

Thinking outside the lines:

Parks and the quality of life in area communities

By JONATHAN G. TAYLOR, NINA BURKARDT, LYNN CAUGHLAN, AND BERTON LEE LAMB

Many national parks, national forests, and other public land units exist in highly changeable regional environments. Often the parks and forests themselves serve as important catalysts of change in the levels of tourism, outdoor recreation participation, and contribution of traveling publics to local and regional economies. Resource managers are called upon to protect lands in their jurisdictions while juggling a variety of inputs and expectations. In each agency, resource decisions are bound by law and agency policy. In this context, the decision space of the national park manager is quite different from that of those in the multiple-use land management agencies. Management actions must stand up, not only to law and policy and to scientific scrutiny, but they must also be sensitive to the needs of residents in surrounding communities, to county and state governing bodies, and to visitors from across the nation and around the world. Balancing these needs while protecting resources is an ongoing challenge made more difficult as the mix of stakeholders grows.

Increasing tourism adds to the challenge. As new players emerge and existing players become more intensely involved—complicating communication networks and altering balances of power—the workload of management agencies increases markedly. For example, explosive growth in tourism has led to rapid population growth and economic change in southeast Utah. Recreational activities are often in conflict with traditional uses such as grazing and mining. Impacts from all these land uses contribute to deterioration of the region's sensitive natural resources, and potentially diminish residents' quality of life, especially in areas where such uses are concentrated.

Understanding how "what I do on my patch" affects interdependent interests requires an intensive, focused effort to discover what is at stake, and how internal decisions influence those surrounding factors. Managers need to know, first, how actions interrelate with other institutional jurisdictions and authorities; second, what local values really are (what is held dear by

the area resident population); and third, how rapid changes in tourism and outdoor recreation affect the economy of surrounding populations, and how land and resource management decisions affect those changes.

Institutional analysis, public preference measures, knowledge and value assessment, and economic effects modeling can provide valuable insights into interactions between human communities and national lands and resources. A five county area of southeast Utah: Carbon, Emery, Wayne, Grand, and San Juan Counties; was one of two Colorado Plateau areas selected for coordinated social science investigations from 1996 to 1998.

Institutional Atlas

Analysis of participating institutions, their structures and authorities, helps land managers answer the question: "What are the institutional opportunities and obstacles for local, state, and federal agencies to manage for sustainable ecosystems and commerce?" This question is important because land management on an ecosystem scale implies—in fact, requires—coordination among land managers, property owners, and other stakeholders. When agencies and institutions with differing goals and processes work together, the results can be disappointing, especially if there is a lack of understanding about the involved players, their goals, and how they are likely to go about achieving their goals. Our hypothesis in beginning this research project was that overlapping jurisdictions and mandates for recreation management are associated with reduced ability of local, state, and federal land managers to implement these policies. The tool we used to analyze this problem is the Institutional Atlas.

We created an institutional atlas of the Colorado Plateau using ArcView GIS (geographic information system) software. The atlas shows county boundaries, cities, land ownership, hydrology, and other standard map features. In addition, the atlas displays map layers depicting parties with a role in recreation management decision processes, although many of these parties do not actually own or manage land. The sheer size of their land jurisdictions in southeast Utah lend government land management deci-

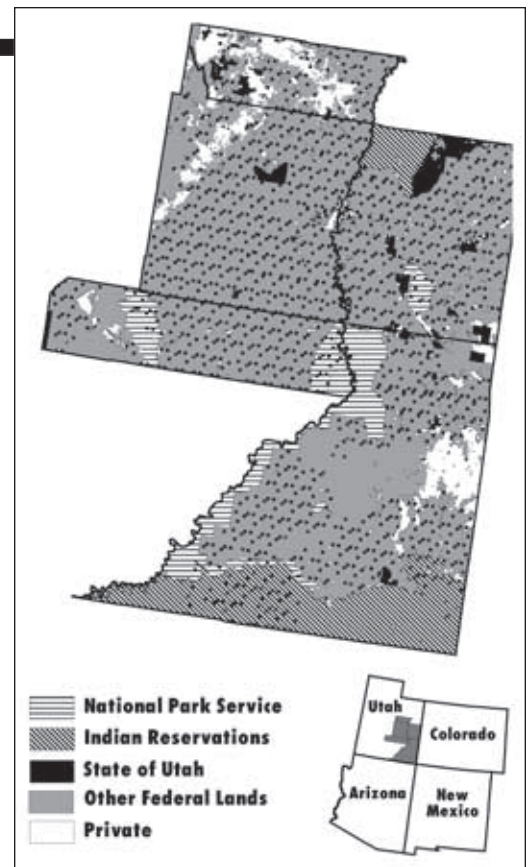


Figure 1. Map of land ownership in southeast Utah.

sions great weight in the region. Federal agencies manage nearly 70% of the total land area (Bureau of Land Management more than half), the State of Utah manages 10%, and an additional 12% is in Indian reservations (figure 1). Private deeded lands make up only 9.5% of the land surface area. Therefore, every local federal agency decision—especially those of the Bureau of Land Management (BLM), National Park Service (NPS), or U.S. Fish and Wildlife Service (USFWS)—has enormous influence on area economies and ecosystems.

In the southeast Utah subregion, the National Park Service alone is quite complex: it has three national parks (Arches in Grand County, Capitol Reef in Wayne County, and Canyonlands in San Juan and Wayne Counties); the Glen Canyon National Recreation Area; plus three national monuments (Hovenweep, Natural Bridges, and Rainbow Bridge in San Juan County), all reporting to the same regional or cluster office in Denver, but under the jurisdiction of three superintendents.

The National Park Service is not alone in its organizational complexity. Within the five county area we studied are four BLM field offices, each reporting to the state office in Salt Lake City; two Indian reservations, dealing with two different area offices for the Bureau of Indian Affairs; and three na-



Figure 2. Community aesthetics photo.



Figure 3. Public facilities photo.



Figure 4. Landscape vista photo.

tional forests, with the Manti La Sal National Forest divided into three separated land areas. On the state level there are two regions of the Department of State Parks and Recreation reporting to the Utah Department of Natural Resources (DNR) in Salt Lake City; two regions of the Department of Forestry, Fire, and State Lands, also reporting to the DNR in Salt Lake City; and two districts of Region 4 of the Utah Department of Transportation. At the next level are five counties with their associated governance; several towns and municipalities; and approximately 32 special districts. Add to this list the Utah Travel Council, reporting to the Economic Development Appropriations Committee in the state legislature; the San Juan County Economic Development and Tourism Board; the Utah Association of Counties; and the Utah League of Cities and Towns. Still more groups become involved when issues close to their missions are under discussion.

The key is to understand who is likely to be involved in specific issues and how the mix of players is likely to affect both process and outcome. The next phase of the Atlas project will involve an analysis of the groups in southeast Utah to determine likely strategies, obstacles, and opportunities for setting and implementing recreation management policies. We anticipate that the complexity of the recreation management decision arena, coupled with the large value differences about appropriate land uses and economic development issues, will support our hypothesis that overlapping and conflicting jurisdictions hamper the development of recreation management policy. One point of conflict that we expect to be of paramount importance in this analysis is the debate about the proper level of decision-making authority and the distribution of costs and benefits among federal, state, county, and local governments.

Quality-of-life photograph elements

A critical element of the lifestyles of residents of local communities is their *quality*

of life. Just what area residents mean by that term, however, has not been readily discernable up to this point. To operationalize the meaning of quality of life, we administered a camera survey, using “resident-employed photography.” This involved giving one-time-use cameras to residents of southeast Utah, and asking them to *show us* which places and features of their communities and of the surrounding landscape were essential to their quality of life. That exercise was followed up by a short mail-back survey.¹

The majority of quality-of-life photographs (57%) were taken in the towns while 43% were taken in the surrounding countryside. Two-thirds of the respondents took pictures of community aesthetics: positive elements such as homes, subdivisions, yards and gardens (figure 2) and a few negative attributes such as junk cars and run-down property. Nearly two-thirds of the participants took photos of public buildings and facilities (figure 3), in particular schools and libraries. Open places of business, public parks and open space, cultural facilities such as museums, churches, and the people of this region were also identified as important community quality-of-life elements.

Over 60% of the participants took pictures of landscape vistas (figure 4), the most frequently photographed *positive* quality-of-life category, which includes mountains, canyons, desert, and red-rock formations. Water bodies (figure 5) were important in the landscape, and so were farms and ranches, outdoor recreation areas and activities. Nearly three-quarters of all photos were of positive elements and fewer than 20% were focused singly on negative quality-of-life elements.

Diverse values were used to describe *why* these features or places were important to quality of life. The most predominant value (150, 19% of all statements) was “anything



Figure 5. Water body photo.



Figure 6. Value: children.

to do with *children*.” (figure 6) safe for children, good schools for children, children growing up with nature, etc. The next value was “*beauty*,” nearly three-fourths describing the landscape or countryside. Values of “education and learning,” frequently related to children, were third, followed by “family”—living and recreating together, and family connections nearby and across generations.

Specific elements or locations that were selected by 10% or more of each county sample were identified as perceptually important nodes, or “PINs.” PINs include city parks, lakes and reservoirs, mountains, schools and museums, and three national parks and the national recreation area in the study area, etc. Locations of PINs are being entered into a GIS so that public land managers and county or municipal planners can identify special places that local residents want to ensure are protected, or corrected if an eyesore.

¹The responses to this experimental research technique were fairly low: 144 cameras (41%), and 87 surveys (60%).

These southeast Utah residents are quite satisfied with their communities as places to live, rating them 5.6, on average, on a 7-point satisfaction scale. In reporting "what was especially good about living in their communities," 29% cited the natural environment, 23% community character, and 23% people and neighborhood qualities. Respondents rated the "importance of the natural environment to their quality of life" very important (6.4 on a 7-point scale).

Grand and Wayne Counties, which have popular national parks, rated tourism highest in importance among the counties, 6.0 on the 7-point scale. Area residents, overall, would prefer slightly more tourism (4.5 on a 7-point scale) than present levels.

In rating *changes* that could affect their quality of life, residents wanted *increases* in traditional jobs, mining, and agricultural zoning, but also in attracting tourism, tourism jobs, parks and open space, and levels of tourism and outdoor recreation. Only "the amount of wilderness area in southeastern Utah" was rated as needing to *decrease* to improve quality of life, especially by Emery and San Juan county residents.

Older residents (over 65) were more likely than young to middle-age adults to complete the photo exercise and survey, suggesting that retired persons participated more than others in the quality-of-life study. Some 35% of the follow-up survey respondents reported being retired, and their average length of residence was 35 years. This research produced 1,550 photographs, showing both community and landscape elements that need protection or correction to keep and enhance quality of life for local residents of southeast Utah.

Quality of life & post-materialist values

In a survey of the general public and opinion leaders on the Colorado Plateau, conducted during the summer of 1998², we evaluated (1) the effect of several recreation management scenarios on quality of life and (2) residents' feeling of post-materialism. Post-materialism is defined as the feeling that needs such as "belonging," "self expression," and "quality of life" are among the most important personal values (Inglehart

1995). Residents were selected at random in two regions: southeast Utah; and southwest Colorado/northwest New Mexico. Opinion leaders, defined in this study as persons attentive to policy issues and actively involved in community affairs, were a targeted group. They were selected because of their influence and involvement in recreation and resource management issues.

Our study of recreation and quality of life in southeast Utah showed residents to be decidedly outdoors oriented. We found that at least occasionally 69% fish, 78% camp, and 78% view wildlife or nature; fewer reported that they at least occasionally hunt (41%). When we asked questions about the affect of specific management activities we found general agreement that restrictions on use of public lands would reduce the quality of life: half (51%) of the respondents believed that their quality of life would be negatively affected by "limiting access to popular camping areas" or "closing some recreation access roads." However, only 34% believed their quality of life would be negatively affected by "designating certain areas for specific recreation uses;" 29% saw this as positive (the remainder were neutral). Opinion leaders were far less likely to link reduced quality of life with these activities. For example, although 25% of opinion leaders believed their quality of life would be negatively affected by "closing some recreation access roads," 44% believed their quality of life would be positively affected.

Once basic needs have been met, people's priorities turn to such post-materialist values as "belonging, esteem, and intellectual and esthetic satisfaction." Prominence of these values reflects a "subjective sense of security" (Inglehart 1981). More than a feeling of economic well-being, post-materialism is a long-term sense that life's basic needs have been met; people with these values emphasize self-expression, the quality of life, and protection of the environment (Inglehart 1995). Our study provides an understanding of how post-materialist values are expressed by the general public and opinion leaders. This is important to federal managers in a region noted for controversies over public land management.

We found that 24% of southeast Utah respondents expressed post-materialist values. Although this is not a majority, it contrasts with only 8% who expressed materialist values, emphasizing economic and physical security. Sixty-eight percent of the general public sample expressed

"mixed" values. This picture was quite different for opinion leaders who were markedly more post-materialist (45%) and less materialist (3%). The significance of this finding is that post-materialist values will likely lead the public toward a need for inclusion in resource decisions and a greater sense of belonging between the community and public lands.

Economic analyses

Information on how spending by tourists affects the southeast Utah regional economy is needed for defining management and policy options that can best provide economic opportunities while sustaining the region's fragile natural ecosystem. To understand the impacts of tourism on the southeast Utah economy, we constructed a detailed inter-industry model of the regional economy to track the changes in economic activity from spending by visitors, as these dollars ripple through different sectors of the economy. Economic input-output (I-O) models are commonly used to predict the total level of regional economic activity that would result from a change in spending (Jackson et al. 1992). The Impact Analysis for Planning (IMPLAN) model, developed by the U.S. Forest Service, was used to construct a regional input-output model of the southeast Utah economy (Minnesota IMPLAN 1998).

A tourist usually buys a wide range of goods and services while visiting an area. Major spending categories include lodging, food, transportation, and recreational equipment. Tourism spending generates considerable economic benefits for local businesses that provide services to them. Average daily travel-related spending estimates used in this study were created by the U.S. Forest Service from the 1991 National Survey of Hunting, Fishing, and Wildlife-Related Recreation (U.S. Department of the Interior 1991).

Approximately three million people visited the southeast Utah region in 1995 (State of Utah 1996). Estimated 1995 spending by visitors amounted to nearly \$99 million in terms of total gross output and resulted in 2,006 jobs (table 1). The services and trade sectors of the economy are the most impacted, accounting for a combined total of 76% of total output and 89% of the jobs created by visitor spending. Agriculture, mining, and construction are the least impacted, accounting for a combined total of 3% of total output and less than 2% of the jobs created by visitor spending.

²This study covered 15 counties on the Colorado Plateau. In the five-county southeast Utah part of the study there were 447 respondents and a response rate of 53.6%. There were 118 opinion leaders with a response rate of 76.1%.

A 1992 study by the Governor's Office of Planning and Budget projected that the number of visitors to Utah's national parks will grow at a long-term rate of about 3.5% per year (State of Utah 1992). At this rate, visitation to southeast Utah would increase to 4.23 million visitors per year by 2005. Projected spending by visitors in the year 2005 would account for \$139.6 million in terms of total gross output and 2,829 jobs (table 2). This increase in tourism would result in over \$40 million per year increase in total output and 823 new jobs, as compared to 1995.

Information on how changes in tourism level affects the southeast Utah economy provides one of the pieces needed for defining the optimal allocation of publicly managed resources there. This information needs to be combined with information on sensitivity of the region's natural systems to tourism levels, provided by local resource managers, to find the level of tourism that

is best for the local economy and for conserving the area's natural resources.

Implications for national parks

The results of these social science studies have important implications for the several units of the national park system in southeastern Utah. First, the decision arena in this region is extraordinarily complex, with sometimes conflicting, sometimes mutually supporting objectives among various players. Interactions in resource and land management issues occur among different levels of government; between government and the private sector, with business and active nongovernment, special interest organizations (NGOs) in the region.

Quality of life for local residents has a balanced focus between their communities and the unique red-rock, canyon country environment of the Colorado Plateau. What the people have built for themselves—their homes, neighborhoods, communities, family and human relations, and church communities—are essential and provide safe, secure environments for their children. They want their children to inherit this valuable social-cultural resource at a level of quality of life comparable to their own. The natural beauty of the region is also essential to residents' quality of life: the mountains, cliffs, canyons, lakes and rivers, the clean air, the rural character, and the close but uncrowded natural environment. Many of their "special places" are, inevitably, on national forests, parks, or other public lands. Post-materialist values are evident in a sizeable segment of the general population and seem to be held by nearly half of the opinion leaders. As residents of this area of the Colorado Plateau find sufficient financial resources to get by on, they focus on belonging to this intriguing region, the aesthetic satisfaction of it, and the quality of their communities and landscape, their quality of life.

Residents of southeast Utah welcome tourism somewhat hesitantly. They would like increases in "traditional industries," but recognize that the tourism and outdoor recreation that the region attracts are doing more for the general economy. However, many in the region see object lessons in tourism, for example, in the sudden, overwhelming popularity of Moab: "Be careful what you ask for because you just might get it." Economic input-output assessment shows that tourism has some real positive potential, although it is not, as projected, transforming for the region. A 10-year in-

crease in revenue of \$40 million per year plus 825 new jobs does not seem overwhelming to the region, but the populations of several of these counties is relatively small. Given the probability that the revenue and jobs generation would be concentrated in some locales, the effects could be significant.

Communities in southeast Utah want to see controlled growth in tourism and outdoor recreation: growth that brings visitors into town to eat, shop, and stay overnight, but not take away the local sense of community. Managers can help local governments or regional collaboratives develop strategies for stimulating steady tourist and outdoor recreation visitation growth, while avoiding the boom and bust cycles that can come with high-tech outdoor recreation or with sudden destination fads. Working "outside the lines," in partnership with regional communities and consortia, national park and other public land managers can understand the values of their neighbors; determine where they have shared values; and find ways to de-emphasize differences, while still being responsive to the laws and missions that guide them. **P₅**

References

- Inglehart, R. 1981. Post-materialism in an environment of insecurity. *American Political Science Review* 75:880-900.
- Inglehart, R. 1995. Public support of environmental protection. *PS: Political Science & Politics* 28(1): 57-71.
- Jackson, R. S., D. J. Stynes, D. B. Prost, and E. L. Siverts. 1992. Economic impact analysis as a tool in recreation program evaluation. Instruction Report R-92-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- Minnesota IMPLAN Group, Inc. 1998. IMPLAN System (1995 data). 1725 Tower Drive West, Suite 140, Stillwater, Minnesota 55082, www.implan.com.
- State of Utah, Governor's Office of Planning and Budget. 1992. Rural Utah tourism. Salt Lake City.
- State of Utah, Governor's Office of Planning and Budget. 1996. Utah labor market report. Salt Lake City.
- U.S. Department of Interior. 1991. National survey of fishing, hunting and wildlife-associated recreation, national report. U.S. Department of Interior, Fish and Wildlife Service, Washington, D.C.

Jonathan G. Taylor (jonathan_taylor@usgs.gov), Nina Burkardt, Lynne Caughlan, and Berton Lee Lamb are with the Social and Economic Analysis Section, Midcontinent Ecological Science Center, U.S. Geological Survey, Fort Collins, Colorado.

Table 1. Current output and employment for southeast Utah

Sector	Total Output (\$ Millions)	Employment (# Jobs)
Agriculture	0.338	8.98
Mining	1.385	5.74
Construction	1.208	15.10
Manufacturing	4.317	34.06
Transportation	8.751	35.80
Trade	18.005	431.63
F.I.R.E.	5.841	45.65
Services	57.293	1371.19
Government	1.829	57.86
Total	98.967	2006.02

Source: Minnesota IMPLAN, 1998 (in 1995 dollars)

Table 2. Projected output and employment for southeast Utah

Sector	Total Output (\$ Millions)	Employment (# Jobs)
Agriculture	0.476	12.7
Mining	1.953	8.1
Construction	1.704	21.3
Manufacturing	6.089	48.1
Transportation	12.344	50.5
Trade	25.398	608.9
F.I.R.E.	8.239	64.4
Services	80.818	1934.2
Government	2.580	81.6
Total	139.602	2829.7

Source: Minnesota IMPLAN, 1998 (in 1995 \$)