

A Hands-on Assignment about Public Lands and Demographic Issues in the West

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Introduction

“I want to move west after graduation!” So many of my students in parks and recreation have made this comment to me over the years, that I decided to create an activity in which students explore important issues facing the West. The western U.S. has traditionally been thought of as an area with “wide open spaces” still remaining (Hansen et al., 2002), with abundant natural amenities and recreational opportunities, such as those found on federal lands (Frentz, Farmer, Guldin, and Smith, 2004). But in recent decades, the Western Sun Belt has experienced dramatic population growth. For example, the top three counties for growth from 1995-2000 were in Arizona, Nevada, and Texas (Reynolds, 2004). Movement to the West is part of a third great migration in U.S. history in which people generally are moving from the East to the West and from the North to the South (Taylor, 2004; The Census, 2004). Western counties with federal lands grew the fastest from 1970 to 2000, and the highest growth was associated with counties housing those federal agencies that are very active in the West, namely the National Park Service (NPS), the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM) (Frentz et al., 2004).

Population growth has implications for public lands management, such as the competing demands placed on natural resources, e.g., water for power, land for agriculture, and space for community growth (Hansen et al., 2002; Johnson and Murphy, 2004). Growth brings more stakeholders, increased fragmentation of ecosystems, and forest fire risk along the developing urban-rural fringe (Frentz et al, 2004; Hansen et al., 2002). As Taylor noted, conflicts are inevitable as “land, water and recreational resources become increasingly scarce” (2004, p. 34). Many groups, (e.g., researchers, environmentalists, politicians) are interested in what will happen to the West as it continues to experience dramatic population growth (Johnson & Murphy, 2004) and corresponding economic, social, and political changes (Taylor, 2004).

To capitalize on student interest and curiosity with the West, I developed an assignment in which students analyze data on public land ownership and population growth across states. I ask students to focus their critical thinking on issues facing the Western United States in particular. This hands-on activity was designed to have students investigate how public land management and population growth relate to each other and how they interrelate with other topics we cover in a course entitled “Outdoor Recreation and Society.” As students work through the assignment, geo-

graphic patterns emerge. One that is most noticeable is how much more land is in public ownership in states in the West when compared to their counterparts in the East and Midwest. Another striking pattern is shown in population growth rates, with the Northeast and Midwest stabilizing or losing population and the West and South gaining, sometimes very dramatically (Taylor, 2004). Students are asked to think critically about the spatial and geographic patterns of these variables related to outdoor recreation issues.

A computer-based activity

The activity begins as a computer laboratory assignment that takes one class period to complete. Each student hands in their own assignment but may talk to the person at the computer next to them, e.g., they might compare notes on what they are observing. In subsequent classes, students are then asked to discuss what they remembered from the assignment as it applies to different course topics for the semester. The overarching goal for the activity is to improve students' awareness of geographic patterns with variables related to outdoor recreation. Students are challenged to organize and translate raw, numerical data into maps and graphs to show geographic trends. While doing so, they develop skills with spreadsheets and data analysis, while interpreting patterns in the data and drawing conclusions about the larger meanings and implications for modern U.S. society.

In the first section of the assignment, students analyze rates of population change by state and make graphs to illustrate the data (U.S. Bureau of the Census, 2005). They see that western states are among the highest in terms of growth (e.g., Nevada and Arizona). In the next section, they analyze public land ownership data by state, and from different federal agencies. In particular, they focus on acreage by state under the National Park Service, U.S. Forest Service, Bureau of Land Management, and land owned by Native American Tribes. The data reflect that the East and Midwest have more private ownership of land while public land agencies dominate in the West (e.g., in Oregon, Idaho, Utah, Colorado, etc.).

Students translate the data into a picture. They do this by shading in a map outline of the U.S., using their own legend, to highlight the most dramatic differences with the variables (e.g., which states gained or lost the most population, which states have the most or least public land as a percentage of land area, etc.). As they shade in their own U.S. map, geographic patterns begin to emerge. Students then finish the lab by writing a summary to interpret patterns they see, e.g., in the percent of public land versus private land ownership by state, population density and distribution, population growth rates, and general migration trends. Students write a summary of how these concepts relate to each other and to outdoor recreation opportunities across the geographic landscape of the U.S.

Learning Outcomes

There are several learning outcomes for this activity. First students develop proficiency with data analysis by working with data using Excel or other suitable software. Many students lack confidence working with statistics and spreadsheets. This activity gives them a chance to work with data that relate to what they are learning in class about federal land management agencies. As it is a hands-on assignment, it helps them feel more confident about their ability to work with large spreadsheets. They also learn how to display data in pictures and graphs, as a more effective approach to communicating trends, rather than simply reporting numbers in a table.

Second, students develop geographic awareness of how public land ownership is distributed across the U.S. and how different states are experiencing population growth or decline. They see that the West has the most public land in relation to total land area, but also that western states are experiencing dramatic population growth compared to other regions. They realize that many other people are saying “I want to move West!” and are doing so. Students then use additional readings and examples in class to help them explore these issues even further, for example they can delve more deeply to learn that western counties with gateway communities next to federal lands are growing the most rapidly (Frentz et al., 2004).

Third, students become aware of where federal land agencies are operating and where they are absent (e.g., the BLM operates only in the West). This is relevant for their career planning as many want to work for federal agencies. Fourth, students are asked to relate public land ownership and population change to broader issues with outdoor recreation and natural resources management. After the assignment, and during subsequent class discussions, students are asked to discuss other concepts that relate to the assignment, such as supply and demand of recreation resources, tourism, water resource management, etc. Finally, students are challenged to think critically about population migration to the West and about what the future holds for this area regarding demands on public lands. This activity often has the positive outcome of being memorable for students, and they are able to recall themes later during class discussions and on exams.

Recommendations

Instructors have several ways to incorporate the content of this assignment into ongoing class discussions. One approach is to explore the historical reasons behind the geographic pattern of public vs. private land ownership in the U.S. History can help students understand why there is an abundance of public land in the West and the lack of it in the East. A helpful lecture may include a series of maps over time showing the original 13 colonies, then the growth of the country through westward expansion, the Louisiana Purchase, acquisition of Alaska, and other historical land purchases.

Another extension is to have students apply theories of work and leisure, such as opportunities for leisure related to lifestyle and where people live. As a society, we have become more mobile. Technological advancements have given people more freedom to go where the amenities are, and jobs will follow, rather than being tied geographically to an area for a career (Hansen et al., 2002; Reynolds, 2004). Further, as people reach the end of their careers they seek recreational amenities. As Taylor (2004) noted, people who initially moved north for their careers tend to move back south and west for their retirement. Retirees have leisure time and money available for pursuing recreational activities. Retirees want natural beauty, cultural amenities, community involvement, transportation infrastructure, health care services, environmental stewardship, and economic development (Hansen et al., 2002; Smith, 1996; Taylor, 2004), all of which put competing pressures on western communities.

Instructors can extend the concepts of this activity to incorporate broader natural resource management issues. For example, water scarcity is an important issue for Western states (Smith, 1996), and the Colorado River Watershed is useful case study (Johnson & Murphy, 2004). Water resource management will be increasingly important with continued migration westward. Demand for water for irrigation and hydroelectric power affects availability of water for recreational uses (Johnson & Murphy, 2004). There are also downstream effects, such as water withdrawals from Lake Powell that will eventually affect the Grand Canyon downstream. In these examples, students can explore the competing demands for the Colorado River that relate to outdoor recreation.

This hands-on computer laboratory activity has become a standard in my Outdoor Recreation and Society course. Students seem to remember what they learned, perhaps because they can visualize the geographic patterns through pictures and maps that they created themselves. Students gain a deeper understanding of the complex issues facing the Western U.S. and can put their desire for living there in a greater context.

References

- Frentz, I. C., Farmer, F. L., Guldin, J. M., and Smith, K. G. (2004). Public lands and population growth. *Society and Natural Resources*, 17, 57-68.
- Hansen, A. J., Rasker, R., Maxwell, B., Rotella, J. J., Johnson, J. D., Wright, A., et al. (2002). Ecological causes and consequences of demographic change in the New West. *BioScience*, 52(2), 151-162.
- Johnson, K., and Murphy, D. E. (2004, May 2). Drought settles in, lake shrinks and West's worries grow. *The New York Times*, Late Edition - Final, Section 1, Page 1, Column 2.

Reynolds, C. (2003, Dec./2004, Jan.) Magnetic South. *American Demographics*, 25(10), 24-25.

Smith, A. K. (1996, April 1). Building a new frontier. *U.S. News & World Report*, 120(13), 62-65.

Taylor, J. (2004, September). Manifest Destiny 3.0. *American Demographics*, 26(7), 28-34.

The Census take on movers. (2004, May). *American Demographics*, 26(4), 11-11.

U.S. Census Bureau. (2006) Statistical Abstract of the United States, 125th Edition. Section 6. Geography and Environment. Table 348. Total and Federally Owned Land by State: 2003; Available: <http://www.census.gov/prod/www/statistical-abstract.html>.

U.S. Census Bureau. (2005). State Rankings from the Statistical Abstract of the United States.

Table 2: Cumulative Estimates of Population Change for the United States and States, and for Puerto Rico and State Rankings: April 1, 2000 to July 1, 2005 (NST-EST2005-02); published 22 December 2005; Available: <http://www.census.gov/popest/states/NST-pop-chg.html>.