Annotated Bibliography:
Studies on the Economic Value and the Shifting Economic Contributions of Public Lands that have Appeared in the Peer-Reviewed Academic Literature

Updated Winter 2018

Some of the 48 studies below explore whether there is evidence of a relationship between the presence of public lands, and sometimes protected public lands specifically, and economic performance. Others touch on the economic contribution of public lands, but in the context of a larger phenomenon in rural development, such as “amenity migration” and demographic shifts like the retiring Baby Boomers.

Surveyed rural owners of producer service firms (information technology, for example) and found that more than two-thirds of these export-oriented businesses cite quality of life factors as the most important reason for their business location. Forty-four percent of the locally focused business owners also cite quality of life as the main decision factor for not leaving. Almost none of the firms based their location decision on costs (low taxes, low labor costs and low cost of living).

In a study of growth in the mountainous states of the rural West, Booth found that two forces are at work in determining growth: “On the one hand, the beauty of the landscape and other amenities are attracting population and income. On the other hand, access to regional metropolitan centers continues to be an important element in locational decisions. The net result is that counties outside the commuting range of these metropolitan centers, but with close access and good interstate connections have greater population densities and more growth in densities than less accessible counties.” (page 400). In other words, access to larger cities and population center is also important (see Rasker et al, 2009).

The authors measured whether there was a positive relationship between population growth in the Rocky Mountain West and employment growth, and conclude that “the finding of positive feedback between population and employment growth, even when other determining factors are controlled for, underscores the need for quality of life to be made central to planning and economic development efforts in the Rocky Mountain West. The evidence demonstrates that jobs follow people into or within the region, so, assuming that people base their locational decisions at least in part upon places’ environmental attractiveness, its long-term economic prosperity may depend upon the preservation of natural amenities.” They suggest a need for greater participation in conservation by state and local governments in order to stimulate

The authors used the Northwest Forest Plan as a case study and found the shift from resource extraction to conservation did not in all cases lead to amenity migration and community development. The authors take issue with other studies that analyze the effects of conservation policies because most do not analyze the effects at the community scale. The authors based their findings on the perceptions of long-time residents, with information obtained via interviews. They did not interview recent “amenity migrants.”


Between 1990 and 1997, the non-metropolitan (rural) West grew three times faster than the no-metro portions of the country, with two-thirds of the growth driven from in-migration stimulated in part by the presence of natural amenities.


In this study, the authors surveyed public officials in economic development agencies and 174 business leaders that had relocated to Colorado. These “company decision makers” rated recreation/parks/open space as important quality-of-life considerations when relocating. Smaller companies rated recreation/parks/open space first among six quality-of-life considerations for possible relocations, while large companies rated cost of living/housing as most important. The results suggest that access to recreation, parks, and open space is an important consideration for companies looking to relocate.


Showed that protected natural amenities—such as pristine scenery and wildlife—help sustain property values and attract new investment.


A study of 250 non-metro counties in the Rocky Mountains found no evidence that the presence of federal Wilderness in the intermountain states was either directly or indirectly associated with growth in population or employment. With the methods employed (a disequilibrium model of population and employment growth) he found that Wilderness was neither good nor bad for growth.


The authors found that the Northwest Forest Plan, which reallocated 11 million acres of federal land from timber production to protecting old-growth forest species, led to reduced local employment growth and increased net migration. They found that “The total negative effect on employment was offset only slightly by positive migration-driven effects.”
The authors argue that telecommunications technology has allowed businesses to operate far from urban centers and that the fastest growth in the country is in non-metropolitan areas.

This study is a comprehensive literature review on the economic role of amenities and implications for public lands. “Literature reviewed includes migration and demographic studies; urban and regional economic studies of amenities in labor markets, retirement migration, and firm location decisions; nonmarket valuation studies using hedonic price analysis of amenity resource values; land use change studies; and studies of the economic development influence of forest preservation. A synthesis of the literature finds that the influence of amenities is consistently shown to be a positive factor contributing to population growth in urban and rural areas characterized by proximity to public forest lands.”

This article is a review of “amenity migration,” which is the movement of people who are drawn to natural and/or cultural amenities. The author illustrate the social and economic implications of this phenomenon. For example, they state: “Extractive and manufacturing activities that have traditionally anchored western economies are now dwarfed in importance by service-sector and high tech industries, and the region’s scenic landscapes are increasingly valued more for the aesthetic and recreational amenities they provide than for their stocks of precious metals, timber, or forage.”

This study explored whether factors associated with economic growth during the 1990s and early 2000s (such as the presence of natural amenities and the growth of non-labor income) influenced economic performance during the Great Recession. The authors found that counties in the West that fared better during the recession had a relatively higher percentage of the adult population with a college degree and where there were relatively more government jobs. The study failed to find effects, either positive or negative, on such factors that were important before the recession, such as growth in nonlabor income, access to markets via air travel, and the presence of natural amenities (measured as percent of county land that are protected public lands). The authors concluded that “In today’s economy, the quality of human resources is strongly linked to resilience during economic downturns. An educated workforce provides economic stability.”

Workers in occupations that are flexible in where they can live, in law, finance, insurance, real estate, business, health, and engineering, for example, are attracted to the West in large part because of its amenities. The downside of amenity-influenced migration is urban sprawl. For example, the authors found that from 1970 to 1999, the Greater Yellowstone area experienced a 58 percent increase in population and a 350 percent increase in the area of rural lands supporting exurban-housing densities.

Amenities have driven much of the growth in the “New West,” but this has resulted in land use changes that threaten biodiversity.


The authors found a significant positive correlation between the percent of congressionally designated Wilderness land in a county and growth in population, income, and employment from 1970 to 2000. They discovered that: “Wilderness counties generate far more growth in lower paying industries like hotels and other lodging places and eating and drinking establishments, but they also have remarkable growth in higher paying professional services like legal services and investment offices relative to non-Wilderness counties in the rural West.”


This paper provides a detailed explanation of the terms and analytical approaches to wilderness economics research and the economic value of natural amenities and commodities in protected areas. The authors point out that more than 30 studies have estimated the economic benefits of wilderness and “scrutiny of these studies demonstrated that the willingness to pay for a wilderness trip has not declined over time and has probably increased.” In addition, the authors conclude that “Our economic synthesis also suggests that wilderness areas stimulate economic impacts within local and regional communities. Although the contribution of wilderness to economic growth in wilderness gateway communities is probably smaller than that for other outdoor activities (such as motorized recreation), the amenity value of wilderness appears to be attracting migrants to residential communities located near wilderness areas.”


The authors investigated the relative importance of economic, social, cultural, and environmental factors in people's decision to locate or retain a business in the northern portion of the Greater Yellowstone area. The study revealed that the most important reasons for people's decision to locate or retain a business in the area had to do with the scenic amenities, the rural character of the town, the low crime rate, proximity to wildlife-based recreation, and other social, cultural, and environmental factors.


Using data about property values from forestland near Corvallis, OR, this study finds that property values increase in proportion to how close the property is to protected forest land. The authors found that forest attributes also affect property value. For example, visible clear-cut sites tend to decrease property values.


“Jobs may follow people, if household migration decisions are increasingly influenced by demands for location-specific amenities ….” (See article by Whitelaw on the theory that jobs follow people). From a review of the literature, the authors find that: “First, employment growth appears to be caused
largely by population growth rather than conversely. Second, certain demand-side variables (tax breaks and industrial development bonds) fail to significantly spur growth while supply variables such as education expenditures and climate variables are found to significantly influence county growth.” The authors conclude: “Thus, the research effort advocated in this paper focuses upon location-specific amenities as a critical factor in determining regional futures.”


The authors quantified the effects on wage growth of management practices applied on public lands in the Northern Forest region of the United States. “It was found that wage growth rates are not significantly affected by the shares of land under either management regime [“preservationist” versus “extractive”]. As well, recent declines in national forest timber sales are found to have no effect on wage growth.”


Discovered that public land conservation is associated with more robust population growth but not employment growth: “We find that net migration rates were higher in counties with more conservation lands, but the effects are relatively small. No significant effect on employment growth is detected.”


The authors point out that opponents of roadless areas, National Monuments, National Parks, and Wilderness claim that preserving public lands is detrimental to the economy. The researchers tested whether this is true by analyzing the relationship between the presence of protected lands and the performance of the local counties’ economies. Their findings show that the population, employment, and income growth rates, from 1969 to 1999, were much higher for the non-metro counties with protected lands than those without protected lands. They also found that in the non-metropolitan portions of the West, the highest level of environmental protection on public lands is associated with the highest levels of growth.


Conserving lands, while also creating a new visibility for them through protective designations, helps safeguard and highlight the amenities that attract people and business. When population growth rates of U.S. counties were compared, the highest growth occurred in counties with amenities, which included climate, topography, and water area.


Based on interviews with employers in two high amenity nonmetropolitan communities (Rabun County, Georgia and Routt County, Colorado), the authors found that spending of baby boomers has stimulated expansion in construction, property management, household services, and restaurants. They also discovered that this corresponds with a growing supply of undocumented immigrants, who provide employers with a flexible workforce.


Rasker, R., P.H. Gude, J.A. Gude, J. van den Noort. 2009. “The Economic Importance of Air Travel in High-Amenity Rural Areas.” *Journal of Rural Studies.* 25: 343-353. The vast distances between towns and cities in the American West can be a detriment to business, yet they also serve to attract technology and knowledge-based workers seeking to live in a picturesque setting. Yet, in spite of the increasing importance of amenities to migration and business location, also needed is access to markets, particularly via commercial air service.


Rasker, R. 2005. “Wilderness for Its Own Sake or as Economic Asset?” *J of Land, Resources, Environmental Law.* 25(1): 15-20. “In a perfect world, Wilderness proposals would be supported simply for the goodness of the idea that in this highly industrialized world of ours, some places should be set aside and untrammeled by human beings. But since rural poverty exists, and because people have immediate needs, Wilderness proposals in the future will stand a higher chance of success if they make economic sense. Mixing economic development and preservation is not where we Wilderness advocates thought we would find ourselves forty years ago. Passing Wilderness legislation these days is very hard work because it also needs to pass the test of being economically beneficial. This combination makes for a much more complicated intellectual challenge, but in the end it is a much more satisfying solution.”

Rasker R. and A. Hansen. 2000. “Natural Amenities and Population Growth in the Greater Yellowstone Region.” *Human Ecology Review.* 7(2): 30-40. “Much of the recent growth in population, jobs and income in the Greater Yellowstone Region, as well as other parts of the rural West, has been driven by ecological and social amenities, in contrast to the historical dependence on resource extractive industries and agriculture.” The results of statistical analysis of county-level growth metrics indicate that ecological and amenity variables are necessary conditions for growth, but they are not sufficient. An educated workforce and access to larger markets via air travel are also important.

Rasker, R. and A. Hackman. 1996. “Economic Development and the Conservation of Large Carnivores.” *Conservation Biology.* 10(4): 991-1002. The conservation of carnivores such as grizzly bears requires the protection of large expanses of open space. Employment and income trends were analyzed in northwestern Montana comparing counties with a high degree of protected public lands versus those without: employment and income in Wilderness counties grew faster, and showed higher degrees of economic diversification and lower unemployment when compared to “resource extraction” dependent counties.

In today’s economy, the “multiple use” mandate of federal public lands has less relevance when the fastest growing regions of the West are closely tied to “no use” designation that favor the protection of wildland and wildlife habitat.


Demonstrate that the protection of large portions of public lands in the Greater Yellowstone ecosystem have contributed to economic growth, and more so than areas that are highly dependent on resource extraction.


“In the greater Yellowstone area, there is a perceived controversy between conservation efforts and economic well-being. This controversy is fueled by misconceptions about the economy and the role played by public lands in the region.” In this article, three commonly held myths are addressed by describing changes that have taken place in the economy, and, in view of these, Rasker concludes that economic well-being can be compatible with ecological protection, particularly if an unspoiled natural landscape is the critical element stimulating economic activity.


The authors point out that “since the 1970s, the Rocky Mountains has experienced rapid net immigration and population growth, largely a result of innovations in communication and transportation technology which led to less of a need for individuals to be rooted to a certain place, and allowed people to migrate to counties with environmental amenities” They also illustrate that the Great Plains, lacking the natural beauty and recreational opportunities of the Rocky Mountain region, have suffered from outmigration and population loss.


“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.” The authors investigated counties classified by the Economic Research Service as “recreation counties.” Thirty eight percent of the recreation counties were also classified as “federal land counties,” where at least 30 percent of the land is managed by the federal government.


The authors point out that federal lands provide amenities that attract people and business, and that the use of economic base and input-output modeling has limited application in understanding this phenomenon. They conclude that “we must recognize that places and their social and physical environments are critical in understanding why people and firms migrate and regions develop. The
rapid growth of areas around federally designated wilderness reveals a preference for development that maintains or improves the quality of life by fitting harmoniously into the natural and social environment. It also reveals a search by people for the “good” life.”


In the three articles listed above, Rudzitis and Johansen demonstrated that Wilderness counties grew faster than non-Wilderness counties and Wilderness was an important motivator for local residents. During the 1960s, counties containing federally designated Wilderness areas had population increases three times greater than other non-metropolitan counties. In the 1970s, they grew at a rate twice that of non-metropolitan areas, and in the 1980s, their population increased 24 percent – six times more than the national average of four percent for non-metropolitan areas and almost twice as much as counties in the rural West. To test the importance of amenities in people's decisions to migrate, the authors surveyed more than 11,000 randomly selected migrants and residents in 15 Wilderness counties in the West. Sixty percent said the presence of designated Wilderness was an important reason for why they moved, 45 percent said that Wilderness was why they stayed in the area, and 81 percent felt Wilderness areas were important to their counties. The most significant reasons for locating to a Wilderness county were the environmental and physical amenities, the scenery, outdoor recreation, and the pace of life. When asked about their attitudes toward development, 90 percent of recent migrants and 85 percent of established residents felt it was necessary to "keep the environment in its natural state."


The authors found that the greatest number of new migrants to the West is in counties characterized by their recreational nature, scenic amenities, proximity to national parks or other federal lands, and preponderance of service-based economies. They conclude that in these so-called New West counties, the importance of mineral, cattle, and lumber production is dwarfed by an economy that is now based on “a new paradigm of the amenity region, which creates increased demands for amenity space, residential and recreational property, second homes, and environmental protection.” (page 501).


Find that quality of life factors (environmental, recreational and social amenities) are important in businesses owner’s decision to locate in the northern portion of the Greater Yellowstone region. Also, find that the majority of business owners came to the Greater Yellowstone area first as tourists.


Migrants to Montana, bifurcated into two groups—returning and new migrants, moved to Montana for largely similar reasons. These groups were also similar across education, age, and income. Those in higher income categories in both groups were significantly more likely to move for “employment reasons” and less likely to move for “family reasons” than low-income people in both groups. Moreover, migration because of lifestyle, environmental quality, or urban amenities, varied
consistently with age. 30-65-year-old migrants to Montana did so for “employment reasons,” while migrants 65+ were more likely than migrants under 30 to move for “family reasons.” Moreover, migrants 45-64 were more likely to list “environmental quality and rural character” as a significant reason for relocating.

The authors state that with effective management, protected lands provide financial benefits for society that exceed the financial support they receive from government agencies. They argue that for protected areas to fulfill their potential, they need increased recognition, funding, planning, and enforcement.

Whitelaw suggests that the theory of economic development has shifted, from “jobs first, then migration,” to “migration first, then jobs.” In other words, people initially decide where they want to live, and this decision is influenced by amenities, including those provided by public lands.

In the last 30 years, rural counties in the Inter-Mountain West relied less on traditional industries like ranching, forestry, and mining, and instead, have developed new economics centered around natural and cultural amenities, tourism, and recreation. Some who study this phenomenon have used the term the “New West” to describe this transformation. This study found that “New West” economies have not developed uniformly in the region. Where “New West” as opposed to “Old West” economies do exist, there are often changes in employment, increases in better-educated recent migrants, seasonal migrants, tourists, and changes in real estate patterns and higher housing values. This study uses spatial and statistical analysis to plot out where “New West” and “Old West” communities are located, and found that “New West” type communities are near the Rocky and Wasatch Mountains, and near burgeoning mountain cities like Salt Lake City, Utah, and Jackson Hole, Wyoming.

Contact:
Ray Rasker, Ph.D. Executive Director, ray@headwaterseconomics.org, 406-570-7044.

Related Resources:
A summary of regional reports, case studies, tools, a library of additional research, and related news articles on the value of western protected public lands is available here: https://headwaterseconomics.org/public-lands/public-lands-research/.