



# Agricultural and Resource Policy Report

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## WHAT'S IN A NAME? ECONOMIC IMPACT OF NATIONAL PARK DESIGNATION ON THE GREAT SAND DUNES AND THE SAN LUIS VALLEY

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- “National Park designation should result in 24,000 more visitors per year”
- “Increases in tourist visits should result in \$2.3 million in additional economic activity in the San Luis Valley.”

Here, we first estimate the effect of changes in designation from US National Monuments to National Parks on visitation. We then apply the estimate to the Great Sand Dunes and, using input-output analysis, provide an estimate of the economic impact of the anticipated increase in visitation on the San Luis Valley.

### Introduction

Public lands designations, in particular National Monuments and Parks, signal the significance and likely character of the potential visitors' experience, and thus may have substantial effects on visitation. Changes in designation may imply (real or perceived) differences in the availability of services, in promotional expenditures by the National Park Service (NPS), in allowable land uses, or in the uniquely attractive features of the site. Therefore, these changes in public lands designation may result in greater visitation to a given site.

Changes in visitation also are likely to have significant economic impacts on regions that contain such evolving public land uses. Using visitation as the driver, the economic impacts of visitation trends can be assessed through input-output models, clearly linking changes in land use designation with economic impact.

### Public Land Re-designation

The National Park Service employs a 16-category typology of public lands designations. Each of these categories carries information about the type and size of resource under protection and the permitted uses of the resources under each designation. National Park (Park) and National Monument (Monument) are perhaps the most significant of the 16 categories for visitation. Typically, Parks and Monuments differ in several important dimensions: Parks tend to be larger than Monuments. Parks are commonly important natural areas that may have historical relevance, while historical or scientific relevance is required of Monuments. Hunting, mining and other consumptive resource uses are not permitted in Parks, while they may be allowed on federal lands containing Monuments. Finally, Congress generally makes additions to the National Park System, while the President may establish Monuments

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on existing federal lands using the Antiquities Act of 1906 (National Park Service 2000, 2001c). Table 1 illustrates the year that the eight current National Parks used for this analysis were re-designated from their original National Monument status.

Land re-designation of this sort should enhance the importance and interest in the site as a tourist destination. Changes in allowable uses, availability of services, and in the number of citations in promotions materials may influence these real or perceived differences in site quality or awareness. The effect of this adjustment in public perception can be measured through changes in annual visitors to the site holding all other factors constant. The motor vehicle character of most National Park visitation reinforces that dynamic, as many households target a series of parks for their vacations. Re-designation may add that site to potentially thousands of visitation lists.

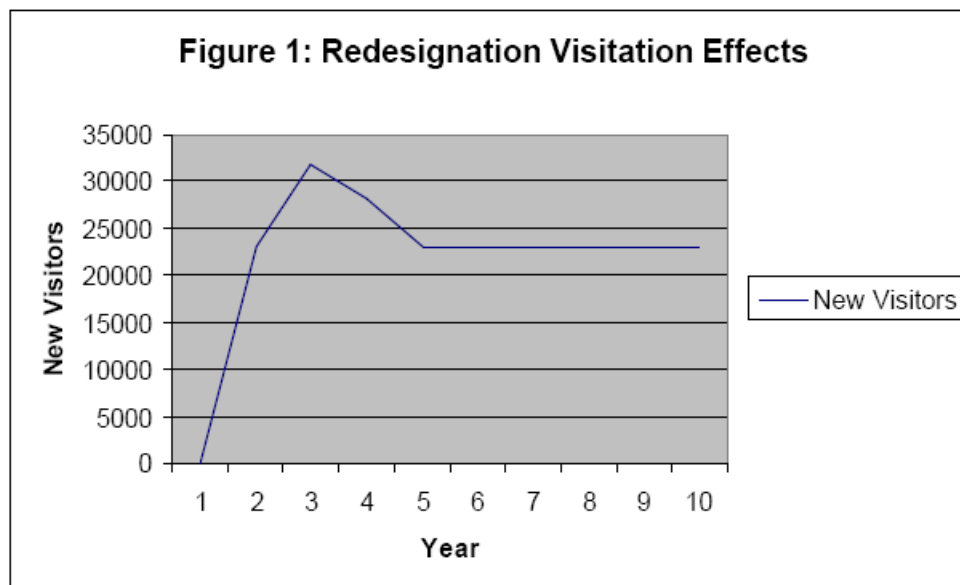
### Results

Using data tracking the change in visitation after the conversion of seven previous National Monuments to National Parks, statistical estimates reveal that the change in public land designation from Great Sand Dunes National Monument to National Park should yield about 24,226 additional annual visitors. This difference in visitation is above and beyond expected increases due higher population, which is estimated at 3 additional visitors for every 1,000-person increase in the US population.

However, the increase in visitation is not expected to be instantaneous. As a result, further statistical exploration reveals the likely pattern of increase in visitation to the Sand Dunes based upon the analysis of eight analogous Monument-to-Park re-designations (Figure 1). The first full year of park status yields 22,945 new visitors above the trend baseline. The following year

Table 1: National Monuments re-designated as National Parks, 1979 to 2000.

Site	Established as Monument (year)	Re-designated as Park (year)
Biscayne, Florida	1968	1980
Channel Islands, California	1938	1980
Great Basin, Nevada	1922	1986
Joshua Tree, California	1936	1994
Saguaro, Arizona	1933	1994
Death Valley, California	1933	1994
Black Canyon, Colorado	1933	1999
Great Sand Dunes, Colorado	1932	2000



produces an additional 8,827. However, this wave of excitement subsides, with the ensuing years yielding losses of 3,522 and 5,104 relative to the baseline. From the fifth year after re-designation onward, the expected increase due to the land use change should equilibrate around 24,000 additional visitors per year, all other factors remaining unchanged.

Changes in designation thus clearly increase visitation above the time trend baseline. However, this effect is not a simple jump in the first full year of National Park status. Such status changes lead to an initial wave of interest, overshooting the eventual long-term visitation increase, but finally settling to this higher trend level of visitation. This dynamic reinforces the likelihood that those most sensitive to the designation are external visitors who target National Parks. Interest accelerates rapidly in the years immediately following the opening, as extra visitors may target Sand Dunes specifically, then fall back to the long-term trend as an annual pilgrimage of 24,000 new visitors add the Dunes to their list.

### **The San Luis Valley & Great Sand Dunes National Park**

The GSD National Park is at the East-Central extreme of the San Luis Valley (SLV), nestled against the Sangre de Cristo mountain range at about 8,000 feet above sea level. The SLV lies between the Sangre de Cristo and San Juan mountain ranges, two of the principal ranges of the central Rocky Mountains. The SLV is comprised of six counties (Alamosa, Conejos, Costilla, Mineral, Rio Grande and Saguache) totaling more than 8,000 square miles in area, making it the largest intermountain valley in the world. Sixty percent of the SLV is public land. The Sand Dunes are a direct byproduct of the SLV's unique context, as sands from the flat valley floor are lifted by the prevailing westerly winds and deposited at the base of the eastern Sangre de Cristo Mountains. The underlying water table provides a crucial foundation to the dunes, whose surface nevertheless mutates perpetually.

The San Luis Valley had a population of 46,190 in 2000, experiencing less than half the rate of growth (14.9%) of the rest of Colorado over the preceding decade. The average unemployment rate in the SLV is 8.8%, more than double the state unemployment rate of 3.8%. The poverty rate in the SLV has consistently been the highest in Colorado and the median household income for the SLV was \$31,274 compared to \$49,301 for Colorado in 1999. While the role of rela-

tively low paying, direct agricultural employment has declined to about 3% of all Colorado workers, the SLV remains chiefly agricultural, with more than 16% of its 22,286 total employees in production agriculture. In addition, little value-added agricultural processing takes place in the SLV, further diminishing economic opportunity and development in the region (Wisdom, 2000; Weiler et al., 2000; Census 2000).

Tourism is another important, often overlooked, part of the San Luis Valley economy, as can be seen through the relative importance of the retail (17.3%) and service (24.2%) sectors. The economic impact of tourism in the SLV has been estimated at \$22.5 million and more than 1,600 direct jobs. Currently, Alamosa County receives the largest share (\$10.4 million) of tourism expenditures (Wisdom, 2000). Alamosa County should also benefit most from the designation change of the GSD, since it has the largest retail and service sector in the SLV and is the major center nearest to the GSD. The substantial role of retirees (22%) to regional income adds further support to the importance of natural amenities to the regional economy. Amenities such as national parks increase the attractiveness of a region to second homebuyers and retirees and provide a further spark to the natural resource based tourism sector.

In transforming the GSD from a National Monument to a National Park, the physical character of the GSD underwent significant change. The original National Monument featured 38,624 acres, mostly encompassing the dunes themselves, which rise up to 700 feet above the valley floor. The re-designation adds an area of 69,261 acres to the GSD National Park, as well as providing for an adjacent National Preserve of 41,872 acres, giving the GSD total area of 149,757 acres. Since the GSD National Park will be triple its former size as a National Monument, a need is created for an increase in full time staff from 19 to 25. The current budget for the GSD is \$968,000; roughly 85% is budgeted for wages, while the remaining 15% is dedicated to supplies and materials for the operation of the park (GSD, 2001).

### **Economic impact analysis**

The importance of the tourist economy to the San Luis Valley underscores the importance of understanding the potential impact of the Great Sand Dunes National Monument conversion to a National Park. Using survey data on visitor expenditures from both primary and secondary sources, we can translate these visitor

numbers into local economic impacts through input-output analysis.

New visitors are likely to emanate from outside the region, since the change in designation is unlikely to change local citizens' views of an already well-known resource. Such new external visitors and their spending generate new (export) sales of retail and services in the SLV, creating the initial direct effects of new economic activity. These direct effects are "multiplied" through the regional economy via indirect and induced local expenditures. The indirect effects represent additional economic activity in the economy from local suppliers to these directly affected establishments. New induced economic activity through increases in local household income and spending is also likely to occur. These induced effects are reflected in the new local goods and services purchased by residents who now have extra income from the Dunes' new economic activity. The combination of these direct, indirect, and induced effects yield the total economic impact on the San Luis Valley from the new visitation.

A recent survey by the GSD staff showed that the average visitor spends approximately \$68 in the SLV for a given trip (GSD, 2001). However, a detailed breakdown of these expenditures was not available. As a result, expenditure proportions were gathered from the Grand Teton National Park, due to its similarities to the GSD as a single major gateway destination, and applied to the \$68 estimated daily expenditure figure (Weiler et al., 2001).

Using the combined data gathered from these two surveys, estimated per visitor local expenditures were divided among six sectors: lodging (\$27), eating/drinking establishments (\$12), travel (\$11), equipment/miscellaneous retail (\$11), recreation services (\$4) and food stores (\$3). Since visitation drives the final demand in these sectors, the spending by typical visitors will produce impact estimates on affected sectors in the areas of output, employment, and income.

Direct impacts would occur in the six directly affected industries. The increase in activity in these industries would result in some indirect impacts on related supply industries, such as restaurant supply and wholesale trade/transportation. However, given the size and isolation of this community, most of these indirect effects would likely occur outside the local area. More importantly, induced impacts on households and local gov-

ernment would reflect the increased income (and thus spending) of households as well as greater needs for local government services. The combined direct, indirect, and induced effects produce the final changes in output, income, and employment for the local economy.

### **Economic Impact: Results**

The output multipliers for most retail goods and services directly affected by tourism are between 1.3 and 1.4, indicating that \$300,000-400,000 worth of additional economic activity takes place in the San Luis Valley for each million dollars of direct export sales. Indirect effects range from 0.07 in Food Stores, which can receive only few supplies locally, to 0.24 in Eating/Drinking establishments that have more local intermediate suppliers. In contrast, induced effects (0.15) are lower for Eating/Drinking, given their low pay, while being higher (0.24) for better paid Food Stores. The combination of these two effects yields the regional multiplier.

Combining the visitation analysis estimate (24,226 additional visitors) with the GSD results (\$68 per visitor), an estimated direct effect of \$1,647,368 in new export sales due to the re-designation of the Great Sand Dunes from National Monument to National Park. When the direct effects are combined with the indirect and induced effects, the estimated total economic impact of the change of GSD designation is more than \$2.3 million (Table 2).

Table 2 details the estimated output impacts on the ten most affected regional economic sectors, comprising approximately 84% of the total anticipated impact. The largest direct (\$654 thousand) and total impact (\$668 thousand) is expected in the Hotel and Lodging sector and the second most direct (\$291 thousand) and total impact (\$319 thousand) is expected in the Eating and Drinking establishments sector. Together, these two sectors are expected to feel more than 43% of the total change in economic activity due to the re-designation of the GSD.

Such additional output also produces additional employment, with a total impact of 65.9 jobs, or approximately 0.3% of the San Luis Valley's current total employment. Table 3 details the range of employment impacts on the 15 industrial sectors most affected by the change in public land designation, accounting for some 93% of the total expected employment

Table 2: Estimated annual output impact of Great Sand Dunes re-designation (\$)

Industry	Direct	Indirect	Induced	Total
<i>Total</i>	<i>1,647,368</i>	<i>335,586</i>	<i>312,125</i>	<i>2,295,079</i>
Hotels and Lodging Places	654,102	9,068	4,794	667,965
Eating & Drinking	290,712	5,943	22,651	319,306
Automotive Dealers & Service Stations	266,486	1,269	13,274	281,029
Miscellaneous Retail	266,486	916	9,582	276,984
Amusement and Recreation Services	96,904	2	4,016	100,921
Food Stores	72,678	1,521	15,908	90,106
Real Estate	0	40,328	14,443	54,771
Banking	0	33,747	17,426	51,173
Wholesale Trade	0	23,185	18,722	41,907
Electric Services	0	32,484	7,851	40,335

Table 3: Estimated annual employment impact of Great Sand Dunes re-designation (FTE)

Industry	Direct	Indirect	Induced	Total
<i>Total</i>	<i>54.5</i>	<i>5.0</i>	<i>6.4</i>	<i>65.9</i>
Hotels and Lodging Places	18.0	0.2	0.1	18.4
Miscellaneous Retail	15.3	0.1	0.6	15.9
Eating & Drinking	10.7	0.2	0.8	11.7
Automotive Dealers & Service Stations	6.0	0.0	0.3	6.4
Food Stores	2.4	0.0	0.5	2.9
Amusement and Recreation Services	2.1	0.0	0.1	2.2
Wholesale Trade	0.0	0.4	0.3	0.7
Accounting- Auditing and Bookkeeping	0.0	0.4	0.1	0.5
Maintenance and Repair Other Facilities	0.0	0.4	0.0	0.5
Hospitals	0.0	0.0	0.4	0.4
Banking	0.0	0.3	0.1	0.4
Doctors and Dentists	0.0	0.0	0.4	0.4
Credit Agencies	0.0	0.3	0.1	0.3
General Merchandise Stores	0.0	0.0	0.3	0.3
Real Estate	0.0	0.2	0.1	0.3

impacts. These effects come uniquely from the change in designation, and can be used to assess the relative costs of status changes against the regional benefits. More than 80% of the direct employment impacts and 70% of the expected total employment benefits are expected to benefit three sectors: Hotels and Lodging,

Retail, and Eating and Drinking Establishments (Table 3).

A complete social accounting of even these benefits needs to be evaluated against the alternative uses of resources, especially the labor and land that would be

used in new economic activity. In urban areas, where resource use is already high, new benefits are likely to be counterbalanced by the cost of conversion of already utilized production factors. However, since many of these conversions occur in rural areas, labor and land are likely to have much lower values in alternative uses. In the San Luis Valley, the considerable unemployment and low-use land suggests that the social returns of new tourist activity are likely to be high (Weiler et al., 2000). Note that a full accounting should include the environmental enhancement and deterioration effects, use and existence values, and crowding and congestion effects from both residents and nonresident perspectives, as well as an assessment of potential local disenfranchisement and cultural change due to the increasing role of tourism in the local economy.

### Conclusions

Designations of public lands are a particularly powerful policy tool that can dramatically alter land usage patterns and resource exploitation. While federal land use decisions are understandably non-local, such designations and redesignations are likely to have sizable local and regional economic implications. The Great Sand Dunes, like many of these public lands, reside in rural areas of the Intermountain West, where tourism income is a vital component of the local economy. Measuring the impact of such conversions should become an important part of the benefit/cost analysis of such policy decisions.

In this paper we combine a number of analytical techniques to reveal the likely economic impact of changing the designation of Sand Dunes National Monument to a National Park. This status change results in 24,226 new long-term visitors, which is shown to have a sizable economic impact on the San Luis Valley. While the employment impact is only about 0.3% of current total employment (65 jobs) and the output impact is an estimated \$2.3 million, such impacts are likely to bring substantial social returns in such struggling areas, as

the opportunity cost of resources are generally exceptionally low.

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