# NATIONAL PARK SERVICE VISITATION AND INTEREST: AN UPDATE THROUGH 2009 

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## Abstract

The purpose of this paper was to examine and refute suggestions in the literature that national park visitation is on the decline. Data from a large annual national syndicated secondary dataset were examined for 2000-2009. In addition, data from Google Insights ${ }^{\mathrm{TM}}$ related to internet searches about national park vacation travel were also used as a proxy measure to determine if interest in outdoor recreation visitation to national parks had declined. While there was evidence of some decline in visitation to national parks from 2000-2009, most of the decline occurred from 2000-2004 and there was a rebound in interest from 2004 through 2009 with the exception of a dip in 2008. Data from internet search engine queries about national parks also provided insights into visitation interest. There was some decline in interest in visiting national parks for vacation travel based on search engine inquiries; however, this decline has been cyclical and is not dramatic.

### 1.0 Background and Introduction

The purpose of this paper was to address assertions by Pergams and Zaradic (2006 and 2008) that national park visitation is on the decline. Data from a large annual, national, and syndicated secondary dataset (Mediamark's Topline Research Reports) were examined for the period 2000 to 2009. An additional dataset, Google Insights ${ }^{\mathrm{TM}}$ (2011), was examined to identify trends in interest in national park visitation as reflected in Google search engine queries online. These datasets provide self-reported national park participation, visitation, and interest data from a wide range of users.

The research and review of materials in this study were partially funded by a grant from the US Forest Service Northern Research Station and cooperative agreements with the University of Massachusetts at Amherst, Texas A \& M University, and the University of Vermont.
2.0 Review of the Pergams and Zaradic (2006 and 2008) Literature

When data are collected on an annual basis in a consistently replicated manner over a long time period, trends may be examined in detail and with confidence. However, Pergams and Zaradic's (2006 and 2008) research findings on national park visitation, outdoor recreation, and use of electronic media during leisure time were not based on direct cause and effects. Instead, their conclusions were associated with selective changes in reported leisure time activities. For example, there is no direct linkage between park visitation, recreation activity pursuits, and media use interests in the initial Pergams and Zaradic study (2006). Instead, the authors arbitrarily picked data from a variety of different sources to reach their conclusions that people are spending less time visiting national parks because they are spending more time using electronic media. In addition, Pergams and Zaradic's (2006) trend analysis only extended through 2003. A number of digital media activities did not become popular until the mid- to the late-90s and even Google (2011) did not begin its trend analysis on Internet searches until January 2004. The research findings from Pergams and Zaradic (2006) also lumped all participants into one large group and then assumed that the decline in national park visitation was equally distributed across all demographic segments. Pergams and Zaradic do not account for the possibility that new generations of potential visitors may not have be introduced to the outdoors and national parks, and therefore have simply not taken the time or to learn more about these resources. Finally, interest in the outdoors among youth may be also revealed through other measurements. For example, is the interest in the Boy and Girl Scout Programs declining? Are teens traveling more or less with their parents?

By contrast, data from Mediamark's Topline Research Reports (TRR) directly links interest in visiting national parks to media use patterns and provides detailed demographic analyses of annual visitors on a consistent basis. Likewise, other data sets such as Google Insights ${ }^{\mathrm{TM}}$ provide long-term assessments of individual inquiries about national parks during vacation travel to determine if interest in parks has declined.

Since the release of the 2006 Pergams and Zaradic article, considerable attention has been given to their findings that vitiation to national parks is declining and their conclusions that this is because of increased use of electronic media. See, for example, Balmford, et al. (2009), Jacobs and Manfredo (2008), and Cordell et al. (2008). A 2009 study by Siikamäki provides evidence that contradicts Pergams and Zaradic's conclusions. Warnick et al. (2010) offer a review of these articles.

Pergams and Zaradic have not retreated from their 2006 findings and have since released a 2008 time series follow-up study that also shows a decline in overall interest in nature-based recreation and outdoor interests. The authors tested for longitudinal declines in 16 time series representing four classes of nature participation variables. The four variables with the greatest per capita participation were visits to Japanese National Parks, U.S. State Parks, U.S. National Parks, and U.S. National Forests, with an average individual participating 0.74-2.75 times per year; overall trends showed that these visits were declining. Results showed highly significant correlations between many of the highest per capita participation variables in both untransformed and difference models.
3.0 Method and Objectives

For the present study, the datasets used to examine park visitation and interest included Mediamark's Topline Research Reports (TTR) (Mediamark 2000 to 2009) and Google Insights ${ }^{\mathrm{TM}}$ (2011). The Mediamark data provides an opportunity to examine national park visitation over time to determine if the overall market size of park visitors is declining and whether various demographic segments (household income, occupation, racial status, regional location) and media use patterns (TV viewing, prime time TV viewing and Internet viewing/usage) explain changing visitation.

Descriptive variables and statistics used in this study included an average annual adjusted percent change rate. Participation rates for individuals (from $T R R$ data) were used as primary variables to examine overall visitation trends and the viewing habits and media use patterns of quintile groups. A quintile represents one-fifth or $20 \%$ of all category consumption from heaviest user group to lightest user group of, in this case, TV viewing/Internet use.

Examination of the "interest in visiting national parks during vacation searches" data from Google Insights ${ }^{\mathrm{TM}}$ (2011) was used as a proxy measure for general interest in national park visitation. This included Google searches related to both national parks and state parks crossed with the travel, adventure travel, and outdoor recreation categories on a national basis. The search analysis provided much more detailed data on a yearly and seasonal basis and comparative analyses over time. The Google Insights ${ }^{\mathrm{TM}}$ data is available for January 2004 to the present and it is also forecasted one year into the future.

Google Insights ${ }^{\mathrm{TM}}$ provides information about what people are searching for online (for example, "national park"), where they are searching from (the location), and when they are searching (time of year). With this search capability and tracking, one can spot trends and determine users' interests. The search behavior tracking allows comparisons within categories by the selected terms and identifies peaks in interest in various topics.

Changes in national park visitation rates were compared to national percentage changes in population growth and online search behavior through a normalization process (Google Insights ${ }^{\text {TM }} 2011$ ). Search numbers are provided on a graph by the term "national park" and are normalized and presented on a scale from 0-100 (see Google Insight 2011 for detailed description). Comparisons for searches on "national park" are completed relative to the travel, the adventure travel, and the outdoor recreation categories. One additional search analysis was also performed, "state park," as a search relative to the travel category. The Google Insights ${ }^{\mathrm{TM}}$ (2011) data are also normalized by search results, which means that they divide the sets of data by a common variable to cancel out the variable's effect on the data. Their perspective is that this allows the underlying characteristics of the data to be compared and normalized or "indexed" for comparative purposes. If the data were not normalized and if the results displayed the absolute rankings instead, data from geographic regions generating the most search volume would always be ranked high.

### 4.0 Results from the Mediamark's Topline Research Reports Data

The data are condensed here for publication purposes and the full tables and graphs may be obtained from the authors. As a reference point for the analysis the $\operatorname{TRR}$ data, the estimated U.S. population increased at an average adjusted rate of $1.3 \%$ per year from 2000 to 2009.

### 4.1 National Park Service Visitation Trends, 2000 to 2009

According to the the $T R R$ data, the participation rates of individuals who visited any national park(s) annually declined slightly from 2000 to 2009 at an average annual participation rate of $-0.4 \%$ per year while the actual number of visitors to national parks was estimated at 11.92 million individuals for 2000 and 12.6 million for 2009 (growth of $0.7 \%$ per year). The overall trend was not simple decline as the rates varied over the time period (See Table 1). So, if there is growth in numbers and decline in participation rates and visits, people who are going to national parks are simply going less often and the growth in visits is not keeping up with overall population growth. This explains why the participation rate declines: the number of visitors increases but per capita visitation decreases.
4.2 National Park Service Visitation Trends by Adult Age Groups, Education Status, and Racial Status, 2000 to 2009

Participation rates and estimated numbers of visitors to national parks are not evenly distributed across the age profile of Americans. Participation rates declined the most among young adults age 18 to 24 (decline of $1.1 \%$ ). Rate changes among other age groups were negligible and rates actually grew for adults 25-34 year olds (increase of $0.4 \%$ ) and adults 55 years of age and older (increase of $0.7 \%$ for $55-64$ year-olds and $0.8 \%$ for 65 and older). The market size or pool of visitors tells a slightly different story. For example, in 2000, an estimated 643,680 visitors to national parks were $25-34$ years old and in 2009, an estimated 729,060 visitors were this age. While these numbers have increased, the participation rates for nearly all groups age 35 and older were higher than the national average.

In general, the more well-educated the population, the more likely it is that individuals will visit a national park. Those who attend or graduate from college are more likely to visit a national park than those less educated; those who have gone beyond an undergraduate degree are most likely to visit a national park. In 2000, there was a nearly three-fold difference in visitation rates between visitors who had college or graduate degrees ( $9.0 \%$ visitation rate) and those who did not graduate from high school ( $3.1 \%$ visitation rate). By 2009, the visitation rate for college-educated individuals was $8.9 \%$ and among the non-high school educated segment was $2.1 \%$ - a more than four-fold difference.
4.3 National Park Service Visitation Trends by Occupational Status, 2000 to 2009

Between 2000 and 2009, national park visitation rates declined the most among adults who were from professional positions (decline of $1.2 \%$ ) but this segment still has the highest overall visitation rates. Visitation by those in the precision, crafts, and repair service occupations also declined (an average decline of $0.8 \%$ ). The participation rates among adults who held positions in executive/administration/managerial occupations actually increased the most ( $1.0 \%$ increase annual average).
4.4 National Park Service Visitation Trends by Regions, 2000 to 2009

National park visitation rates declined the most among adults who lived in the South, from $6.3 \%$ in 2000 to $4.7 \%$ in 2009 . Participation rates actually grew in the Northeast by an average of $1.2 \%$ per year and in the North Central Region by an average of $1.6 \%$ per year.
4.5 National Park Service Visitation Trends by Household Income, 2003 to 2009

Participation rates declined the most among adults who were from households with gross incomes of $\$ 50,000$ to $\$ 59,999$ (decline of $3.4 \%$ ). Rates were highest among those from households with incomes of $\$ 150,000$ per year or more $(9.9 \%$ in 2008 and $8.2 \%$ in 2009). Overall, the rates appeared to peak around 2007-2008 before substantial declines among all income levels in 2009. The wealthiest households had national parks visitation rates of $9.7 \%$ in 2003 and $8.2 \%$ in 2009 while those in the lowest income category reported here (less than $\$ 20,000$ per year) had visitation rates of $1.4 \%$ in 2003 and $1.3 \%$ in 2009.
4.6 National Park Service Visitation Trends by Racial Status, 2000 to 2009

Participation rates declined the most among Black or African American adults (an average of $7.2 \%$ per year), down from $2.8 \%$ in 2000 to $1.1 \%$ in 2009. Rates also declined among Asian Americans from $6.7 \%$ in 2001 to $5.6 \%$ in 2009. Rates were relatively stable among white or Caucasian Americans. Rates within Hispanic or Spanish-speaking households fluctuated the most. The influx of "other racial groups" was also evident in the overall annual change rate of $14.1 \%$ for the period - in 2001, the national park visitation rate among those from "other racial groups" was $4.9 \%$ and by 2009 it was $7.1 \%$.
4.7 National Park Service Visitation Trends by TV Viewing Quintile Groups, 2000 to 2009

For those who watched the most television, National Park Service visitation rates did decline between 2000 and 2009 at an average rate of $1.8 \%$ per year. Those who watched television the least indicated that their visitation rates increased from $6.6 \%$ in 2000 to $7.6 \%$ in 2009. National park visitation rates declined during the period across the two groups that watched the most television but actually grew among the three groups that watched the least television. Similar trends were noted among the prime time viewing habits of U.S. adults and their visitation rates to national parks. National park visitation rates among adults who watched the most prime time television declined from $5.3 \%$ in 2001 to $2.8 \%$ in 2008. Among those who watched the least prime time television, average annual national park visitation rates actually grew from $6.5 \%$ in 2001 to $7.6 \%$ in 2009.
4.8 National Park Service Visitation Trends by Internet Use Quintile Groups, 2004 to 2009

Data for assessing Internet use and park visitation are available only for 2004 through 2009. Among those who used the Internet the most, park visitation rates declined at an average annual rate of $3.8 \%$. National park visitation rates among those who used the Internet the least peaked in 2007 at $3.2 \%$ but, overall, the average annual change was $2.5 \%$ per year. Four of five Internet use quintile groups experienced an increased participation rate during this period but these rates fluctuated and peaked with the 20062007 years.

## <Insert Table 1 about here>

### 5.0 National Park Service Searches and Google Insights ${ }^{\text {TM }}$

Baseline measures in Google Insights ${ }^{\mathrm{TM}}$ also compared "national park" inquiries to "vacation searches" as relative measures of the category search behavior. This data provides a proxy measure of individual interest in national parks. Figure 1 shows that interest in national parks as part of an Internet travel search has generally declined. This search behavior is clearly seasonal with typical peaks in interest for "national parks" in May/June and sometimes in August; this pattern holds from year to year.

## <Insert Figure 1 about here>

When the search term "national park" is compared within the travel search categories, there is an indication that these searches decreased as a percentage of the overall search volume between 2004 and 2009; most of this decrease occurred after 2006. One exception to this decline occurred in or around the first quarter of 2009 and is attributed to the impact of Ken Burns's PBS series on the national parks. When the data are normalized and compared to the overall travel category, the graphic trend suggests that interest in "national park" as a search term has declined only slightly - falling in relative terms (related to the overall number of searches) and is possibly a result of declines in overall searches related to travel. However, during the peak seasons for national park searches mentioned above, the term "national park" exceeded interest in the general travel category in six of the eight years reviewed. See Figure 2.

## <Insert Figure 2 about here>

Additional analyses were conducted on the search terms "national park" and "state park" related to adventure travel and outdoor recreation in the Google Insight ${ }^{\mathrm{TM}}$ data. These findings are available from the authors and are not presented here due to space limitations. According to these analyses, there is no evidence of widespread decline in these searches over time.
6.0 Conclusion, Discussion and Implications

Participation rates for visitation to national parks from the period of 2000-2009 have declined but the decline during this period has been slight and is not uniform across all demographic variables. There are very different penetration or participation rates within demographic variables for visitation to national parks. Furthermore, the overall market size of visitors actually increased every year between 2004 and 2009 with the exception of 2008. Annual visitation to the parks has remained largely in the range of 11-12 million people. This includes all visitors who have indicated at least one visit to a national park in the previous 12-month period. This suggests that the decline has actually been in the volume of visits per capita and not in the number of people interested in and actually visiting national parks. It would appear that visitation rates are not increasing overall as the population increases but the Google Insights ${ }^{\text {TM }}$ data suggests that interest is not declining overall. This would seem to suggest that part of the decline in visitation may be reflected in the findings by Siikamäki (2009) who noted that reduced time-use by active participants has occurred while participation rates have not changed substantially.

While there is some support for the decline in visitation to national parks as noted by Pergams and Zaradic (2006), the decline in the most recent decade is not dramatic. While the overall volume may be the confounding issue here, the declines are not equally distributed across all demographic variables and media use levels. There also appears to be some fluctuation in the visitation rates over time. However, when the data related to internet searches about national parks are examined, there is no widespread decline in either interest in this activity or related declines in travel, outdoor recreation, or state park interests. While not fully examined here, some of the interest in park visitation may have shifted to state parks and related outdoor recreation interests. The findings of this study also suggest that interest in national park visitation is typically seasonal; therefore, and the timing of data collection is critical. In addition, the measures of Internet use in the TRR data are not at all conclusive in terms of their relationship to park visitation. While heavy media users did show declines in park visitation, most of the TV viewing and Internet user groups’ visitation rates did not decline. The conclusions seem to suggest that the causes of national park visitation declines cannot be explained by associated increases in other activities such as passive media use. More research is needed on these topics and it is possible that future research needs to directly ask participants why they are visiting national parks less often than they used to.

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Table 1. Visitation to National Parks: 2000 to 2009


Proceedings of the Northeastern Recreation Research Symposium, 2011

| Race: White | 6.3 | 6.6 | 8.1 | 6.4 | 5.9 | 6.1 | 6.3 | 6.5 | 6.1 | 6.4 | 0.8\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Race: Black | 2.8 | 3.2 | 2.3 | 2.3 | 2.0 | 2.7 | 2.3 | 1.4 | 1.0 | 1.1 | -7.2\% |
| Race: Asian |  | 6.7 | 4.5 | 5.0 | 6.8 | 6.9 | 5.9 | 6.0 | 4.2 | 5.6 | 0.8\% |
| Race: other |  | 4.9 | 4.8 | 2.0 | 3.7 | 3.5 | 3.4 | 3.1 | 5.3 | 7.1 | 14.1\% |
| Spanish Speak English Hshld | 4.8 | 4.3 | 5.7 | 3.4 | 1.4 | 4.1 | 4.5 | 4.2 | 2.9 | 3.7 | 12.8\% |
| Internet Volume Use by Quintile: | 2000 | $\underline{2001}$ | $\underline{2002}$ | 2003 | $\underline{2004}$ | 2005 | $\underline{2006}$ | 2007 | 2008 | $\underline{2009}$ | ${ }^{\prime} 04-09$ |
| Internet Quintile I (Heavy) |  |  |  |  | 8.2 | 8.1 | 7.3 | 7.8 | 7.3 | 6.7 | -3.8\% |
| Internet Quintile II |  |  |  |  | 6.7 | 7.5 | 7.9 | 6.6 | 6.6 | 7.5 | 2.9\% |
| Internet Quintile III |  |  |  |  | 6.5 | 5.9 | 6.0 | 6.5 | 6.0 | 6.6 | 0.6\% |
| Internet Quintile IV |  |  |  |  | 2.6 | 3.4 | 3.7 | 4.0 | 4.0 | 4.5 | 12.0\% |
| Internet Quintile V (Light) |  |  |  |  | 2.5 | 2.7 | 3.0 | 3.2 | 2.2 | 2.6 | 2.5\% |
| TV Viewing by Quintile: | 2000 | $\underline{2001}$ | $\underline{2002}$ | $\underline{2003}$ | $\underline{2004}$ | 2005 | $\underline{2006}$ | $\underline{2007}$ | 2008 | $\underline{2009}$ | '00-09 |
| TV (Total) Quintile I (Heavy) | 3.9 | 4.1 | 5.7 | 3.9 | 3.4 | 3.4 | 3.4 | 3.8 | 3.0 | 2.8 | -1.8\% |
| TV (Total) Quintile II | 5.6 | 5.8 | 7.4 | 5.1 | 4.2 | 4.8 | 5.6 | 4.5 | 4.6 | 4.3 | -1.2\% |
| TV (Total) Quintile III | 6.2 | 6.3 | 5.9 | 6.0 | 6.0 | 6.4 | 6.3 | 6.4 | 6.0 | 6.6 | 0.8\% |
| TV (Total) Quintile IV | 7.2 | 7.0 | 4.9 | 5.8 | 6.9 | 6.2 | 6.1 | 6.6 | 5.7 | 6.6 | 0.3\% |
| TV (Total) Quintile V (Light) | 6.6 | 7.6 | 3.4 | 8.4 | 6.0 | 6.8 | 6.4 | 6.8 | 6.8 | 7.6 | 11.5\% |
| TV Viewing Primetime by Quintile: | $\underline{2000}$ | $\underline{2001}$ | $\underline{2002}$ | $\underline{2003}$ | $\underline{2004}$ | $\underline{2005}$ | $\underline{2006}$ | $\underline{2007}$ | $\underline{2008}$ | $\underline{2009}$ | '01-09 |
| TV (Primetime) Quintile I (Heavy) |  | 5.3 | 5.2 | 4.7 | 4.2 | 4.3 | 4.6 | 4.4 | 3.5 | 2.8 | -7.2\% |
| TV (Primetime) Quintile II |  | 5.7 | 5.6 | 5.3 | 5.0 | 5.8 | 5.1 | 5.7 | 5.9 | 4.3 | -2.6\% |
| TV (Primetime) Quintile III |  | 5.9 | 7.1 | 6.0 | 6.4 | 5.4 | 6.0 | 5.8 | 5.3 | 6.6 | 2.4\% |
| TV (Primetime) Quintile IV |  | 7.5 | 8.1 | 6.1 | 5.6 | 5.8 | 6.4 | 6.7 | 5.6 | 6.6 | -0.6\% |
|  |  |  |  |  |  | 6.3 | 5.7 | 5.6 | 5.6 | 7.6 | 5.4\% |
| Source: Mediamark's Topline Research Reports, 2000 to 2009; interpretation of data by authors. Change <br> Rate $=$ Average annual change rate from 2000 to 2009. |  |  |  |  |  |  |  |  |  |  |  |

Figure 1. Searches for "National Park" in Travel Category in US, 2004-Present (Source Google Insights ${ }^{\text {TM }}$, 2011)
Web Search Interest: national park

| United States, 2004 - present | Totals | (3) |
| :---: | :---: | :---: |
| All Categories > Travel | national park | 56 |

Subcategories: Attractions \& Activities (75-100\%), Hotels \& Accommodations (0-10\%) , more...


Figure 2. Searches for "National Park" Relative to Travel Searches in US, 2004-Present (Source Google Insights ${ }^{\text {TM }}$, 2011)

Web Search Interest: national park
United States, 2004 - present
All Categories > Travel

| Totals | (3) |
| :--- | :--- |
| national park | 56 |

Subcategories: Attractions \& Activities ( $75-100 \%$ ), Hotels \& Accommodations ( $0-10 \%$ ) , more...


