

# Does Wilderness Impoverish Rural Regions?

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**Abstract:** A study of 113 rural counties in the American West, 43% containing designated wilderness areas, shows that for the period 1970 to 2000 there is a significant positive correlation between the percent of land in designated wilderness and population, income, and employment growth. New forms of economic activity accompany wilderness: growth of investment income and nonfarm self-employment income are correlated with the presence of wilderness.



Article co-authors F. Patrick Holmes (left) and Walt Hecox (right). Photo by Sam Rees.

## Introduction

Some areas seek regional economic prosperity through continued resource extraction in preservation of a traditional way of life. Others seek alternative uses of the land for recreation and tourism as well as to gain spiritual fulfillment and to preserve intergenerational opportunities in safeguarding ecological integrity (Morton 2000). Pervasive frontier resource-extraction arguments (Patric and Harbin 1998), emphasizing theories of economic growth and development based upon the appropriation and use of natural resources, continually clash with preservationist arguments that emphasize regional development based upon protection of lands creating natural amenities and desirable lifestyles (Rasker and Roush 1996; Power and Barrett 2001). New

notions that wealth stems from the existence of intact ecological systems, scenic opportunities, and desirable lifestyles contest traditional notions that “true wealth comes from the ground.” The American West, both old and new, frontier and sublime, is continually re-creating itself as a result of the pulling between these disparate notions of regional development.

The stated objectives of the 1964 Wilderness Act include the goals to preserve areas primarily affected by the forces of nature and to afford the American public with opportunities for solitude (Wilderness Act, Section 2[c], 1964). A paradox thus is introduced: “Setting aside” relatively undisturbed tracts of land actually brings them into the realm of human affairs, inevitably accentuating their inextricable linkages to surrounding natural, political, and cultural landscapes (McCool and Cole 2000). Thus, wilderness designation plays an important role in influencing the quality of life experienced in adjacent and surrounding local communities.

The highly contested debate over federal wilderness designation ultimately involves the real and perceived economic effects of such a designation (Duffy Deno 1998). Oftentimes a community will assert that designated wilderness is an impediment to economic growth by locking up potentially valuable resources. They claim that traditional extractive industries like farming, mining, logging, and ranching will suffocate from wilderness use and management restrictions. Others assert that the political act of preserving wilderness

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natural amenity attributes like scenic beauty, clean water, pristine air quality, and recreational opportunities will create new jobs by providing attractive places to live, work, and do business (Power 1996).

This research updates the analysis of economic conditions in rural counties in the American West that contain formally designated wilderness. Results provide empirical evidence in support of the argument that protected wilderness is likely to be an asset and not a liability. They show that counties containing high proportions of their lands devoted to federally designated wilderness have experienced economic prosperity in the rural American West. Similar analysis of the relationship of public “wildlands”—federally owned lands in rural counties that are under management by the Bureau of Land Management (BLM), the U.S. Forest Service (USFS) and the National Park Service (NPS)—to measures of economic prosperity reveal weaker but still significant correlations. The results provide additional support to the logic of amenity land values contributing to economic prosperity and viable rural communities.

## Community Values

Many people fear government’s protection of the land will be at the expense of whole communities and their economic vitality (Rasker and Roush 1996). These fears have originated from historical conceptions of the community’s economic base and periodic exposure to cyclical boom-bust economies typical of the rural nonmetropolitan West (Power and Barrett 2001). If valid, claims such as these generate considerable opposition for further formal designation of wilderness in rural areas.

The economies of the rural West are undergoing profound changes. Tech-

nological advances in the manufacturing industry have limited the demand for raw materials, and other technological advances in communications and transportation have contributed to rural economic vitality in new ways. Fax machines, modems, efficient delivery carriers like Federal Express, and increased commuter air travel destinations have all contributed to the ability of small firms and individuals to work where they want to live rather than live where the jobs exist (Johnson and Rasker 1995a, 1995b). Access to natural amenities like scenic beauty, recreational opportunities, clean air, and small communities takes precedence over the typical business and individual location decisions based on low cost of living and job opportunities (Rasker 1993). Counties with high amenity values should be experiencing economic growth dominated by industries that benefit from the presence of tourists, retirees, and entrepreneurs. Population growth in these regions should stimulate new business development and the expansion of old businesses.

## Study Design

A study area of 113 rural counties in the American West, of which 50 counties contained a portion of their land formally devoted to wilderness, was chosen in order to conduct an analysis of income, employment, and population growth relative to the proportion of lands in the National Wilderness Preservation System (NWPS). Of the 50 counties containing wilderness, the percent of total land area designated as wilderness ranged from less than 1% to 50%. The western United States was chosen in part for its high abundance of wilderness areas and because it is the region containing the most public wildlands still under consideration for wilder-

ness designation. The western region was delineated as the continental portion of the western census region as determined by the U.S. Census Bureau (AZ, CA, CO, ID, MT, NM, NV, OR, WA, WY). Due to its high degree of geographic isolation and limited access to supply of labor and other capital, Alaska was excluded from this analysis. Appropriate counties for the study were selected from a rural-urban continuum code developed by the U.S. Department of Agriculture Economic Research Service. These classification codes describe counties by degree of urbanization and adjacency to metro areas (Butler 1994). Because of the study’s intent to focus on rural regions and local economic prosperity, only completely rural counties containing urban populations of no more than 2,500 people were included. Of the 113 rural counties, 83 have a further attribute of not being adjacent to another county with urban characteristics (see Figure 1). This distinction, of rural counties adjacent versus not adjacent to urban counties, controls for intercounty commuting and cross-boundary economic effects.

Data for population, total employment, and total personal income for the period from 1970 to 2000 were



Figure 1—Study Area Counties

Figure 1—Study area counties in the western United States

**Table 1—Pearson’s correlation coefficients between percent wilderness and other land management categories, and growth indicators in the American West**

|                                   | Income growth<br>1970–2000 | Employment growth<br>1970–2000 | Population growth<br>1970–2000 |
|-----------------------------------|----------------------------|--------------------------------|--------------------------------|
| <b>Completely rural counties</b>  |                            |                                |                                |
| %Wilderness                       | 0.295                      | 0.311                          | 0.310                          |
| %BLM + USFS                       | 0.227                      | 0.248                          | 0.227                          |
| %BLM + USFS + NPS                 | 0.229                      | 0.248                          | 0.235                          |
| <b>Rural Nonadjacent counties</b> |                            |                                |                                |
| %Wilderness                       | 0.354                      | 0.410                          | 0.411                          |
| %BLM + USFS                       | 0.330                      | 0.346                          | 0.418                          |
| %BLM + USFS + NPS                 | 0.331                      | 0.344                          | 0.417                          |

obtained from the U.S. Bureau of Economic Analysis’ Regional Economic Information System (REIS) CD-ROM. These data were used to calculate percent growth for the period 1970 to 2000 and average annual growth for the same time period.

Data for nonlabor income returned on investments and data on income earned by nonfarm self-proprietors were also collected from the REIS CD-ROM. Together these two nontraditional income types were used as surrogates for new types of economic activity in rural areas. Investment income (from dividends interest and rent) can bring an influx of “new” money into a region to spur other economic growth. Nonfarm self-employment income, (nonfarm proprietor’s income) is defined as the income of sole proprietorships, partnerships, and tax-exempt cooperatives outside of agriculture. Growth here can be an infusion of entrepreneurship and

a healthy business environment into a rural region.

These nontraditional income types were analyzed over the period 1970 to 2000 using shift-share analysis to determine each county’s competitive advantage in attracting new income relative to the American West as a whole. A geographic information system was used to calculate the percent of each county’s total land area that is preserved as part of the NWPS. The percent of land devoted to formally designated wilderness was then correlated with the competitive advantage calculations and the economic growth indicators. In addition, correlations were calculated between the economic growth indicators and the percent of land owned by the BLM, USFS, and NPS.

Finally, the U.S. Census Bureau’s County Business Patterns data set was used for the period 1980 to 1997 to profile service employment characteristics

in wilderness versus nonwilderness counties of the rural West. These data were used to explore the quality and type of employment growth occurring in wilderness counties relative to nonwilderness counties. A midpoint method was used to estimate data for employment figures in cases where information was not disclosed for confidentiality reasons. In cases where county annual payroll data were not disclosed it was not possible to estimate the missing data, and those counties were excluded.

## Results and Discussion

The correlation between designated wilderness area in a county and growth in population, income, and employment is positive and statistically significant (see Table 1). This result suggests that larger proportions of formal wilderness are associated with growth in the completely rural counties of the West. Furthermore, these correlations became stronger as counties adjacent to metropolitan areas were excluded, suggesting that wilderness is strongly associated with successful community economic development in cases of geographic isolation from metropolitan areas. Also, average annual growth in population, employment, and income is higher in rural counties that contain wilderness than in rural counties that have no federal lands included within the NWPS, although both sets of rural counties have lower growth rates than for the entire American West U.S. Census Region (see Table 2).

The correlation between the percent of land in a county protected as wilderness and investment income, relative to the American West, is both positive and statistically significant (see Table 3). A similar correlation holds for the rural counties in the West not adjacent to metropolitan areas.

**Table 2—Average annual growth from 1969–2000 in growth indicators for the American West, rural counties with wilderness, and rural counties without wilderness.**

|                                   | Income growth | Employment growth | Population growth |
|-----------------------------------|---------------|-------------------|-------------------|
| The American West (11 states)     | 2.0           | 2.9               | 8.7               |
| Rural counties with wilderness    | 1.9           | 2.8               | 8.5               |
| Rural counties without wilderness | 1.0           | 1.4               | 7.2               |

**Table 3—The correlation between wilderness and competitive advantage in amenity income indicators**

|                             | Competitive shift in investment income | Competitive shift in self-employment income |
|-----------------------------|----------------------------------------|---------------------------------------------|
| Completely rural counties   | 0.406                                  | 0.362                                       |
| Rural non-adjacent counties | 0.442                                  | 0.382                                       |

The correlation between the percent of land preserved as wilderness and nonfarm self-employment income is positive and significant overall and with those counties not adjacent to metropolitan areas (see Table 3).

Are these new businesses simply generating low-paying jobs in the services sector? Jobs in mining, logging, ranching, and oil drilling pay higher wages than

do the average service jobs, like hotel room cleaning and fast food service (Freudenburg and Gambling 1994). However, the service sector includes a wide range of professions, from making hamburgers and shining shoes to computer software design and management consulting. Some have suggested that the decentralization of many industries and increased mobility as a result of improved

**Table 4—Employment Growth and Change for Select Service and Natural Resource-based Industries in Wilderness and Non-Wilderness Study Counties for the Period from 1980-1997.**

| Standard industry classification       | Wilderness             |                     | Nonwilderness          |                     |
|----------------------------------------|------------------------|---------------------|------------------------|---------------------|
|                                        | # of Employees in 1997 | % of Growth in 1997 | # of Employees in 1997 | % of Growth in 1997 |
| Agricultural services                  | 1,198                  | 194.3%              | 634                    | 52.0%               |
| Forestry                               | 265                    | 120.8%              | 167                    | 317.5%              |
| Fishing, hunting, and trapping         | 20                     | —                   | 30                     | -50.0%              |
| Metal mining                           | 3,020                  | 37.1%               | 3,515                  | 522.1%              |
| Coal mining                            | 60                     | -93.7%              | 750                    | -44.6%              |
| Oil and gas extraction                 | 889                    | -52.3%              | 419                    | -54.1%              |
| Apparel and accessory retail stores    | 1,343                  | 148.2%              | 285                    | -25.0%              |
| Eating and drinking places             | 9,945                  | 82.0%               | 4,088                  | 31.8%               |
| Insurance agents, brokers, and service | 540                    | 52.1%               | 496                    | 56.5%               |
| Real estate                            | 2,819                  | 96.4%               | 542                    | -10.4%              |
| Hotels and other lodging places        | 9,614                  | 125.3%              | 1,800                  | 54.2%               |
| Personal services                      | 743                    | 69.6%               | 418                    | 30.6%               |
| Business services                      | 1,318                  | -12.1%              | 651                    | 171.3%              |
| Amusement and recreation services      | 10,024                 | 136.8%              | 750                    | 111.3%              |
| Health services                        | 5,147                  | 156.7%              | 5,806                  | 190.6%              |
| Legal services                         | 499                    | 40.2%               | 398                    | 15.0%               |
| Educational services                   | 641                    | 364.5%              | 412                    | 930.0%              |
| Social services                        | 1,414                  | 169.8%              | 1,113                  | 87.1%               |
| Membership organizations               | 1,081                  | 84.5%               | 837                    | 27.6%               |

transportation and communications have been the driving forces behind the transition to successful amenity-based economies (Johansen and Fuguitt 1984).

An evaluation of both overall job growth in the service sector and the quality of growth in the service sector in wilderness counties is critical to understanding whether amenity-based development strategies present viable and sustainable options for rural America. Table 4 shows employment growth in a selected set of service sector- and natural resource extraction-based industries in wilderness and nonwilderness counties. Employment is classified by the Standard Industrial Classification system of the U.S. Census Bureau for the period from 1980 to 1997. Employment growth in study area counties containing wilderness outpaces nonwilderness rural county growth in many major service categories except for the insurance agents, brokers, and service category; business services; health services; and educational services. Business services employment marginally declined in wilderness counties during the study period, but remained well above the total amount of employment in nonwilderness counties. Wilderness counties tended to have far more employment growth from 1980 to 1997 in the lower paying industries, including hotels and other lodging places and eating and drinking establishments, than in nonwilderness counties, but simultaneously experienced growth in the higher paying services, such as legal services and real estate services relative to nonwilderness counties in the rural West.

What about growth and change in natural resourcebased employment? Extractive industry employment growth declined for coal mining and oil and gas extraction in both wilderness and nonwilderness counties, a trend that mirrored experience throughout the nation during that time period. The only extractive industry category where wil-

**Table 5—Business establishment growth and change for select service and natural resource-based industries in wilderness and nonwilderness study counties for the period from 1980–1997**

| Standard industry classification       | Wilderness              |                     | Nonwilderness           |                     |
|----------------------------------------|-------------------------|---------------------|-------------------------|---------------------|
|                                        | # of Businesses in 1997 | % of Growth in 1997 | # of Businesses in 1997 | % of Growth in 1997 |
| Agricultural services                  | 200                     | 257.1%              | 135                     | 145.5%              |
| Forestry                               | 19                      | 111.1%              | 14                      | 600.0%              |
| Fishing, hunting, and trapping         | 2                       | —                   | 5                       | 66.7%               |
| Metal mining                           | 28                      | -30.0%              | 21                      | -4.5%               |
| Coal mining                            | 1                       | -85.7%              | 4                       | -50.0%              |
| Oil and gas extraction                 | 64                      | -13.5%              | 51                      | -17.7%              |
| Apparel and accessory retail stores    | 207                     | 109.1%              | 45                      | -38.4%              |
| Eating and drinking places             | 1,068                   | 88.4%               | 635                     | 55.6%               |
| Insurance agents, brokers, and service | 153                     | 128.4%              | 119                     | 88.9%               |
| Real estate                            | 558                     | 186.2%              | 170                     | 71.7%               |
| Hotels and other lodging places        | 510                     | 104.0%              | 218                     | 43.4%               |
| Personal services                      | 151                     | 77.6%               | 86                      | -4.4%               |
| Business services                      | 327                     | 463.8%              | 137                     | 495.7%              |
| Amusement and recreation services      | 350                     | 284.6%              | 119                     | 164.4%              |
| Health services                        | 356                     | 68.7%               | 221                     | 33.1%               |
| Legal services                         | 132                     | 37.5%               | 83                      | 45.6%               |
| Educational services                   | 56                      | 409.1%              | 24                      | 300.0%              |
| Social services                        | 232                     | 346.2%              | 174                     | 270.2%              |
| Membership organizations               | 323                     | 233.0%              | 239                     | 184.5%              |

derness counties lagged substantially behind nonwilderness counties was the metal mining category, where about 2,750 new jobs were created in Eureka County, Nevada, during the study period, accounting for nearly the entire difference.

Table 5 shows growth in the number of business establishments for these same industry categories in the study-area counties. Wilderness counties only lag substantially behind nonwilderness counties in a single category, the metal mining classification, while outpacing nonwilderness counties in business creation in all service categories.

The types of jobs being added in rural counties and the associated average wages reveal much about the

quality of growth. Table 6 shows the average annual wage for selected employment categories in the study region and, for each selected category of natural resource and service-based employment, new growth in jobs as a percent of those selected industries for wilderness and nonwilderness counties. This analysis suggests that although there is some validity to the argument that wilderness counties attract growth in response to added tourism in the lower paying jobs of the service sector, growth is also simultaneously occurring in the higher paying professional services and some natural resource extraction categories at higher rates in Wilderness counties than in nonwilderness counties.

## Conclusion

Growth in savings by middle-age workers over the past 10 years has been substantial, creating a new form of “basic” income for local communities as new residents flock to rural regions (Nelson 1999). Likewise, the proliferation of small businesses and a healthy business environment are helping wilderness counties attract both investment and self-employment income. Growth is not just occurring in low-wage businesses. Wilderness counties are experiencing growing employment in many of the high-wage service sector industries in the rural West, as compared with nonwilderness counties of the same study region.


One problem with wilderness designation is not that it limits growth, but rather that it promotes demographic and economic growth at rates that may jeopardize the preservation of the natural amenities themselves (Power 1996). In order to understand the economic impact of wilderness designation decisions, and how best to preserve the ecology of a region, environmentalists must acknowledge the impacts of preservation on local communities, including rapid growth that often outstrips communities’ infrastructure and dramatically changes the character of once-rural towns and counties.

This study has demonstrated that local areas in the American West with designated wilderness are not being impoverished. For the period 1970 to 2000, growth of nontraditional employment and income has been more rapid and sustained in counties that include designated wilderness. Data for the period 1980 to 1997 show that the jobs being created, both in the service sector and the natural resource extraction categories, contain a mix of wage levels.

Local communities need to move beyond the long debate over the economic consequences of wilderness

**Table 6—Average annual wage and percent of new jobs in selected industries in wilderness and nonwilderness study counties for the period from 1980–1997**

| Standard industry classification       | Average annual wage | % of new jobs in industry |               |
|----------------------------------------|---------------------|---------------------------|---------------|
|                                        |                     | Wilderness                | Nonwilderness |
| Agricultural services                  | 22,966              | 3.4%                      | 3.0%          |
| Forestry                               | 26,706              | 0.6%                      | 1.7%          |
| Oil and gas extraction                 | 38,247              | -4.2%                     | -6.7%         |
| Apparel and accessory stores           | 11,219              | 3.5%                      | -1.3%         |
| Eating and drinking places             | 8,507               | 19.3%                     | 13.5%         |
| Insurance agents, brokers, and service | 21,424              | 0.8%                      | 2.4%          |
| Real estate                            | 20,987              | 6.0%                      | -0.9%         |
| Hotels and other lodging places        | 12,349              | 23.0%                     | 8.6%          |
| Personal services                      | 13,253              | 1.3%                      | 1.3%          |
| Business services                      | 19,344              | -0.8%                     | 5.6%          |
| Amusement and recreation services      | 14,147              | 24.9%                     | 5.4%          |
| Health services                        | 19,012              | 13.5%                     | 52.0%         |
| Legal services                         | 21,097              | 0.6%                      | 0.7%          |
| Educational services                   | 28,044              | 2.2%                      | 5.1%          |
| Social services                        | 11,244              | 3.8%                      | 7.1%          |
| Membership organization                | 9,929               | 2.1%                      | 2.5%          |
| <b>Total for selected industries</b>   |                     | <b>100.0%</b>             | <b>100.0%</b> |

designation. Rather, the discussion and debate now should be focused on how to make decisions about the types of places rural areas want to become. How can these rural communities be made sustainable, both by protecting their natural amenity capital endowment and by shaping the resulting socioeconomic character of the surrounding regions to maintain healthy communities as growth occurs? These concerns shape the new arena where productive research on rural growth in the American West can be focused and results applied. Results will help inform communities, land managers, and political leaders as well as contribute to well-versed decisions about how best to proceed with the preservation of our remaining wildlands and their associated rural communities. 

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**Local economic prosperity in the rural American West is correlated with the presence of wilderness.**

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