

## **Economic Impacts of Selected National Parks; Update to Year 2001**

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Economic impact estimates for thirty NPS units (Stynes, 2002) are updated to 2001 based on the most recent recreation visit data<sup>1</sup>. Updated estimates for 2001 are based mainly on changes in visitation with some adjustments to spending and employment multipliers to reflect price changes. Bureau of Labor Statistics (BLS) price indices were used to adjust spending and employment multipliers to 2001 dollars. Spending averages increased by about 2% over 2000 and employment multipliers declined by 2%.

Changes in spending and economic impacts for individual parks are therefore due primarily to changes in visitation. System-wide park use declined slightly from 286 million recreation visits in 2000 to 280 million in 2001. There was no change in total recreation visits for the 30 parks analyzed here, although individual park varied by as much as 24% over the previous year. We assumed no change in segment shares, spending patterns, party sizes or length of stay at individual parks.

### **Procedures**

In a previous report (Stynes 2002), economic impact estimates for 2000 were generated for 34 NPS units using the MGM2 Shortform model.

The MGM2 Shortform estimates visits and spending within four NPS visitor segments: locals, non-local day trips, and overnight stays in motels or campgrounds.

- Local visitors live within the local region, as defined by the park (generally a 50-100 radius of the park).
- Non-Local (NL) Day trips are visits by parties who do not live in the local area and who did not stay overnight in the local area for the park visit. Exceptions are visitors staying with friends or relatives in the area or in an owned seasonal home. Their park visit is treated as a day trip, but is included in the non-local category since they do not live in the local region.
- Visitors staying overnight in the area are dividing between those staying in campgrounds or backcountry sites versus motels, hotels, lodges, cabins, B&B's and other rented accommodations. The motel and camp segments include visitors staying either inside or outside the park.

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<sup>1</sup> Four parks reported for 2000 are omitted here due to changes or inconsistencies in visit reporting between 2000 and 2001 (Roosevelt-Vanderbilt, Washita NB, Richmond NBP and Boston NHP).

MGM2 model parameters include estimates of segment shares, party size, length of stay, re-entry, and per day spending figures for each segment, and a set of economic ratios and multipliers representing the local economy. With the exception of a few parks that had recently conducted visitor surveys, the visitor parameters were estimated by park managers based on judgement and what local data were available. Parks could select from a range of spending averages based on studies at several parks. Stynes (2002) provides details on how these data were gathered from each park and the values for each parameter. Multipliers were based on input-output models for regions around NPS units using the IMPLAN system<sup>2</sup>.

Impact estimates for 2001 assume that most parameters did not change between 2000 and 2001. Changes in estimates of spending and impacts are driven largely by changes in park recreation visit data. (NPS Public Use Statistics Office, 2002, Table 5) Calculations are summarized below as we explain how the figures in each table are generated and briefly interpret and define terms.

## Results

Results are presented in Tables 1-5. Table 1 breaks down reported recreation visits for each park into the four segments.

Recreation visits are converted to party days/nights in Table 2 by applying party size, length of stay and park re-entry factors for each park (see Stynes 2002 for these values). The conversion formula is:

$$\text{Party days/nights} = \text{Recreation visits} * \text{length of stay} / (\text{party size} * \text{re-entry rate})$$

As the MGM2 average spending figures are on a party day/night basis, recreation visits are multiplied by length of stay in the area to count spending for each day spent in the local area. Dividing by party size converts the use figures from a per person to a per party (vehicle) basis and the re-entry factor adjusts for visitors who may enter the park multiple times during a stay in the area.

Visitor spending in the local area is estimated by multiplying party days/nights in Table 2 by per party per day spending averages for each park in Table 3. These calculations are carried out for each segment and then summed to get totals. Across the 30 parks, local visitor parties average \$37 in spending per day, non-locals on day trips average \$56, visitors in motels average \$180 per party per night and campers average \$80 per night (Table 3). These spending averages vary quite a bit across parks. Only a few parks have conducted recent visitor spending surveys, so for many parks the averages are based on manager judgement in choosing from ranges that we recommended based on studies at several parks. Some parks relied on other local data sources.

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<sup>2</sup> Multipliers were estimated using 1996 models. Employment ratios are adjusted to 2001 based on price changes. The MGM2 model generic multipliers are used for most parks, as IMPLAN data were purchased for only five states. See the MGM2 manual for further information (Stynes et. al. 2000).

Spending totals are reported by segment in Table 4. Economic impacts are estimated in Table 5 by applying the visitor spending from Table 4 to a set of economic ratios and multipliers for each park. Multipliers are the same as those used in 2000<sup>3</sup>, except for a 2% downward adjustment in the employment to sales ratios to reflect price changes.

Direct effects are the impacts on businesses selling directly to park visitors. Total effects include both direct and secondary effects. Secondary effects include indirect and induced effects as visitor spending circulates within the local economy<sup>4</sup>. Impact measures are sales, personal income, jobs and value added<sup>5</sup>.

Table 6 compares estimates of recreation visits, visitor spending and direct jobs between 2000 and 2001. Job estimates are directly related to spending, which in turn is directly related to visits. Across the 30 parks examined total recreation visits did not change between 2000 and 2001 and hence visitor spending increased by 2% and jobs remained the same as in 2000.

Individual parks witnessed declines of up to 14% or increases as much as 24% in visitation with corresponding changes in visitor spending and employment effects. Some of the visit changes may be due to changes in the use measurement protocols. Although some Washington D.C., parks were closed for extended periods following September 11, our figures show no decline in total visits across all Washington D.C. sites.

## **Discussion**

This exercise demonstrates the ease with which economic impact estimates may be updated over time using the MGM2 model and also the importance of the recreation visit estimates. In most cases, it can be assumed that many of the model parameters remain reasonably stable at least for three to five years. Visitor surveys and other studies should be conducted periodically to measure structural changes in park visitor patterns, to include changing segment mixes, spending patterns, party sizes, lengths of stay, or circulation patterns that could affect re-entry rates or visit counts.

Reliability of these estimates will vary from park to park, based largely on the quality and accuracy of local data. Particularly important is the establishment of firm baselines for each park. For economic impact analysis, this should include a visitor survey and some validation of use, spending and impact estimates through comparisons with other local data (e.g., motel and campground occupancy rates, concessionaire and park revenues from visitor fees, local economic accounts, and other tourism data). The five parks for which we have carried out economic analysis with the full MGM2 model illustrate

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<sup>3</sup> See Table 4 in Stynes (2002).

<sup>4</sup> Secondary effects may be calculated by subtracting the direct effects from total effects.

<sup>5</sup> Sales only include retail margins on retail purchases; personal income includes wages, salaries, and payroll benefits; jobs are not full time equivalents but include full and part time jobs; value added measures the total income to the region including personal income to employees and sole proprietors, profits and rents to businesses, and sales taxes to state and local government units.

procedures for establishing a baseline economic impact study<sup>6</sup>. Armed with a baseline MGM2 model for the park, economic impact estimates can be updated readily from year to year.

Parameters describing park visitors, including their spending patterns will be most reliable for parks that have conducted recent visitor surveys. Changes over time can be best monitored through some regular gathering of data about park visitors. This needn't be a complete visitor survey, but for economic impact analysis should be targeted at tracking the key parameters in the MGM2 model, most notably visitor segment shares, party sizes, lengths of stay, and re-entry rates. These data could be gathered by a postcard or very short interview, either on a regular basis or via a special study conducted at five year intervals.

This year we will be completing additional baseline studies for parks that conducted VSP studies in 2001. We will also make spending and impact estimates for all NPS units using the MGM2 Shortform and 2001 park use data.

## References

- NPS Public Use Statistics Office. 2002. National Park Statistical Abstract, 2001. Denver: Co.
- Stynes, D.J., Propst, D.B., Chang, W.H., and Sun, Y. 2000. Estimating regional economic impacts of park visitor spending: Money Generation Model Version 2 (MGM2). East Lansing, MI: Department of Park, Recreation and Tourism Resources, Michigan State University. Available on WWW at <http://www.prr.msu.edu/mgm2/>.
- Stynes, D. J. 2002. Economic Impacts of National Parks on Gateway Communities; Summary of MGM2 Shortform Analyses.

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<sup>6</sup> Reports for Badlands, Great Smoky Mtns , Mount Rainier, and Olympic NP are available at the MGM2 website (<http://www.prr.msu.edu/mgm2/>) and a report for Gettysburg may be obtained from the park. A report for Women's Rights NHP develops baselines without a major visitor survey.

**Table 1. Recreation Visits by Segment, 2001**

| <b>Park</b>             | <b>Total</b> | <b>Local Day Trips</b> | <b>Non-Local Day trips</b> | <b>Motel</b> | <b>Camp</b> |
|-------------------------|--------------|------------------------|----------------------------|--------------|-------------|
| Acadia NP               | 2,516,551    | 125,828                | 629,138                    | 1,509,931    | 251,655     |
| Antietam NB             | 303,599      | 75,900                 | 75,900                     | 121,440      | 30,360      |
| Badlands NP             | 955,469      | -                      | 707,047                    | 124,211      | 124,211     |
| Big Bend NP             | 328,927      | 49,339                 | 49,339                     | 115,124      | 115,124     |
| Boston NHP              | 1,981,301    | 237,756                | 792,520                    | 891,585      | 59,439      |
| Cape Cod NS             | 4,391,478    | 1,097,870              | 1,097,870                  | 1,756,591    | 439,148     |
| Delaware Water Gap NRA  | 4,867,273    | 486,727                | 3,650,455                  | 486,727      | 243,364     |
| Eisenhower NHS          | 74,826       | 3,741                  | 18,707                     | 44,896       | 7,483       |
| Fire Island NS          | 661,692      | 198,508                | 264,677                    | 165,423      | 33,085      |
| Fort Necessity          | 89,133       | 17,827                 | 53,480                     | 8,913        | 8,913       |
| Gettysburg NMP          | 1,792,380    | 89,619                 | 681,104                    | 824,495      | 197,162     |
| Grand Portage NM        | 81,428       | 4,071                  | 8,143                      | 57,000       | 12,214      |
| Hagerman Fossil Beds NM | 12,311       | 6,032                  | 2,955                      | 1,354        | 1,970       |
| Jefferson NEM           | 3,532,524    | 883,131                | 2,225,490                  | 353,252      | 70,650      |
| Maggie Walker NHS       | 10,147       | 8,118                  | 1,015                      | 913          | 101         |
| Mammoth Cave NP         | 1,883,580    | 376,716                | 376,716                    | 753,432      | 376,716     |
| Manassas NBP            | 822,684      | 41,134                 | 699,281                    | 41,134       | 41,134      |
| Martin VanBuren NHS     | 15,950       | 2,552                  | 13,398                     | -            | -           |
| Mount Rainier NP        | 1,301,103    | 156,132                | 806,684                    | 169,143      | 169,143     |
| Washington DC Parks     | 14,938,389   | 2,987,678              | 5,975,356                  | 5,975,356    | -           |
| Olympic NP              | 3,416,069    | 888,178                | 1,229,785                  | 819,857      | 478,250     |
| Pinnacles NM            | 178,243      | 44,561                 | 62,385                     | 8,912        | 62,385      |
| Pipestone NM            | 88,512       | 8,851                  | 26,554                     | 22,128       | 30,979      |
| Point Reyes NS          | 2,222,762    | 422,325                | 933,560                    | 511,235      | 355,642     |
| Prince William FP       | 217,721      | 145,873                | 21,772                     | 10,886       | 39,190      |
| Richmond NBP            | 108,244      | 54,122                 | 21,649                     | 27,061       | 5,412       |
| Scotts Bluff NM         | 113,135      | 45,254                 | 16,970                     | 28,284       | 22,627      |
| Shenandoah NP           | 1,498,561    | 374,640                | 599,424                    | 374,640      | 149,856     |
| Valley Forge NHP        | 1,230,025    | 861,018                | 184,504                    | 184,504      | -           |
| White Sands NM          | 518,958      | 207,583                | 155,687                    | 77,844       | 77,844      |
| Womens Right NHP        | 23,771       | 1,664                  | 19,255                     | 2,377        | 475         |
| Yosemite NP             | 3,368,731    | 336,873                | 1,010,619                  | 1,010,619    | 673,746     |
| Average                 | 1,673,296    | 319,988                | 700,357                    | 514,977      | 127,446     |
| Max                     | 14,938,389   | 2,987,678              | 5,975,356                  | 5,975,356    | 673,746     |
| Min                     | 10,147       | -                      | 1,015                      | -            | -           |

SOURCE: Recreation visit data from Table 5 of National Park Statistical Abstract, 2001. Segment breakdowns from Table 1 of Stynes (2002). Motel and Camp segments include visitors staying inside or outside the park.

**Table 2. Party nights<sup>a</sup> by segments, 2001**

| Park                    | Local Day Trips | Non-Local Day trips | Motel     | Camp    | Total     |
|-------------------------|-----------------|---------------------|-----------|---------|-----------|
| Acadia NP               | 50,331          | 139,808             | 503,310   | 125,828 | 819,277   |
| Antietam NB             | 33,000          | 33,000              | 48,576    | 10,120  | 124,696   |
| Badlands NP             | -               | 228,818             | 36,803    | 33,722  | 299,344   |
| Big Bend NP             | 19,736          | 17,941              | 52,329    | 52,329  | 142,336   |
| Boston NHP              | 39,626          | 66,043              | 118,878   | 7,925   | 232,473   |
| Cape Cod NS             | 477,335         | 477,335             | 1,053,955 | 219,574 | 2,228,198 |
| Delaware Water Gap NRA  | 243,364         | 456,307             | 121,682   | 81,121  | 902,474   |
| Eisenhower NHS          | 1,386           | 6,236               | 29,930    | 7,483   | 45,034    |
| Fire Island NS          | 86,308          | 115,077             | 66,169    | 11,028  | 278,582   |
| Fort Necessity          | 7,751           | 23,252              | 3,565     | 3,301   | 37,869    |
| Gettysburg NMP          | 33,192          | 227,035             | 274,832   | 98,581  | 633,640   |
| Grand Portage NM        | 1,018           | 2,714               | 38,000    | 6,107   | 47,839    |
| Hagerman Fossil Beds NM | 1,508           | 739                 | 1,354     | 1,182   | 4,783     |
| Jefferson NEM           | 294,377         | 741,830             | 235,502   | 23,550  | 1,295,259 |
| Maggie Walker NHS       | 2,505           | 406                 | 457       | 51      | 3,419     |
| Mammoth Cave NP         | 150,686         | 125,572             | 392,413   | 129,160 | 797,831   |
| Manassas NBP            | 15,235          | 194,245             | 11,426    | 11,426  | 232,332   |
| Martin VanBuren NHS     | 1,276           | 6,699               | -         | -       | 7,975     |
| Mount Rainier NP        | 41,646          | 237,253             | 58,039    | 61,667  | 398,606   |
| Washington DC Parks     | 1,195,071       | 1,195,071           | 2,390,142 | -       | 4,780,284 |
| Olympic NP              | 244,005         | 292,806             | 261,899   | 193,082 | 991,792   |
| Pinnacles NM            | 11,140          | 15,596              | 4,456     | 10,398  | 41,590    |
| Pipestone NM            | 3,540           | 10,621              | 8,851     | 24,783  | 47,796    |
| Point Reyes NS          | 183,619         | 405,896             | 170,412   | 118,547 | 878,474   |
| Prince William FP       | 48,624          | 10,886              | 10,886    | 39,190  | 109,586   |
| Richmond NBP            | 16,704          | 8,660               | 27,061    | 5,412   | 57,837    |
| Scotts Bluff NM         | 15,085          | 5,657               | 9,428     | 5,657   | 35,826    |
| Shenandoah NP           | 162,887         | 217,183             | 187,320   | 62,440  | 629,830   |
| Valley Forge NHP        | 307,506         | 65,894              | 32,947    | -       | 406,348   |
| White Sands NM          | 59,309          | 44,482              | 51,896    | 51,896  | 207,583   |
| Womens Right NHP        | 832             | 9,627               | 594       | 119     | 11,172    |
| Yosemite NP             | 146,467         | 439,400             | 1,091,469 | 786,037 | 2,463,372 |
| Average                 | 121,721         | 181,940             | 227,956   | 68,179  | 599,795   |
| Max                     | 1,195,071       | 1,195,071           | 2,390,142 | 786,037 | 4,780,284 |
| Min                     | -               | 406                 | -         | -       | 3,419     |

a. Party night is defined as one travel party staying one day (for day trips) or one night (for overnight stays) in the local area in or around the park. In most cases the travel party is equivalent to the vehicle, and/or the group of people occupying a single room or campsite.

**Table 3. Average Spending by Segment, 2001<sup>a</sup> (\$ per party per day/night)**

| <b>Park</b>                    | <b>Local Day Trips</b> | <b>Non-Local Day trips</b> | <b>Motel</b> | <b>Camp</b> |
|--------------------------------|------------------------|----------------------------|--------------|-------------|
| Acadia NP                      | \$ 56                  | \$ 76                      | \$ 213       | \$ 112      |
| Antietam NB                    | 37                     | 53                         | 173          | 81          |
| BadlandsNP                     | 26                     | 36                         | 198          | 76          |
| Big Bend NP                    | 27                     | 36                         | 137          | 61          |
| Boston National HP             | 51                     | 76                         | 213          | 61          |
| Cape Cod NS                    | 56                     | 76                         | 213          | 112         |
| Delaware Water Gap NRA         | 51                     | 102                        | 254          | 127         |
| Eisenhower NHS                 | 37                     | 64                         | 217          | 71          |
| Fire Island NS                 | 56                     | 76                         | 213          | 112         |
| Fort Necessity                 | 43                     | 51                         | 183          | 76          |
| Gettysburg                     | 37                     | 64                         | 217          | 71          |
| Grand Portage NM               | 31                     | 53                         | 183          | 81          |
| Hagerman Fossil Beds NM        | 20                     | 36                         | 132          | 46          |
| Jefferson Nat'l Expansion Mem. | 41                     | 76                         | 183          | 102         |
| Maggie L. Walker               | 33                     | 41                         | 162          | 76          |
| Mammoth Cave NP                | 43                     | 51                         | 183          | 76          |
| Manassas NBP                   | 27                     | 44                         | 167          | 76          |
| Mt. Ranier NP                  | 34                     | 44                         | 203          | 41          |
| Martin van Buren NHS           | 12                     | 36                         | 127          | 57          |
| Washington DC Parks            | 56                     | 76                         | 213          | 112         |
| Olympic NP                     | 34                     | 55                         | 183          | 61          |
| Pinnacles                      | 37                     | 53                         | 173          | 112         |
| Pipestone NM                   | 27                     | 41                         | 157          | 104         |
| Point Reyes NS                 | 36                     | 76                         | 213          | 81          |
| Prince William Forest Park     | 27                     | 51                         | 178          | 57          |
| Richmond NBP                   | 33                     | 41                         | 162          | 76          |
| Scotts Bluff NM                | 27                     | 51                         | 142          | 71          |
| Shenandoah NP                  | 43                     | 76                         | 193          | 91          |
| Valley Forge                   | 37                     | 53                         | 203          | 81          |
| White Sands NM                 | 27                     | 36                         | 137          | 66          |
| Women's Rights NHP             | 31                     | 51                         | 142          | 66          |
| <u>Yosemite</u>                | <u>43</u>              | <u>51</u>                  | <u>183</u>   | <u>76</u>   |
| Average                        | 37                     | 56                         | 180          | 80          |
| Minimum                        | 12                     | 36                         | 101          | 41          |
| Maximum                        | 56                     | 102                        | 254          | 127         |

a. Visitor spending covers all spending by the travel party in the local area on a per night basis, including spending inside and outside the park

**Table 4. Total Visitor Spending by Segment , 2001 (\$ 000's)**

| Park                    | Local Day Trips | Non-Local Day trips | Motel      | Camp      | Total      | Spending per visit <sup>a</sup> | Spending per party night <sup>b</sup> |
|-------------------------|-----------------|---------------------|------------|-----------|------------|---------------------------------|---------------------------------------|
| Acadia NP               | \$ 2,831        | \$ 10,692           | \$ 107,255 | \$ 14,068 | \$ 134,846 | \$ 54                           | \$ 165                                |
| Antietam NB             | 1,215           | 1,750               | 8,380      | 823       | 12,167     | 40                              | 98                                    |
| Badlands NP             | -               | 8,167               | 7,283      | 2,571     | 18,020     | 19                              | 60                                    |
| Big Bend NP             | 525             | 640                 | 7,169      | 3,191     | 11,525     | 35                              | 81                                    |
| Boston NHP              | 2,026           | 5,051               | 25,333     | 483       | 32,893     | 17                              | 141                                   |
| Cape Cod NS             | -               | 36,506              | 224,596    | 24,549    | 285,651    | 65                              | 128                                   |
| Delaware Water Gap NRA  | 12,443          | 46,530              | 30,869     | 10,307    | 100,149    | 21                              | 111                                   |
| Eisenhower NHS          | 51              | 401                 | 6,500      | 532       | 7,484      | 100                             | 166                                   |
| Fire Island NS          | 4,854           | 8,801               | 14,101     | 1,233     | 28,989     | 44                              | 104                                   |
| Fort Necessity          | 333             | 1,186               | 651        | 252       | 2,421      | 27                              | 64                                    |
| Gettysburg NMP          | 1,222           | 14,585              | 59,682     | 7,014     | 82,503     | 46                              | 130                                   |
| Grand Portage NM        | 31              | 144                 | 3,470      | 124       | 3,770      | 46                              | 79                                    |
| Hagerman Fossil Beds NM | 31              | 26                  | 179        | 54        | 290        | 24                              | 61                                    |
| Jefferson NEM           | 12,041          | 56,734              | 43,016     | 2,394     | 114,184    | 32                              | 88                                    |
| Maggie Walker NHS       | 82              | 17                  | 74         | 4         | 177        | 17                              | 52                                    |
| Mammoth Cave NP         | 6,472           | 6,402               | 71,676     | 9,846     | 94,396     | 50                              | 118                                   |
| Manassas NBP            | 405             | 8,517               | 1,913      | 871       | 11,706     | 14                              | 50                                    |
| Martin VanBuren NHS     | -               | 239                 | -          | -         | 239        | 15                              | 30                                    |
| Mount Rainier NP        | 1,405           | 10,403              | 11,779     | 2,507     | 26,095     | 20                              | 65                                    |
| Washington DC Parks     | 67,213          | 91,397              | 509,335    | -         | 667,945    | 45                              | 140                                   |
| Olympic NP              | 8,234           | 16,123              | 47,837     | 11,775    | 83,969     | 25                              | 85                                    |
| Pinnacles NM            | 410             | 827                 | 769        | 1,162     | 3,168      | 18                              | 76                                    |
| Pipestone NM            | 94              | 433                 | 1,392      | 2,569     | 4,489      | 51                              | 94                                    |
| Point Reyes NS          | 6,572           | 31,042              | 36,314     | 9,639     | 83,568     | 38                              | 95                                    |
| Prince William FP       | 1,293           | 555                 | 1,933      | 2,231     | 6,012      | 28                              | 55                                    |
| Richmond NBP            | 547             | 353                 | 4,394      | 413       | 5,706      | 53                              | 99                                    |
| Scotts Bluff NM         | 401             | 288                 | 1,339      | 402       | 2,431      | 21                              | 68                                    |
| Shenandoah NP           | 6,996           | 16,610              | 36,116     | 5,712     | 65,433     | 44                              | 104                                   |
| Valley Forge NHP        | 11,320          | 3,494               | 6,687      | -         | 21,501     | 17                              | 53                                    |
| White Sands NM          | 1,577           | 1,588               | 7,109      | 3,429     | 13,702     | 26                              | 66                                    |
| Womens Right NHP        | 26              | 491                 | 84         | 8         | 609        | 26                              | 54                                    |
| Yosemite NP             | 6,290           | 22,403              | 199,363    | 59,920    | 287,976    | 85                              | 117                                   |
| Average                 | 4,904           | 12,575              | 46,144     | 5,565     | 69,188     | 36                              | 91                                    |
| Max                     | 67,213          | 91,397              | 509,335    | 59,920    | 667,945    | 100                             | 166                                   |
| Min                     | -               | 17                  | -          | -         | 177        | 14                              | 30                                    |

a. Spending per visit figures may be multiplied directly by recreation visits to yield total spending. These take into account re-entry factors as well as segment distributions of individual parks.

b. Spending per party night figures take into account party sizes, segment distributions, and length of stay in the area. These may be multiplied by total party nights in Table 2 to yield total spending.

**Table 5. Economic Impacts of Visitor Spending, 2001**

| Park                    | Direct effects     |                                 |        |                             | Total effects      |                                 |        |                             |
|-------------------------|--------------------|---------------------------------|--------|-----------------------------|--------------------|---------------------------------|--------|-----------------------------|
|                         | Sales<br>(\$000's) | Personal<br>Income<br>(\$000's) | Jobs   | Value<br>added<br>(\$000's) | Sales<br>(\$000's) | Personal<br>Income<br>(\$000's) | Jobs   | Value<br>added<br>(\$000's) |
| Acadia NP               | 110,611            | 38,559                          | 2,326  | 58,517                      | 160,751            | 56,712                          | 3,381  | 89,893                      |
| Antietam NB             | 9,981              | 3,479                           | 210    | 5,280                       | 14,505             | 5,117                           | 305    | 8,111                       |
| Badlands NP             | 14,356             | 4,769                           | 359    | 7,229                       | 19,077             | 6,342                           | 477    | 10,146                      |
| Big Bend NP             | 9,182              | 3,050                           | 230    | 4,623                       | 12,201             | 4,056                           | 305    | 6,489                       |
| Boston NHP              | 28,468             | 10,503                          | 445    | 16,027                      | 46,534             | 17,231                          | 727    | 27,263                      |
| Cape Cod NS             | 227,581            | 75,602                          | 5,692  | 114,594                     | 302,408            | 100,534                         | 7,563  | 160,829                     |
| Delaware Water Gap NRA  | 79,790             | 26,506                          | 1,996  | 40,177                      | 106,024            | 35,247                          | 2,652  | 56,386                      |
| Eisenhower NHS          | 6,139              | 2,140                           | 129    | 3,248                       | 8,921              | 3,147                           | 188    | 4,989                       |
| Fire Island NS          | 23,779             | 8,289                           | 500    | 12,580                      | 34,558             | 12,192                          | 727    | 19,325                      |
| Fort Necessity          | 1,929              | 641                             | 48     | 971                         | 2,563              | 852                             | 64     | 1,363                       |
| Gettysburg NMP          | 67,675             | 23,591                          | 1,423  | 35,802                      | 98,352             | 34,698                          | 2,068  | 54,999                      |
| Grand Portage NM        | 3,003              | 998                             | 75     | 1,512                       | 3,604              | 1,327                           | 100    | 2,122                       |
| Hagerman Fossil Beds NM | 231                | 77                              | 6      | 116                         | 307                | 102                             | 8      | 163                         |
| Jefferson NEM           | 98,823             | 34,926                          | 1,774  | 53,338                      | 153,289            | 54,743                          | 2,752  | 87,114                      |
| Maggie Walker NHS       | 145                | 50                              | 3      | 77                          | 210                | 74                              | 4      | 118                         |
| Mammoth Cave NP         | 75,206             | 24,984                          | 1,881  | 37,869                      | 99,934             | 33,223                          | 2,499  | 53,148                      |
| Manassas NBP            | 9,327              | 3,098                           | 233    | 4,696                       | 12,393             | 4,120                           | 310    | 6,591                       |
| Martin VanBuren NHS     | 190                | 63                              | 5      | 96                          | 253                | 84                              | 6      | 135                         |
| Mount Rainier NP        | 20,790             | 6,906                           | 520    | 10,468                      | 27,625             | 9,184                           | 691    | 14,692                      |
| Washington DC Parks     | 578,086            | 204,309                         | 10,378 | 312,012                     | 896,694            | 320,231                         | 16,098 | 509,592                     |
| Olympic NP              | 68,878             | 24,011                          | 1,448  | 36,439                      | 100,101            | 35,315                          | 2,105  | 55,977                      |
| Pinnacles NM            | 2,524              | 839                             | 63     | 1,271                       | 3,354              | 1,115                           | 84     | 1,784                       |
| Pipestone NM            | 3,682              | 1,284                           | 77     | 1,948                       | 5,351              | 1,888                           | 113    | 2,992                       |
| Point Reyes NS          | 72,325             | 26,685                          | 1,130  | 40,718                      | 118,225            | 43,778                          | 1,848  | 69,264                      |
| Prince William FP       | 4,931              | 1,719                           | 104    | 2,609                       | 7,167              | 2,528                           | 151    | 4,008                       |
| Richmond NBP            | 4,681              | 1,632                           | 98     | 2,476                       | 6,802              | 2,400                           | 143    | 3,804                       |
| Scotts Bluff NM         | 1,937              | 643                             | 48     | 975                         | 2,574              | 856                             | 64     | 1,369                       |
| Shenandoah NP           | 53,674             | 18,711                          | 1,129  | 28,395                      | 78,004             | 27,519                          | 1,640  | 43,620                      |
| Valley Forge NHP        | 18,608             | 6,866                           | 291    | 10,476                      | 30,418             | 11,264                          | 475    | 17,821                      |
| White Sands NM          | 11,240             | 3,918                           | 236    | 5,946                       | 16,335             | 5,763                           | 344    | 9,134                       |
| Womens Right NHP        | 485                | 161                             | 12     | 244                         | 644                | 214                             | 16     | 343                         |
| Yosemite NP             | 229,433            | 76,218                          | 5,738  | 115,527                     | 304,869            | 101,353                         | 7,625  | 162,138                     |
| Average                 | 57,428             | 19,851                          | 1,207  | 30,196                      | 83,564             | 29,163                          | 1,735  | 46,429                      |
| Max                     | 578,086            | 204,309                         | 10,378 | 312,012                     | 896,694            | 320,231                         | 16,098 | 509,592                     |
| Min                     | 145                | 50                              | 3      | 77                          | 210                | 74                              | 4      | 118                         |

**Table 6. Comparison of MGM2 Shortform Economic Impact Estimates for 2000 and 2001**

| Park Name               | Recreation Visits (000's) |            |             | Total Visitor Spending (\$000's) |                |             | Direct Jobs |            |             |
|-------------------------|---------------------------|------------|-------------|----------------------------------|----------------|-------------|-------------|------------|-------------|
|                         | 2001                      | 2000       | Ratio       | 2001                             | 2000           | Ratio       | 2000        | 2001       | Ratio       |
| Grand Portage NM        | 81                        | 95         | 86%         | 3,770                            | \$4,315        | 87%         | 75          | 88         | 85%         |
| Badlands NP             | 955                       | 1,106      | 86%         | 18,020                           | \$20,502       | 88%         | 359         | 417        | 86%         |
| MartinVanBuren NHS      | 16                        | 18         | 89%         | 239                              | \$265          | 90%         | 5           | 5          | 89%         |
| WomensRight NHP         | 24                        | 27         | 90%         | 609                              | \$666          | 91%         | 12          | 14         | 90%         |
| Hagerman Fossil Beds NM | 12                        | 14         | 91%         | 290                              | \$315          | 92%         | 6           | 6          | 90%         |
| Valley Forge NHP        | 1,230                     | 1,354      | 91%         | 21,501                           | \$23,219       | 93%         | 291         | 320        | 91%         |
| Point Reyes NS          | 2,223                     | 2,351      | 95%         | 83,568                           | \$86,883       | 96%         | 1,130       | 1,199      | 94%         |
| Scotts Bluff fNM        | 113                       | 119        | 95%         | 2,431                            | \$2,523        | 96%         | 48          | 51         | 94%         |
| Fort Necessity          | 89                        | 94         | 95%         | 2,421                            | \$2,504        | 97%         | 48          | 51         | 95%         |
| Pipestone NM            | 89                        | 92         | 96%         | 4,489                            | \$4,610        | 97%         | 77          | 81         | 95%         |
| Cape Cod NS             | 4,391                     | 4,581      | 96%         | 285,651                          | \$293,434      | 97%         | 5,692       | 5,966      | 95%         |
| Mount Rainier NP        | 1,301                     | 1,345      | 97%         | 26,095                           | \$26,513       | 98%         | 520         | 539        | 96%         |
| Eisenhower NHS          | 75                        | 77         | 97%         | 7,484                            | \$7,578        | 99%         | 129         | 133        | 97%         |
| Yosemite NP             | 3,369                     | 3,401      | 99%         | 287,976                          | \$286,247      | 101%        | 5,738       | 5,820      | 99%         |
| Delaware Water Gap NRA  | 4,867                     | 4,901      | 99%         | 100,149                          | \$99,036       | 101%        | 1,996       | 2,014      | 99%         |
| Washington DC Parks     | 14,938                    | 15,000     | 100%        | 667,945                          | \$660,000      | 101%        | 10,378      | 10,464     | 99%         |
| White Sands NM          | 519                       | 515        | 101%        | 13,702                           | \$13,375       | 102%        | 236         | 235        | 100%        |
| Acadia NP               | 2,517                     | 2,469      | 102%        | 134,846                          | \$130,293      | 103%        | 2,326       | 2,293      | 101%        |
| Jefferson NEM           | 3,533                     | 3,459      | 102%        | 114,184                          | \$109,822      | 104%        | 1,774       | 1,741      | 102%        |
| Mammoth Cave NP         | 1,884                     | 1,842      | 102%        | 94,396                           | \$90,854       | 104%        | 1,881       | 1,847      | 102%        |
| Olympic NP              | 3,416                     | 3,328      | 103%        | 83,969                           | \$80,454       | 104%        | 1,448       | 1,416      | 102%        |
| Shenandoah NP           | 1,499                     | 1,420      | 106%        | 65,433                           | \$60,949       | 107%        | 1,129       | 1,073      | 105%        |
| Antietam NB             | 304                       | 286        | 106%        | 12,167                           | \$11,278       | 108%        | 210         | 199        | 106%        |
| Maggie Walker NHS       | 10                        | 10         | 107%        | 177                              | \$162          | 109%        | 3           | 3          | 106%        |
| Pinnacles NM            | 178                       | 162        | 110%        | 3,168                            | \$2,832        | 112%        | 63          | 58         | 110%        |
| Fire Island NS          | 662                       | 600        | 110%        | 28,989                           | \$25,845       | 112%        | 500         | 455        | 110%        |
| Gettysburg NMP          | 1,792                     | 1,542      | 116%        | 82,503                           | \$69,876       | 118%        | 1,423       | 1,230      | 116%        |
| Manassas NBP            | 823                       | 692        | 119%        | 11,706                           | \$9,666        | 121%        | 233         | 197        | 119%        |
| Prince William FP       | 218                       | 176        | 124%        | 6,012                            | \$4,778        | 126%        | 104         | 84         | 123%        |
| <u>Big Bend NP</u>      | <u>329</u>                | <u>264</u> | <u>124%</u> | <u>11,525</u>                    | <u>\$9,123</u> | <u>126%</u> | <u>230</u>  | <u>185</u> | <u>124%</u> |
| Sum                     | 51,456                    | 51,339     | 100%        | 2,175,415                        | 2,137,915      | 102%        | 38,065      | 38,185     | 100%        |