,080 higher in recreation counties, offsetting only about a third of the recreation county income advantage.
- **Growth strains.** We found recreation led to significantly higher rates of population growth. In theory, this can aggravate social problems, such as school crowding, housing shortages, pollution, and loss of identification with the community. The one growth-related social problem we addressed was road congestion. Examining the time it takes to commute to work, we found little evidence that congestion was pre-

senting undue problems for residents in recreation counties. Moreover, our regression analysis found that recreation was associated with smaller increases in average commute times in the 1990s than in other rural counties.

- **Poverty.** Another social problem that appeared to be reduced in recreation counties was poverty. Our regression analysis found recreation was associated with lower poverty rates and with larger declines in the poverty rate during the 1990s.
- **Crime.** There may be some cause for concern with regard to crime. We found crime rates (for serious crimes) were higher in recreation counties than in other rural counties, and our regression analysis also found a statistically significant positive relationship between crime rates and recreation dependency. However, crime statistics may be biased in recreation areas because crimes against tourists and seasonal residents are counted in the crime rate, while tourists and seasonal residents are not counted as part of the population base upon which the rate is calculated. Thus, even if people in recreation areas do not face a higher chance of becoming victims of crimes, the crime rates of these areas will appear higher than elsewhere. Nonetheless, one may still argue that recreation-related crime adds to the local cost of policing and incarcerating criminals, just as recreation-related traffic—even though it may not create congestion—adds to the cost of maintaining roads.
- **Education and health.** Our analysis found that recreation is associated with a more educated population, particularly with a higher percentage of college-educated people. We also found relatively good health conditions (measured by age-adjusted death rates) in recreation counties. This might be expected from the higher numbers of physicians per 100,000 residents that we found in recreation counties. However, our regression analysis did not find a statistically significant relationship between recreation dependence and the local supply of physicians. So some other explanation must be posited for the general good health in recreation counties, such as greater opportunities for physical exercise or residents who are more health-conscious.
- **Variations by county type.** Conditions vary significantly by recreation county type. For example, Ski Resort counties have among the wealthiest, best educated, and healthiest populations of all recreation county types. Ski Resort counties also have relatively high rates of crime. In contrast, Reservoir Lake counties and South Appalachian Mountain Resort counties have among the poorest and least educated residents of all recreation county types, along with relatively high age-adjusted death rates, but they have relatively low crime rates. Casino counties—which had among the highest rates of job growth and the largest absolute increases in earnings per job during the 1990s—also had among the highest rates of growth in employment per person for seniors, perhaps reflecting the greater need for jobs among those over age 65 in these relatively high-poverty communities.

Ideas for Future Research

We focused mainly on conditions facing residents of mature rural recreation counties, that is, places that already have a substantial amount of recreation. Additional insights may come from expanding the analysis to include emerging recreation areas and neighboring places that may be affected by spillover impacts from recreation areas. Future research might also address issues related to specific population subgroups, such as low-paid workers, who may face more significant problems related to the high cost of housing in recreation areas. The analysis might also be expanded to examine recreation impacts on other aspects of community well-being, such as the environment, public services, institutions like churches and charitable foundations, and small business formation and entrepreneurial activity.

Our knowledge of rural recreation impacts might also benefit from different formulations of the regression model. For example, models could be fine-tuned to focus on individual indicators, or they could be estimated separately for individual regions and types of recreation areas. Feedback effects might be incorporated into the model—for example, recreation can lead to higher housing costs, which in turn can lead to reduced tourism and recreation development. More sophisticated models may be able to separate out these two effects. The models might also be examined over different time periods to test for cyclical effects and robustness over time.

Research might also measure the effects of specific State and local policies, along with other factors thought to affect the level of rural recreation and tourism (such as the availability of natural amenities and proximity and access to nonmetro areas). This might help State and local officials assess their potential for recreation and tourism development and identify strategies to further this development.

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Appendix: Regression Analysis

Making inferences from simple comparisons of recreation and other nonmetro county means can be misleading because it is possible that much of the observed socioeconomic difference between the two groups could be coincidental and not directly related to the extent of recreation.

For example, during the 1990s, many recreation counties in the Rocky Mountains benefited from an unusual regional phenomenon associated with the outflow of population from metropolitan California. This raises a question: How much of the difference in growth that we observed between recreation and other nonmetro counties nationwide was region-specific, associated with this one-time outflow of population?

Similarly, the decade of the 1990s was one of rapid economic improvement, which may have particularly benefited places with high poverty rates, providing job opportunities to many who, under normal conditions, would have had a hard time finding jobs. Many of these high-poverty rural areas are in the South in other nonmetro counties. This largely regional phenomenon could have led to our finding that recreation counties nationwide benefited less from poverty rate reduction than did other nonmetro counties. But would we find the same thing if we looked at each region separately?

Other factors unrelated to recreation might also be expected to differentially affect recreation and other nonmetro areas and lead to a potential bias in the differences observed between the two types of counties. For example, counties that are more urban in nature may have had developmental advantages over more rural and isolated areas. While recreation is expected to add to the level of urbanization, recreation counties are still less urban than other nonmetro counties on average, so this potential bias could mask the beneficial impact of recreation in simple comparisons.

Regression Methodology

In an attempt to overcome potential biases, we narrowed our analysis to recreation counties and conducted a regression analysis to see how a recreation county's extent of recreation dependency might affect the socioeconomic indicators examined in this report. Our measure of recreation dependency is the weighted average of a county's Z-scores covering tourism-related employment and income shares of the local economy and the recreational home share of total county homes, as developed by Johnson and Beale (2002): the larger the average, the more dependent a county is on recreation and tourism.¹⁹ In addition, we included 10 dichotomous variables reflecting the Johnson and Beale recreation county types (for statistical reasons, we excluded the miscellaneous recreation county type). This allows for significant socioeconomic variations by type of recreation county (but it assumes that impacts associated with changes in recreation dependency do not vary with recreation type).

Following the approach of English et al. (2000), we also included several control variables that were not highly correlated with recreation dependency but that might be expected to affect local socioeconomic conditions. For example, we included eight dichotomous (0,1) variables identifying the

¹⁹Among the recreation counties we included in our analysis, recreation dependency ranged from a minimum of 0.12 to a maximum of 8.60, with a mean of 1.56 and a standard deviation of 1.23.

Census regional subdivisions. We did not include a dichotomous variable for one of the nine subdivisions—the Southeast—to avoid statistical problems.

We also included several demographic measures related to urbanization that are often included in empirical studies explaining regional socioeconomic variations. One was a dichotomous variable indicating whether the county was influenced by a nearby metropolitan area (based on adjacency as defined in the ERS 1993 Beale Codes, which requires both physical adjacency and significant commuting to the metro area). The other two demographic measures were county population density and percentage of county population residing in the rural portion of the county.

Ideally, an attempt to explain cross-county variations in socioeconomic indicators would involve separate models for each indicator, using theory to identify the explanatory variables and the form of the regression most relevant for a particular indicator. Given the large number of indicators in this study, we decided a simpler approach was expedient, so we followed English et al. in using just one set of explanatory variables for all of the indicators examined in our study. This results in some imprecision.

One of the ways our analysis differed from that of English and his colleagues was that our regressions only explained variations among our 311 recreation counties (rather than including all nonmetro counties as English did). In addition, we ran two ordinary least-squares regressions explaining intercounty variations rather than one. One of our regressions explained intercounty variations in the year 2000 (or the most recent year the data were available). The other regression explained intercounty variations in the change in the indicator over the previous 10 years. The change regression, which used the identical set of explanatory variables, may be viewed as a check on the year 2000 regression. In most cases, the regressions produced similar results: if recreation dependency was significant in the 2000 regression, it usually had the same sign and was significant in the change regression.

We also ran additional regressions for each indicator, adding a “squared” version of the recreation dependency variable to allow for a curvilinear relationship. We do not show the results of these additional regressions because in most cases they did not affect our results—the squared variable either explained little or no additional variation, or it only replaced the non-squared recreation dependency variable in significance with the same sign. In discussing our findings, however, we mention two cases where these curvilinear recreation factor regressions provided interesting results.

Regression Findings

Space limitations prevent us from showing the complete regression results here, including estimated coefficients for the many control variables we used in our regressions.²⁰ However, we can summarize our findings by showing only the regression coefficients for the recreation dependency variable in the linear regressions we ran to explain variations for each of the socioeconomic variables of interest. For example, each horizontal row in table 7 summarizes the results of one or two regressions covering a particular socioeconomic variable. Results for the 2000 regression refer to regres-

²⁰Detailed regression results are available from the authors upon request.

sions that explain socioeconomic variations in the year 2000 (or in the next-closest year available). Results for the 1990s change regression refer to regressions that explain variations in the change in socioeconomic variables during the 1990s. Thus, table 7 summarizes the results for 29 regressions. In addition, the regression statistics shown are unstandardized, and one should not attempt to draw inferences about their relative importance based on their magnitudes.

These regression coefficients are generally consistent with what we previously found when comparing simple means for recreation and other nonmetro counties (tables 2 and 3). Dependency on recreation was significantly related to most of our economic indicators, and the recreation dependency regression coefficients were also generally consistent with most of our prior findings with regard to social indicators.

In addition, we found statistically significant relationships that were not apparent from comparisons of means for recreation and other nonmetro

Table 7

Linear regression analysis measuring the effect of recreation dependency on economic and social indicators

Dependent variables	2000 regression		1990s change regression	
	Recreation dependency B estimate	Regression's explanatory power ¹	Recreation dependency B estimate	Regression's explanatory power ¹
Economic indicators:				
Job growth rate	NA	NA	5.50**	0.184
Employment-population ratio:				
Ages 16-24	1.13**	0.209	0.56**	0.115
Ages 25-64	0.92**	0.211	0.48**	0.139
Ages 65 and over	1.04**	0.364	0.30	0.013
Earnings per job	-7.95	0.396	482.77**	0.265
Earnings per worker ²	846.49**	0.317	NA	NA
Income per capita	1,044.52**	0.265	487.73**	0.207
Median household income ²	1,474.40**	0.393	907.59**	0.339
Median rent	32.59**	0.516	10.74**	0.377
Social indicators:				
Population growth rate	4.59**	0.282	2.85**	0.245
Travel time to work	-0.25	0.327	-0.44**	0.157
Poverty rate ²	-0.84**	0.249	-0.43**	0.242
Percent without HS diploma	-1.37**	0.468	0.22	0.341
Percent with bachelor's degree	2.24**	0.491	0.65**	0.211
Physicians per 100,000 population ³	0.69	0.280	NA	NA
Age-adjusted death rate per 100,000 population ⁴	-24.20**	0.290	NA	NA
Crime rate ²	0.68**	0.264	NA	NA

NA=Not applicable.

* The coefficient is statistically different from zero at the .05 level.

** The coefficient is statistically different from zero at the .01 level.

¹Adjusted R-square statistic (fraction of variation explained by regression).

²Data are reported for 1999

³Data are reported for 2003.

⁴Data are reported for 2000-02

Source: ERS calculations, based on data from U.S. Census Bureau and Bureau of Economic Analysis, U.S. Department of Commerce, and Bureau of Labor Statistics, U.S. Department of Labor.

counties. For example, the regression analysis showed significant positive relationships between recreation and the employment-population ratios for all three age groups studied, whereas there was little or no difference in the means for these ratios.

In some cases, the regression analysis raises questions about previously observed statistical differences. For example, we earlier found that recreation counties were statistically different from other nonmetro counties with respect to number of physicians per 100,000 residents, but the regression analysis found no statistically significant relationship between this indicator and recreation dependency.

For travel time to work, we had previously found no statistically significant difference between recreation and other nonmetro counties, either for the year 2000 or for the trend during the 1990s. However, the regression analysis revealed a statistically significant negative relationship between recreation dependence and change in travel time to work during the 1990s.

One of the more interesting findings was recreation dependency's negative and statistically significant relationship with the change in poverty rate. This means that the more recreation dependent a county is, the bigger its decline in poverty rate during the 1990s, controlling for other factors. The finding contrasts with our simple descriptive analysis, which found that recreation counties had, on average, a smaller decline in poverty than other nonmetro counties during the 1990s. This suggests that, as we suspected, the smaller average decline in poverty for recreation counties may have been simply a geographic coincidence, because when we controlled for regional differences and other factors in our regression analysis we found that the higher a county's recreation dependency, the more its poverty was reduced during this decade.

Another interesting finding involved earnings per job. We initially found that recreation dependency had a negative but statistically insignificant coefficient for earnings per job (in the 2000 model). When we ran the curvilinear version of the first regression (the 2000 model), we found a significant negative coefficient for recreation dependency and a significant positive coefficient for recreation dependency squared.²¹ This implies that the recreation counties with moderate degrees of recreation dependency had relatively lower earnings per job, while those with higher or lower recreation dependency had higher earnings. Taken together, these findings present a somewhat muddled picture with respect to recreation impacts on earnings per job—there is no clear indication that recreation hurts a county in this regard. We got a clearer regression finding regarding the change in earnings per job during the 1990s, which revealed a positive and significant relationship between recreation dependency and the growth in earnings per job.

Two other indicators had different results for the 2000 regressions and the 1990s change regression: the employment population ratio for the elderly and the percent of adult (ages 25 and older) residents without high school diplomas. In both cases, the regressions explaining the change in the indicator produced insignificant coefficients for recreation dependency. For the employment-population ratio for ages 65 and up, the change regression performed very poorly, explaining less than 6 percent of the variation—less

²¹The nonlinear version of the change regression did not produce a similar significant relationship.

than any other regression in our analysis. This suggests that we might find a significant relationship if we were to improve the model to explain the behavior of the elderly. For the other indicator, the percentage without high school diplomas, we may need to find some other explanation, since the regression explaining change for this indicator performed better in terms of explaining variation than all of our other change-form regressions. Perhaps something unusual was going on in the 1990s that kept places with higher recreation dependencies from experiencing more significant declines in the percentage lacking high school degrees.²²

We have already mentioned recreation's curvilinear relationship with earnings per job. The other case where we found a curvilinear relationship involved recreation's effects on population growth rates in the 1990s. The linear regression explaining population growth rate had a statistically significant positive coefficient for recreation dependency. The curvilinear regression had a statistically significant positive coefficient for recreation dependency and a statistically significant negative coefficient for recreation dependency squared. This implies that counties with moderate recreation dependencies have higher growth rates than counties with smaller or larger recreation dependencies.

²²For example, it may be that during the 1990s, higher educated retirees began to move to a wider array of recreation areas, whereas before they may have concentrated in the most recreation-dependent areas.