ESTIMATION OF CHURCHILL COUNTY ECONOMIC IMPACTS AND VISITORS TO SAND MOUNTAIN DURING LABOR DAY, 2003 WEEKEND
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Sand Mountain Recreation Survey Results

Individual data were collected by a mail survey administered by the Fallon Convention Center during the Labor Day weekend, 2003. Questionnaires were handed out to people recreating at Sand Mountain. The questionnaire was a prepaid postcard that could be mailed back to the convention center. Thirty-eight (38) survey questionnaires were returned. Respondents were asked eight questions regarding how many Sand Mountain visits they had made in the last twelve months, the total days and nights they had stayed in Churchill County in the last twelve months, how many nights were spent at a motel, expenditures related to their Sand Mountain visit, zip code, age and income category. These respondents reported an average of approximately three persons per group for a total of 114 people. They reported making a total of 241 trips to Sand Mountain in the last twelve months, or an average of 6.3 trips per group.

Results Summary.

Results for the first three questions are given in Table 1. The questions were stated in the survey instrument as follows:

Question 1. How many times, including today, have you visited Sand Mountain during the past 12 months?

Question 2. How many total days and nights did you stay in Churchill County to visit Sand Mountain during the past 12 months?
   ____days ____nights.

Question 3. If you stayed overnight, how many nights did you stay in Churchill County:
   ____in a motel or similar lodging facility?
   ____with friends or relatives?
   ____Other (specify:___________)

The 38 respondents reported taking a total of 241 trips to Sand Mountain in the last 12 months. One particularly avid individual reported taking 45 trips or approximately 19% of the total trips reported. The next highest number of trips taken was 14. The median number of trips the group had taken in the last year was four.

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1 These totals are taken from question 5 which requested the number of adults and children on the longest visit made to Sand Mountain, not necessarily the visit at which the respondent was intercepted.
Respondents reported staying in Churchill County a total of 505 days and 380 nights. The median number of days spent in Churchill County in order to visit Sand Mountain was ten. Median number of nights spent was eight. Twelve groups reported staying in a motel for a total of 39 motel nights. Only one group reported staying with friends and relatives. Twenty-four out of the thirty-eight respondents (63%) wrote in that they camped at Sand Mountain or stayed in an RV or trailer.

Table 1. Total Visits in the Last 12 Months: Summary Data for Questions 1, 2, and 3.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Average</th>
<th>Median</th>
<th>Total</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visits to Sand Mountain, last 12 months</td>
<td>38</td>
<td>6.3</td>
<td>4</td>
<td>241</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>Total Days in Churchill to visit Sand Mountain, last 12 months</td>
<td>37</td>
<td>13.6</td>
<td>10</td>
<td>505</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>Total nights in Churchill to visit Sand Mountain, last 12 months</td>
<td>38</td>
<td>10</td>
<td>8</td>
<td>380</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>Nights at Motel</td>
<td>12</td>
<td>3.25</td>
<td>2</td>
<td>39</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Nights with friends/relatives</td>
<td>1</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Camping, RV or other (11 of the 26 respondents choosing “other” gave data on number of days)</td>
<td>11</td>
<td>11.5</td>
<td>12</td>
<td>126</td>
<td>1</td>
<td>22</td>
</tr>
</tbody>
</table>
Table 2 shows a summary of results from question 4. Question 4 requested the respondents to break out their expenses for their longest visit to Sand Mountain by category of expenditure and percent spent in Churchill County\(^2\).

### Table 2. Average and Total Expenditures of Sand Mountain Respondents by Category.

<table>
<thead>
<tr>
<th>Expenditure Type</th>
<th>N</th>
<th>Average</th>
<th>Total</th>
<th>N (Churchill)</th>
<th>Average in Churchill</th>
<th>Total in Churchill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging</td>
<td>38</td>
<td>$61</td>
<td>$2,320</td>
<td>38</td>
<td>$48</td>
<td>$1,820</td>
</tr>
<tr>
<td>Restaurants/Meals</td>
<td>38</td>
<td>$109</td>
<td>$4,125</td>
<td>38</td>
<td>$92</td>
<td>$3,512</td>
</tr>
<tr>
<td>Tourism Fees</td>
<td>38</td>
<td>$29</td>
<td>$1,090</td>
<td>38</td>
<td>$28</td>
<td>$1,045</td>
</tr>
<tr>
<td>Retail Stores</td>
<td>38</td>
<td>$88</td>
<td>$3,360</td>
<td>38</td>
<td>$83</td>
<td>$3,163</td>
</tr>
<tr>
<td>Groceries</td>
<td>38</td>
<td>$221</td>
<td>$8,407</td>
<td>37</td>
<td>$184</td>
<td>$6,806</td>
</tr>
<tr>
<td>Gas and Auto</td>
<td>38</td>
<td>$215</td>
<td>$8,185</td>
<td>37</td>
<td>$182</td>
<td>$6,726</td>
</tr>
<tr>
<td>Other</td>
<td>38</td>
<td>$26</td>
<td>$985</td>
<td>37</td>
<td>$25</td>
<td>$909</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>$749</td>
<td>$28,472</td>
<td>37</td>
<td>$647</td>
<td>$23,935</td>
</tr>
</tbody>
</table>

**Question 5. These expenses in question 4 were for how many persons?**

____ Adults plus ____ children (less than 18 years old) for ____ days.

The 38 respondents reported a total of 75 adults and 39 children. The average group reported that 2 adults and 1 child had been present on the trip for which the expenses were reported. Two individuals responded with a range (i.e. 2-3 adults), perhaps indicating that the expenses were reported for an average trip rather than the longest trip they had taken. The highest number reported was entered into the database.

There was some non-response on the section of question 5 that asked how many days the visit (according to question 4, their longest visit to Sand Mountain) lasted. 32 individuals provided this information. For them, the average trip length for the expenses reported was 5.5 days while the median trip length was four days. The maximum trip length reported was 40 days. One individual reported this trip length while two individuals reported the next largest trip length of 12 days. Total days reported were 176.

\(^2\) Note that in the Churchill portion of the table, expenditures do not sum to total because some individuals provided only partial information on what portion of expenses were incurred in Churchill County.
Where no information was given on the length of a trip (6 respondents) the total days from question 2 were used to find per day expenses. If the respondent’s trip lasted a shorter time, this assumption would underestimate their expenses. When all 38 respondents were included in this fashion, average trip length was 7 days and total days reported were 266.

Table 3. Expenditures per Person and per Day in Churchill County.

<table>
<thead>
<tr>
<th>Total Expenses in Churchill County</th>
<th>Average (over all groups)</th>
<th>Median</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (N=37) $23,935</td>
<td>$</td>
<td>647 $</td>
<td>$350 $0</td>
<td>$4,045 $</td>
</tr>
<tr>
<td>Average per person</td>
<td>$</td>
<td>261 $</td>
<td>$139 $0</td>
<td>$2,023 $</td>
</tr>
<tr>
<td>Average per day</td>
<td>$</td>
<td>89 $</td>
<td>$66 $0</td>
<td>$255 $</td>
</tr>
<tr>
<td>Average per person per day</td>
<td>$</td>
<td>37 $</td>
<td>$20 $0</td>
<td>$175 $</td>
</tr>
</tbody>
</table>

**Question 6: What is your residence zip code?**

All 38 respondents provided a zip code. Nine of the respondents had Nevada zip codes and all the remaining respondents had California zip codes. See Figure 1 for a map of the 38 zip codes.

**Question 7: Your approximate age is: (_______ less than 25 years), (_____ 25 to 34 years), (_______ 35 to 44 years), (____, 45 to 54 years), (____, 55 to 65 years), (_______ over 65 years).**

All respondents gave an age category. The median age group reported for the respondents was 35 to 44 years of age. The distribution is shown in Table 4.

Table 4. Age Distribution of Sand Mountain Survey Respondents.

<table>
<thead>
<tr>
<th>Count</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>less than 25 yrs.</td>
</tr>
<tr>
<td>9</td>
<td>25 to 34 yrs.</td>
</tr>
<tr>
<td>16</td>
<td>35 to 44 yrs.</td>
</tr>
<tr>
<td>6</td>
<td>45 to 54 yrs.</td>
</tr>
<tr>
<td>4</td>
<td>55 to 65 yrs.</td>
</tr>
</tbody>
</table>
Figure 1: Respondent Zip Code Driving Distance to Sand Mountain, Nevada

Visitor Frequency and Home Zip Code

- 1
- 2
- 3

Hour Driving Intervals

- 1
- 2 - 3
- 4 - 5
- 6 - 7
- 8 - 9
- 10 - 11
Thirty-seven respondents gave an income category. The median income category reported for the respondents was “over $60,000”. The distribution is shown in Table 5.

Table 5. Income Distribution of Sand Mountain Survey Respondents.

<table>
<thead>
<tr>
<th>Number</th>
<th>Income Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>less than $10000</td>
</tr>
<tr>
<td>1</td>
<td>$20000 to $29999</td>
</tr>
<tr>
<td>4</td>
<td>$40000 to $49999</td>
</tr>
<tr>
<td>3</td>
<td>$50000 to $59999</td>
</tr>
<tr>
<td>28</td>
<td>over $60000</td>
</tr>
</tbody>
</table>

Impacts of Sand Mountain Recreation in Sand Mountain

To derive the economic impacts of Sand Mountain recreation on Churchill County, the IMPLAN input-output model was used (Minnesota IMPLAN, 1997). The Churchill County input-output model can be used to derive total economic, employment, and income impacts of visitor expenditures to Sand Mountain.

Results from Table 2 were used to derive economic sectoral expenditures for Sand Mountain visitation. From Table 2, the total amount spent in Churchill County was $23,935. However, expenditures made at local restaurants had to be margined; that is, only the mark-up of retail expenditures remain in Churchill County. The national Retail Trade Summary (U.S. Dept. of Commerce, 2003) was used to derive margins for selected retail establishments.

From Table 6, the total impacts on Churchill County from expenditures reported on the Labor Day questionnaires can be seen. Visitors had expenditures in Churchill County of $10,764, which yields total economic impacts of $19,608 in Churchill County. The estimated output multiplier for Sand Mountain visitors was 1.82. This means for every $1.00 of Sand Mountain visitation expenditure, an additional $0.82 of expenditure occurred in Churchill County due to business and local household economic linkages.
Total economic impact from a $1.00 Sand Mountain visitation expenditure made in Churchill County was $1.82.

Also from Table 6, the direct impacts from $10,764 in total Sand Mountain visitation expenditures in Churchill County was 0.3 jobs directly in Churchill County. Given the economic linkages in Churchill County, total employment impacts from Sand Mountain recreation was 0.4 employees. The estimated employment multiplier for Sand Mountain visitation was 1.33. This means for every one job created directly from Sand Mountain tourism expenditures in Churchill County, another 0.33 jobs were created due to business and household expenditure linkages. Total employment impact in Churchill County from a one-job increase to meet Sand Mountain visitation would create 1.33 jobs in Churchill County.

Finally, from Table 6, the Churchill County Sand Mountain income impact due to visitation expenditure during Labor Day weekend, 2003 was $5,013. Given the business and household economic linkages in Churchill County, the direct increase of $5,013 in household income would yield a total Churchill County household income impact of $8,125. The estimated household income multiplier for Sand Mountain visitation in Churchill County is 1.62. This means for every $1.00 increase in Churchill County household income due to expenditures by visitors to Sand Mountain, an additional $0.62 in household income is generated due to economic linkages of local businesses and households. Therefore, total income impacts in Churchill County from Sand Mountain visitation was $1.62 for every $1.00 increase in household income due to expenditures by visitors to Sand Mountain during the 2003 Labor Day weekend.

Table 6. Economic, Employment, and Total Income Impacts of Sand Mountain Visitation on the Churchill County Economy.

<table>
<thead>
<tr>
<th>Direct</th>
<th>Total</th>
<th>Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>$10,764</td>
<td>$19,608</td>
</tr>
<tr>
<td>Employment</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Income</td>
<td>$5,013</td>
<td>$8,125</td>
</tr>
</tbody>
</table>
Conclusion

Results of the tourism questionnaire and IMPLAN input-output model show the type of visitor to Sand Mountain during the 2003 Labor Day weekend and potential impacts to the local economy. These results are only a quick preliminary analysis covering the 2003 Labor Day weekend. A more in-depth analysis could be provided in the following ways:

1. From Table 3, the average per person, per day expenditure was $37. If Bureau of Land Management data shows total persons per day that visited Sand Mountain over the entire year, a total estimate of visitor expenditures can be made. If it is acceptable to believe Labor Day visitor expenditures could proxy for total average expenditures to Sand Mountain, then a total season impact analysis could be performed.

2. If the Labor Day questionnaire data does not reflect average expenditures by visitors to Sand Mountain throughout the year, a larger sample size is needed. Working with the Bureau of Land Management, questionnaires could be handed out during different periods of the week at Sand Mountain. For a given month, two questionnaire surveys would be done during the weekend, and two done during the workweek. This type of visitor analysis would ensure that an average per person, per trip expenditure could be developed. Then, using Bureau of Land Management visitor data, a total per person, per trip visitation could be derived for economic impact analysis.
References
