

Population Growth, Economic Security, and Cultural Change in Wilderness Counties

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Abstract—A familiar version of the “jobs versus the environment” argument asserts that wilderness areas limit economic growth by locking up potentially productive natural resources. Analysis of the development paths of rural Western counties shows that this is unlikely: the presence of Wilderness is correlated with income, employment and population growth. Similarly, Wilderness seems to be a catalyst promoting the transition from stagnating extractive economies to relatively competitive amenity economies. As the relationship between local economies and the environment shifts from a reliance on extraction to a reliance on amenities, many local communities struggle to deal with the resulting cultural change.

Federal lands comprise approximately 48% of the acreage of the 11 Western states, and management of these lands often affects the development of nearby communities (Byers 1996). Because of this, policies governing the use of federal lands are both important and controversial. One of the most contentious debates over the use of federal lands focuses on wilderness areas.

The Wilderness Debate

Many in the rural west view wilderness as an economic liability. They claim that extractive industries—farming, ranching, logging and mining—fuel economic growth in rural areas. Consequently, they argue that locking up potentially productive resources in wilderness areas jeopardizes economic security by limiting the growth of both jobs and tax revenues. Others worry about the supply of raw materials. “(T)he needs of Americans for products from forests and other wildland cannot be met affordably and in sufficient quantity if lands are increasingly set aside solely for recreational enjoyment and nature worship” (Patric and Harbin 1988).

Others claim that the majority of the income in the rural West is no longer derived from extractive industries. Instead, natural amenities, desirable lifestyles and a relatively high quality of life give some communities an advantage in attracting and benefiting from tourists (bringing travelers checks), retirees (bringing social security payments and investment income), and footloose entrepreneurs (bringing additional employment). Because of this, environmental amenities such as wilderness act as a catalyst in the transformation of stagnating extractive economies into diversified, relatively

competitive amenity economies (Johnson and Rasker 1993, Power 1991, Power 1995, Rasker 1994, Rudzitis and Johansen 1989, Williams and Sofranko 1979). In other words, “Our natural landscapes no longer generate new jobs and incomes primarily by being warehouses from which loggers, farmers, fishermen, and miners extract commercial products. In today’s world, these landscapes often may generate more new jobs and income by providing the natural resource amenities—water and air quality, recreational opportunities, scenic beauty and the fish and wildlife—that make the . . . [area] an attractive place to live, work, and do business” (Power 1995, ii).

This paper provides empirical evidence for the latter argument in two ways. First, it dispels the jobs versus the environment myth that wilderness limits economic growth. It accomplishes this by demonstrating that the presence of wilderness is associated with population growth, income growth, and employment growth. Second, it focuses on the role wilderness plays in transforming the structure of local economies. This is accomplished by mapping the diffusion of amenity economies (and the retreat of extractive economies). Analysis of the resulting map demonstrates that the presence of wilderness influences when and where local economies shift from an Old West reliance on extraction to a New West reliance on unearned income. Finally, the paper explores some of the environmental and cultural challenges faced by wilderness communities.

Wilderness and Growth

Two themes underlie the economic history of the rural west: the region’s role as a supplier of raw materials (Worster 1992), and its vulnerability to cycles of explosive economic growth followed by rapid decline and stagnation (Gulliford 1989). This boom and bust pattern is a result of the fact that the majority of local rural economies depended on a single export oriented, extractive industry (Limerick 1987; Power 1991). Economic growth occurred where commercially exploitable natural resources were found, and successive waves of economic speculation (based on beaver pelts, then minerals, agricultural lands, timber and energy) brought growth to previously undeveloped regions. Similarly, economic decline was associated with the loss of mines and timber mills. With this history, it is understandable that residents of towns with names like Leadville, Golden, Silverton, Silver City and Marble often equate extraction with economic security, and view wilderness as a barrier to growth.

However, this is not an accurate picture of contemporary economic reality. A number of researchers have demonstrated that income generated by the export of raw materials is no longer the foundation for economic security in the region (Power 1991, Rasker 1993, Rudzitis 1993, Freudenburg and Grambling 1994, Lorah 1996). One typical study, for

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example, quantified the declining economic importance of extractive industries in rural counties of Colorado, Idaho, Montana and Wyoming from 1969 to 1993. During this period, 97% of the new jobs in this region were created in nonextractive sectors. Similarly, 92% of the growth in income during the study period occurred in non-extractive sectors (Lorah 1996).

Despite the fact that virtually all of the region's extractive industries are in decline (Gulliford 1989), the economies and populations of some rural counties in the West are experiencing rapid economic growth. This apparent contradiction indicates that a fundamental change in the nature of the region's economy has taken place. The environment still supports local economies, not as a "warehouse of raw materials," but as a magnet attracting amenity-seeking tourists, migrants, and small business owners. In places where this transition has occurred, local economies have navigated from dependency on a few natural-resource industries to a modern, diversified, service-oriented economy. An increasing number of researchers (including the 34 endorsing Power 1995) feel that the West's economic future lies not in extractive industries, but in industries that benefit from the presence of environmental amenities such as wilderness.

If this is the case, the jobs versus the environment argument that wilderness harms local economies is wrong. *Instead, counties with relatively high percentages of land devoted to wilderness should have relatively high rates of income growth, employment growth, and population growth.*

Study Area

This hypothesis was tested in a study area consisting of 113 rural (no places with populations of 2,500 or more) Western counties. Because the hypothesis focused on the relationship between local economies and wilderness, metropolitan and urban counties were excluded. This exclusion was based on the fact that the primary economic sectors of urban counties are negligible, and their economic performance is largely decoupled from the nature and quality of their immediate natural resource base (Hardy and Ross 1990). Since even the economies of rural counties can be heavily influenced by nearby urban areas (Butler 1990), rural counties were divided into two groups: *rural adjacent counties* (counties that are physically adjacent to at least one Metropolitan Statistical Area with more than two percent of the employed labor force commutes to jobs in metro counties) and *rural non-adjacent counties* which were both rural and relatively distant from metropolitan areas. The Western U.S. was chosen because it contains relatively high percentage of land devoted to wilderness. Counties were chosen as the unit of analysis, since they are the smallest unit at which detailed demographic and economic information is systematically enumerated and made available. The study area appears in figure 1.

Data

Data on the location and extent of federal lands were obtained from the Federal and Indian Lands Map Layer of the U.S. Geologic Survey's National Atlas of the United

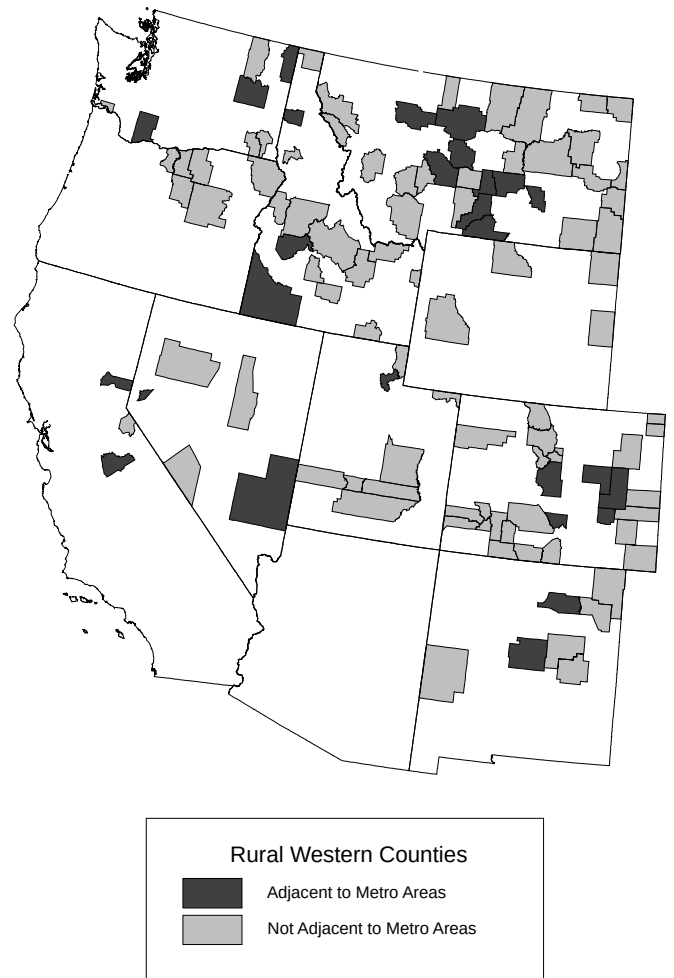


Figure 1—Study area: rural counties in the 11 Western United States.

States (1997), and figure 2 is a map of high amenity federal lands, including wilderness areas. Data on employment, income and population were obtained from the Department of Commerce's Regional Economic Information System CD-ROM (1998). The rural-urban continuum codes for metro and nonmetro counties were acquired from the Agriculture and Rural Economy Division of the Economic Research Service (Beale 1998), and the time period under consideration 1969-1996, was the longest possible, given data availability.

Analysis

The hypothesis that counties with relatively large proportions of land in wilderness experience relatively rapid growth is easily tested. First, a Geographic Information System (GIS) was used to calculate the percentage of acreage devoted to wilderness in each rural Western county. Second, the growth rates of employment, total income, per capita income and total population were calculated for each rural Western county for the period 1969-1996. Third, once these economic development indicators and the percentage of land in wilderness were calculated for each county, this

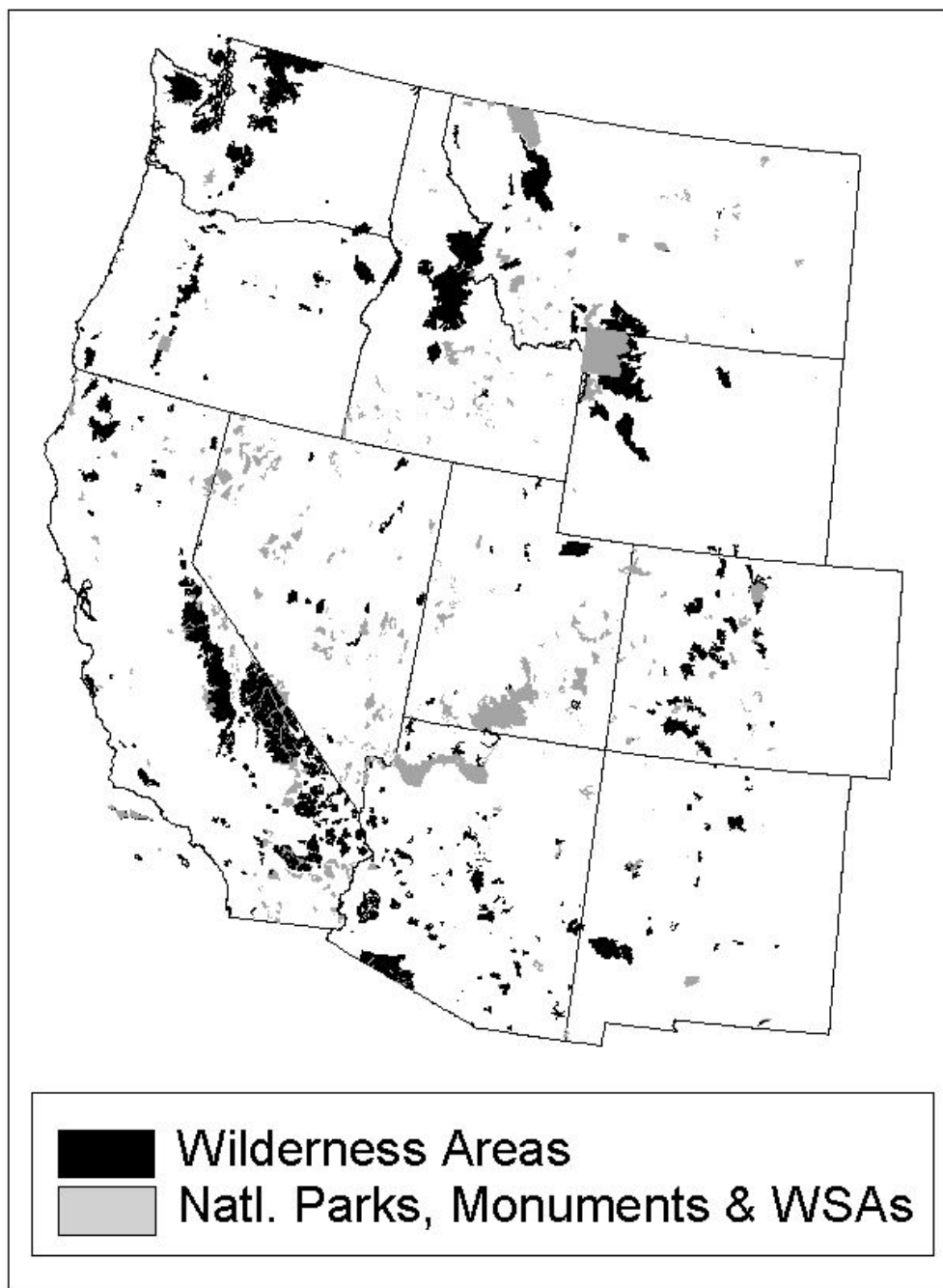


Figure 2—Wilderness, National Parks, National Monuments, and Wilderness study areas.

information was used to calculate Pearson's correlation coefficients for the relationship between the percent of land devoted to wilderness in each county and that county's population growth and economic growth. Because some rural counties in the study area are adjacent to metropolitan areas, their development paths may be affected by income generated by residents commuting to jobs outside the county. In order to focus more directly on the relationship between local environmental amenities and local economies, a second calculation was made using only rural counties that

are not adjacent to metropolitan areas. The results of both calculations appear in table 1.

These calculations indicate that the presence of wilderness does not limit economic growth. Instead, the correlation between the percentage of land devoted to wilderness and each measure of growth is positive and statistically significant. In other words, counties with higher percentages of wilderness have faster total income, employment, per capita income and population growth rates than counties without wilderness. These results indicate that the jobs verses the

Table 1—The correspondence between the percent of land devoted to wilderness and economic development indicators in rural Western counties.

	Employment growth 1969-1996	Per Capita income growth 1969-1996	Total income growth 1969-1996	Population growth 1969-1996
All rural counties (N = 113)	382*	0.253*	0.341*	0.337*
Rural counties not adjacent to metro areas (N = 83)	0.443*	0.289*	0.406*	0.453*

*P = 0.001.

environment argument is seriously flawed: protecting land as wilderness does not seem to limit the growth of local economies in the rural West. Similarly, despite the fact that relatively isolated economies are thought to rely more on local natural resources (Deavers and Brown 1985, Freudenburg and Grambling 1994) the relationship between wilderness and growth is strongest in rural counties that are not adjacent to metropolitan areas.

Wilderness areas are only one source of environmental amenities in the West. Because it seems likely that a broad range of environmental amenities promote economic security, a second set of calculations was undertaken. These calculations were based not only on wilderness, but also on national parks, wilderness study areas and national monuments. The results appear in table 2. As expected, when the definition of environmental amenities was expanded to include wilderness, national parks, wilderness study areas and national monuments, the correlation between environmental amenities and measures of growth was even stronger. Additionally, the correlation between amenities and growth was again significant and stronger in the most isolated rural counties that were not adjacent to metropolitan areas.

This analysis shows that the presence of wilderness is *associated* with population growth and with economic growth. It does not prove that wilderness *causes* growth. Perhaps limited access to natural resources in wilderness counties hinders the development of less competitive, cyclical, single-sector extractive economies. Either way, informed commentators may find it difficult to claim that the presence of wilderness limits long-term economic growth.

Wilderness and the Transformation of Rural Economies

The role logging, mining and agriculture play in supporting rural economies is declining. At the same time, counties rich in environmental amenities are growing relatively rapidly. Taken together, this suggests that environmental amenities act as a catalyst in the transition from stagnating extractive industries to relatively diversified amenity economies that attract tourists, retirees and small business owners. If this is the case, the presence of wilderness should influence when and where local economies shift from a reliance on extraction to a reliance on amenities. In other words, *the location of wilderness should coincide with the location of the first counties to make the transition from extractive economies to amenity economies.*

In order to test this hypothesis, it is necessary to classify the counties in the study area as having either extractive economies or amenity economies. Rasker (1992) points out that as the traditional resource-dependent, extractive economies of the rural West become increasingly diversified and service oriented, new forms of economic dependency appear. Increasingly, one of the largest sources of income is nonlabor income, which consists of government transfer payments and dividends, interest and rent (DIRE). In fact, in some rural counties, the amount of income from DIRE alone has grown larger than the income created by all of the jobs in extractive industries combined.

Figure 3 shows the transition from extraction to DIRE in Ouray, Colorado. It shows that extractive income declined

Table 2—The correspondence between the percent of land devoted to environmental amenities (wilderness, national parks, national monuments, and wilderness study areas) and economic development indicators in rural Western counties.

	Employment growth 1969-1996	Per capita income growth 1969-1996	Total income growth 1969-1996	Population growth 1969-1996
All rural counties (N = 113)	0.429*	0.372*	0.305*	0.361*
Rural counties not adjacent to metro areas (N = 83)	0.520*	0.378*	0.458*	0.497*

*P = 0.001.

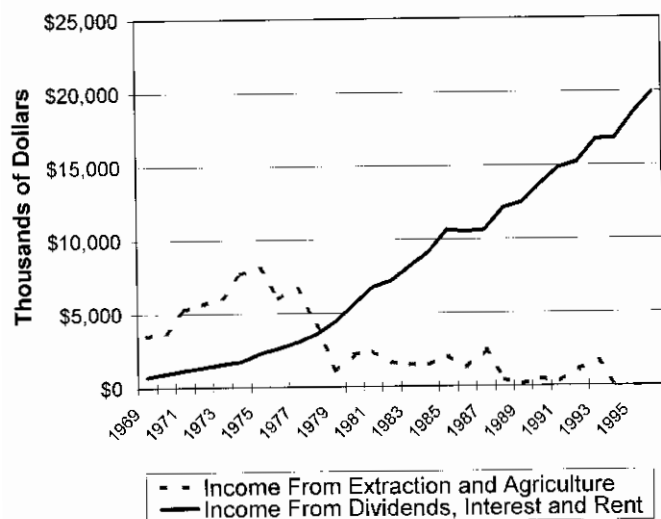


Figure 3—The transition from extraction to unearned income in 1978 in Ouray, Colorado.

dramatically between 1969 and 1996, and was eclipsed by the relatively rapid growth of DIRE in 1978. When these two lines cross in 1978, the economy can no longer be said to be an extractive economy. This is an important change. Jobs in extractive industries were long thought to be the foundation of rural economies. They shaped the region's self-image as a place of honest, physical labor, where miners, loggers and ranchers produced vast quantities of minerals, energy, timber and beef. Yet in Ouray County after 1978, all of these jobs together contributed less to local income than money earned by passively collecting interest from bank accounts, dividends from investments, checks from renters and royalties from patents. Consequently, when income from DIRE eclipses income from extraction, the local resource base no longer supports local economies through extraction, and a fundamental shift in the structure of the economy has taken place.

Counties in the study area were classified as either amenity economies or extractive economies on the basis of whether or not income from DIRE surpassed income from extraction. Next, the transition dates were calculated for all amenity economies. (In some counties, the relative importance of DIRE and extraction shifted several times. When this happened, the most recent date at which DIRE grew larger than extraction was used as the transition date). The results of these calculations show that counties in the study region fall into three groups. The first is a core group of counties that were already amenity economies in 1969, the second group became amenity economies during the study period, and the third group remained dependent on extraction in 1996.

With this information, it was possible to map the diffusion of amenity economies in Western counties (figure 4). This map shows an expanding frontier of amenity economies in rural counties. The frontier spreads from several core areas containing counties that made the transition to amenity economies prior to 1969. This diffusion is spatially uneven, however, as pockets of extraction persist and amenity economies experience less resistance elsewhere and spread beyond and around them.

If wilderness is a catalyst in the shift from extraction to amenities, the uneven diffusion of amenity economies is to be expected. This is because wilderness is also unevenly distributed throughout the study area. Consequently, the location of wilderness should coincide with the locations of counties that make the transition from extraction to amenity economies relatively early. This turns out to be the case. Table 3 contains the correlation coefficients for the relationship between the percent of land devoted to wilderness and the time of transition from extraction to amenities. Again, the calculation was made for all rural counties in the study area and for rural non-adjacent counties. In both cases, the correlation was statistically significant. The negative correlation suggests that, as expected, later transition dates are correlated with less wilderness, and earlier transitions are correlated with more wilderness. Again, the correlation coefficient was highest in the most isolated rural counties that were not adjacent to metropolitan areas.

When the definition of environmental amenities is again broadened to include national parks, wilderness study areas and national monuments in addition to wilderness, similar results are found (table 4). Again, the correlation was statistically significant, and the correlation coefficient for non-adjacent rural counties was higher than that of rural counties.

These results support the assertion that environmental amenities play a role in shaping the economic structure of rural counties. Where environmental amenities such as wilderness exist, local economies are more likely to have moved beyond a narrow reliance on extraction. Counties without the benefit of environmental amenities are at a competitive disadvantage in attracting tourists, immigrants, and employers. Consequently, they may suffer from an inability to achieve long-term growth as a result of their continued reliance on relatively stagnant extractive industries.

Other research also found that the economic structure of wilderness counties differs from that of non-wilderness counties. In a study of nonmetropolitan counties in Colorado, Idaho, Montana and Wyoming, the development paths of wilderness and non-wilderness counties during the period 1969–1993 were contrasted (Lorah 1996). Total employment in wilderness counties grew 65 percent faster than total employment in non-wilderness counties. When employment growth was disaggregated into individual sectors, the biggest differences between growth rates in wilderness and non-wilderness counties appear in those sectors benefiting from a shift to an amenity economy. Employment in wilderness counties grew faster in construction (151 percent faster), services (129 percent), finance, insurance, real estate (115 percent) and trade (93 percent). In fact, employment growth lagged only in primary sectors. In non-wilderness counties, mining and manufacturing were relatively important components of employment growth, while the number of farming jobs actually declined.

The decline of extractive industries in the rural West is offset by economic growth in wilderness counties. In addition to experiencing relatively rapid growth, wilderness counties also have relatively diversified economies that are no longer dominated by environmentally damaging extractive activities. Wilderness counties appear to be in a win-win situation, where environmental protection and economic security are mutually dependent. Still, the shift to an amenity economy has created both new challenges and new opportunities.

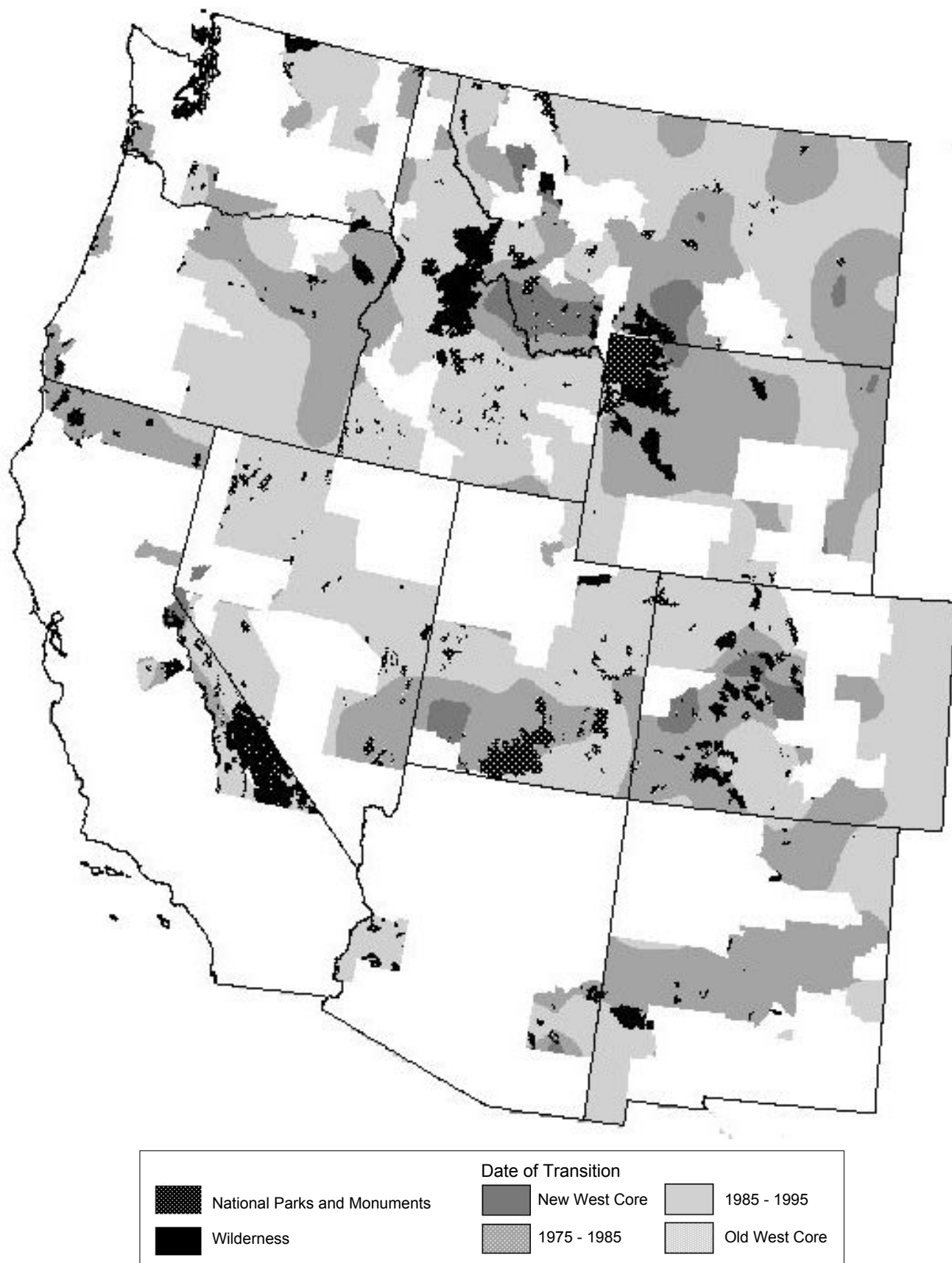


Figure 4—The spatial diffusion of the economy of the New West. The transition from the Old West to the New West occurs when the amount of unearned income (dividends, interest, and rent) grows larger than the amount of income generated by extraction and agriculture.

One of the most pressing challenges wilderness counties face involves finding ways to effectively deal with the rapid pace of growth and cultural change. Because wilderness counties are growing relatively rapidly, and because they were among the first to switch from extraction to amenities, their development paths may hold cautionary lessons for other Western counties.

Growing Pains in the New West

The rural West is currently in the throes of profound cultural change. In many high-amenity counties, economic and demographic changes are undermining local traditions to such an extent that many rural Westerners, especially those still involved in extraction, feel increasingly disenfranchised and powerless in their own communities. Many cattle ranches, for example, are hemmed in by the growth of subdivisions. In some cases, ranchers need police escorts for their cattle drives. "People are so impatient" one rancher said. "They start to honk their horns and gun their engines. They think 'I'm late for my appointment' and charge right through. (Newcomers) don't know how to handle a herd of cattle" (Foster 1996). Even police protection will not save traditional rural lifestyles. Springs on the Crandalls' ranch have gone dry as subdivisions appropriate more and more water. Homeowners also clog irrigation ditches with grass clippings, all-terrain vehicles spook cattle, elk hunters cut

barb-wire fences, hikers leave gates open, and water tanks are shot through with bullet holes (Foster 1996).

Even Westerners not directly involved in extractive industries feel threatened by the upheavals caused by rapid development. Rico, Colorado (population 150), is the "last undeveloped town in the San Juan Mountains" (Verhovek 1995). This situation is likely to change, however. An investment group represented by a high-powered Manhattan tax shelter lawyer recently bought roughly three-quarters of the town and announced plans to sell subdivided lots, redesign the main street and encourage the growth of hotels, boutiques, and a mining museum, all in an attempt to create a "colony of urban refugees (and) telecommuters" (Verhovek 1995). Locals, refusing to see their town as a mere investment opportunity, appointed a 28-year-old candle maker and former squatter as the chairman of the town's planning council. Although he favors a moratorium on new construction, he concedes that some houses may be built—as long as they have composting toilets (Verhovek 1995).

Although many Western traditions survive where primary economies remain dominant, in counties where the shift from extraction to services has taken place, ski racks now outnumber gun racks, cowboy coffee has given way to latte, realtors outnumber ranchers, carbon framed mountain bikes are crowding pack horses off of back-country trails, and long time locals complain that their towns are becoming mere islands in the "lycra archipelago" (Rasker and Glick 1994).

Table 3—The correspondence between the percent of land devoted to wilderness and the date of transition from extractive economies to amenity economies in rural Western counties.

	Transition date
All rural counties (N = 113)	−0.348*
Rural counties not adjacent to metro areas (N = 83)	−0.421*

*P = 0.001.

Table 4—The correspondence between the percent of land devoted to environmental amenities (wilderness, national parks, national monuments and wilderness study areas) and the date of transition from extractive economies to amenity economies in rural Western counties.

	Transition date
All rural counties (N = 113)	−0.347*
Rural counties not adjacent to metro areas (N = 83)	−0.426*

*P = 0.001.

Amenity Economies and Environmental Change: "The Second Conquest"

As rural Western economies increasingly rely on income generated by tourists, retirees, and footloose entrepreneurs the short-term success of amenity economies may lead to long-term environmental problems. Rapid development in wilderness counties promotes new forms of environmental degradation. Although the scars of deforestation, strip mining and overgrazing remain in many regions, the environment can recover from many extractive activities, given time. For example, photos of Aspen, taken during the gold boom in the late 1800s, reveal a denuded landscape. Most of the valley's trees were cut for fuel and construction, and the hillsides were strewn with mine tailings. Nearly a century later, Aspen's environment has recovered to the point that it attracts visitors from around the world. The environmental degradation associated with the amenity boom in wilderness counties, however, takes a different form, and the Western environment may prove to be more vulnerable to subdivision, construction and paving than to extractive activities in the long run (Gersh, 1996).

The New West and the Potential for Sustainable Development

As the economies of many rural Western counties increase their reliance on amenity-dependent activities, the role exporting raw materials plays in promoting economic security should continue to decline. The prevalence of fax

machines, modems, regional airlines and the Internet, in combination with improvements in the transportation networks and an increasing acceptance of telecommuting, are rapidly eliminating many of the barriers to the growth of high-quality quaternary jobs in the rural West. Because of declining friction of distance, amenity-rich counties in the West need no longer serve as a resource colony (Kittredge 1996).

This does not necessarily mean that extractive activities will always be inappropriate if they are managed in a sustainable manner and if they do not cause degradation that endangers amenity-dependent sectors. Part of the lure of some destination resorts (i.e., Steamboat, Colorado, and Jackson, Wyoming) is that they are marketed as links to the Old West—places where ranchers, cowhands and miners might still be found. For the less competitive non-wilderness counties unwilling or unable to make the transition from extraction, efforts to promote economic security should focus on ensuring that potentially renewable resources are harvested sustainably, on encouraging economic diversification to buffer the effects of boom and bust cycles and the depletion of nonrenewables, and on promoting the growth of value-added activities.

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