

# **Initial Season of the Going-to-the-Sun Road Shuttle System at Glacier National Park: Visitor Use Study**



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## **Executive Summary**

The research presented here is phase three of an ongoing research project at Glacier National Park. In the first two phases (completed in the summers of 2005 and 2006), visitors were observed and interviewed at 17 pullouts and high-use areas on the Going-to-the-Sun road. This phase of the project was conducted during the summer of 2007 and focused on why visitors chose to use the transit system and their satisfaction with it.

Visitors participating in the study were contacted in the Apgar Village area or at Logan Pass between August 18, and September 3, 2007. Participants were predominantly white (96.8 percent), and highly educated (59 percent reporting obtaining a bachelor's degree or higher). Ninety percent of participants were either employed or retired (50 percent and 40 percent respectively). The mean group size among participants was 3.53. Additionally, 68 percent of visitors reported being in a "family" group.

Participants spent an average of 3.7 days visiting Glacier National Park. In addition, 60 percent of visitors reported staying one or more nights inside of the park with an average stay of 2.4 nights.

Visitors rated the importance of achieving a series of Recreation Experiences while in Glacier National Park. The experiences cited as most important to visitors were: to see scenic beauty, to be close to nature, and to see wildlife.

Over 50 percent of participants planned to engage in the following activities while in the park: auto touring, watching wildlife, going to visitor centers, photography, walking, hiking, and dining out.

Visitors also reported hiking to a variety of destinations. The most popular hiking destinations reported by participants were: Hidden Lake, Avalanche, and the Highline Trail.

Almost half of survey respondents who rode the shuttle during their visit reported using the shuttle every time they traveled the Going-to-the-Sun Road during their visit (49 percent). The three most commonly cited purposes for riding the shuttle were: to view scenery, to access a trailhead for hiking, and to tour the road.

Thirty-six percent of visitors who reported using the shuttle during their visit to the park also reported using it to take loop hikes. The most frequently reported shuttle stops from which visitors began loop hikes were: Logan Pass, St. Mary Falls, and The Loop. The most frequently reported shuttle stops for ending loop hikes were: The Loop, Logan Pass, and Sunrift Gorge.

Riders and non-riders were very similar. Significant differences between the three groups were found with respect to experience preference, and group size (including number of small children).

Shuttle riders tended to travel in smaller groups, had fewer smaller children and were more physically active within the park. They also placed a greater emphasis in seeing scenic beauty and being in a place that is quiet. Non-riders placed greater emphasis on being in control of things that happened during their visit.

Riders expressed positive evaluations of the shuttle system and rated it as good to excellent. Similarly, participants rated both shuttle system information (with the exception of traveler radio and \*511 cellular service), comfort and cleanliness of buses, service provided by shuttle drivers, and shuttle system operations as good to excellent.

Visitors participating in this study were similar to those participating in the studies conducted during 2005 and 2006 with respect to group size, group type, and length of stay in the park. Additionally, visitors' state of origin was consistent across the three studies.

## Table of Contents

Purpose.....	3
Description.....	4
Methodology.....	5
Survey Instrument.....	5
Sampling Procedures .....	6
Response Rates .....	7
Non-response Bias Check.....	7
Limitations .....	8
Results.....	9
Who are the Glacier National Park Visitors?.....	9
State of Origin.....	9
Social Demographics .....	9
History of Alternative Transportation Use .....	9
Group Characteristics.....	13
Group Size .....	13
Group Members with Limited Physical Ability.....	13
Membership in Organized Groups.....	13
Trip Characteristics.....	16
Ownership of National Park Service Entrance Pass .....	16
Where did Visitors Stay while Visiting Glacier National Park?.....	16
Length of Stay in Glacier National Park.....	16
How do Respondents Compare to Those Surveyed in the 2005-2006 Studies?.....	19
What Types of Activities and Experiences do GNP Visitors Desire? .....	19
What Factors do Visitors consider when making Decisions on Shuttle Use? .....	23
Attitudes about riding the shuttle.....	23
The Influence of Other People.....	24
Control .....	25
How did Visitors use the Shuttle at Glacier National Park?.....	28
For What Purposes did Visitors Ride the Shuttle?.....	28

Where Did Visitors Board the Shuttle? .....	28
Where did Visitors get Off the Shuttle?.....	28
How did Visitors use the Shuttle for Loop Hikes? .....	28
How are Visitors Who Ride the Shuttle Similar/Different than Those Who Choose Not to Ride the Shuttle?.....	33
Riders Preferred Different Types of Experiences than Non-Riders .....	33
Shuttle Riders are in Smaller Groups than Non-riders .....	33
Shuttle Riders were traveling with Fewer Small Children .....	33
Shuttle Riders Planned to Engage in Different Activities than Non-riders .....	34
How did riders evaluate shuttle system information?.....	36
How did riders evaluate shuttle system service? .....	40
Appendix A: Onsite Questionnaire.....	43
Appendix B: Mail-back Questionnaire .....	52
Appendix C: Contact Script.....	60
Appendix D: Reminder Postcard .....	61

## List of Figures

<i>Figure 1: Going-to-the-Sun Road Transit Map</i> .....	2
<i>Figure 2: Highest Level of Education as Reported by Survey Respondents</i> .....	11
<i>Figure 3: Employment Status of Respondents</i> .....	11
<i>Figure 4: Frequency of Public Transportation Use at Home as Reported by Survey Respondents</i> .....	12
<i>Figure 5: Household Income of Survey Participants</i> .....	12
<i>Figure 6: Group size as indicated by survey respondents</i> .....	14
<i>Figure 7: Group type of survey respondents</i> .....	14
<i>Figure 8: Reported Ownership of National Park Service Entrance Pass</i> .....	17
<i>Figure 9: Number of Nights Spent in the Park by Respondents</i> .....	18
<i>Figure 10: Number of Days in Park as Reported by participants</i> .....	18
<i>Figure 11: Frequency of Shuttle Use as Reported by Shuttle-Riding Participants</i> .....	29
<i>Figure 12: Visitor Evaluations of Shuttle System Information</i> .....	38
<i>Figure 13: Rider Evaluations of Availability and Understandability of Shuttle System Information</i> .....	39
<i>Figure 14: Rider Evaluations of Buses</i> .....	41
<i>Figure 15: Rider Evaluations of Drivers</i> .....	41
<i>Figure 16: Rider Evaluations of Shuttle Service Operation</i> .....	42

## List of Tables

<i>Table 1: State or Province of Residence</i> .....	10
<i>Table 2: Percent of Survey Respondents by Race</i> .....	10
<i>Table 3: Reasons Cited by Thirty-four Percent of the Visitors for Ability to Walk Limited Distances</i> .....	15
<i>Table 4: Location of Lodging as Reported by Survey Respondents</i> .....	17
<i>Table 5: Group Size and Night Spent in Park as Reported by Participants in Study Phases 1-3 (2005-1007)</i> .....	19
<i>Table 6: Recreation Experience Preference</i> .....	20
<i>Table 7: Activities Planned by Visitors While Visiting Glacier National Park</i> .....	21
<i>Table 8: Top 25 Anticipated Hiking Destinations as Reported by Survey Participants</i> ...	22
<i>Table 9: Visitors' Beliefs and Evaluations of Possible Outcomes of Shuttle Use at Glacier National Park</i> .....	26
<i>Table 10: Participants' Impressions of Beliefs of Important Others Regarding Shuttle Use</i> .....	27
<i>Table 11: Visitor Evaluations of Factor Which Could Facilitat or Restrict Shuttle Use at Glacier National Park</i> .....	27
<i>Table 12: Reasons Cited by Participants for Using the Going-to-the-Sun Shuttle System</i> .....	30
<i>Table 13: Location Where Visitors Initially Boarded the Shuttle</i> .....	30
<i>Table 14: Locations where Visitors Got Off the Shuttle</i> .....	31
<i>Table 15: Shuttle Stop from Which Visitors Began Their Loop Hike</i> .....	31
<i>Table 16: Shuttle Stops Where Visitors Loop Hikes Ended</i> .....	32
<i>Table 17: Experience Types Desired by Riders/Non-riders</i> .....	34
<i>Table 18: Proportion of Rider/Non-riders engaging in Specific Activities</i> .....	35
<i>Table 19: Percent of Visitors Accessing Specific Sources of Information on the GTSR Shuttle System</i> .....	37

## Introduction

The Going-to-the-Sun Road (GTSR) is the primary road through and a featured attraction of, Glacier National Park (GNP). Completed in 1932, the road connects the east and west entrances of the park and allows visitors to traverse the variety of ecosystems that exist within the park. A featured attraction of GNP, the GTSR is designated as a National Historic Landmark and approximately 475,000 vehicles per year travel the GTSR.<sup>1</sup>

In 2003, GNP issued a Record of Decision on the rehabilitation of the Going-to-the-Sun Road. The project, which is projected to take seven to eight years, began in 2007 and is intended to rehabilitate the GTSR in a way that preserves its historic character while:

- Minimizing effects on natural, cultural, and scenic resources
- Maintaining a world-class visitor experience
- Providing for visitor and employee safety
- Minimizing the impacts to the local and regional economy

As part of the comprehensive plan to mitigate the effects of the GTSR rehabilitation project on park visitors, businesses and tourism, GNP implemented a free, voluntary, park-operated shuttle bus system along the GTSR. In its initial year of operation (2007), the GTSR shuttle system included three routes (figure 1) with a total of 17 shuttle stops and two transit centers.<sup>2</sup> The system was served by a total of 29 buses.

The west side of the park was serviced by the Apgar Route (the green route) and the Lake McDonald Valley Route (the blue route). The west side routes were primarily serviced through the use of 22 Daimler Chrysler/Dodge Sprinters (12 passenger capacity) chosen

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<sup>1</sup> See (2003). United States Department of Interior National Park Service. Record of Decision: Rehabilitation of the Going-to-the-Sun Road Glacier National Park.

<sup>2</sup> The new, LEEDS certified Apgar Transit Center and information kiosks within the St. Mary Visitor Center.



for their ability to conform to the vehicle size restrictions in place on the alpine section of the road. Two additional buses owned by GNP prior to the shuttle system also served the west side of the park.

The east side of the park was serviced by the St. Mary Valley Route (the red route). The west side route was primarily served through the use of 5 converted snow coaches (approximately 24 passenger capacity) borrowed from Yellowstone National Park<sup>3</sup>.

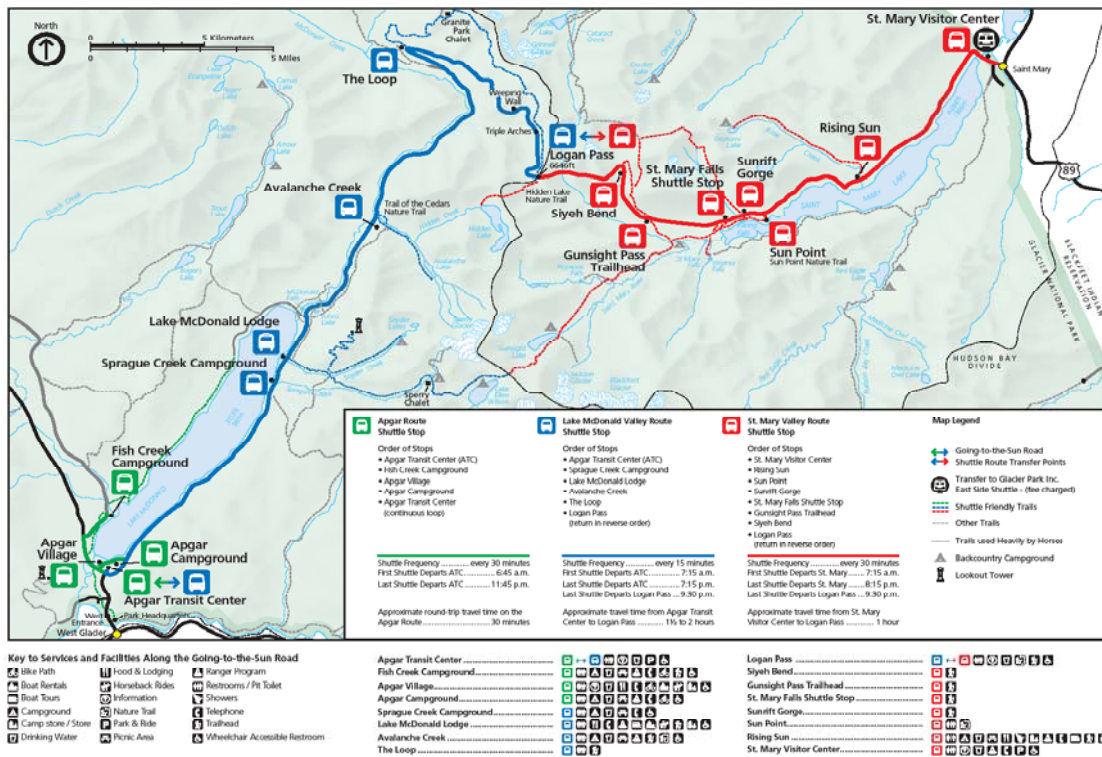


Figure 1: Going-to-the-Sun Road Transit Map

The GTSR shuttle system was operational from July 1 (the day the road opened) through Labor Day (September 3). The initial ridership goal for the GTSR shuttle system was 800

<sup>3</sup> Originally, the east side of the park was supposed to be serviced by Optimas buses (23 passenger capacity with additional room for 24 standing passengers). Delivery of these buses was delayed with the first Optimas arriving at the park during the last week of the shuttle season.

to 1,600 rides per day. Over the course of the season, the shuttle system provided 132,093 rides (approximately 2,000 per day) to GNP visitors who collectively traveled 335,632 miles with supply far exceeding anticipated demand. Ridership was heavily weighted toward the west side of the park with 61 percent (80,626) of boardings on the west side and 39 percent (51,467) of boardings on the east side.<sup>4</sup>

### ***Purpose***

The first year of implementation of the transit system at GNP presents many opportunities for understanding the effects of the significant change in how visitors travel through the park as a result of the availability of mass transportation. While the transit system was effective in removing vehicles from the road, thus meeting one of the original goals of mitigation, its overwhelming popularity among park visitors presented many challenges not only to managers of the transit system but to park management in general.

Changes in visitor flow created by road construction and shuttle use can create undesirable impacts on recreation experiences, park values and key biophysical attributes. Transit systems, such as the one implemented at GNP during the summer of 2007, change visitation patterns at trailheads and developed areas by delivering visitors in “pulses” as opposed to previous patterns of use. Additionally, areas where capacity was once restricted by available parking are now subject to increasing numbers of visitors who use the shuttle service to access these sites.

Furthermore, the system remains in a state of evolution. During the process of development and refinement for future years, additional buses and ITS technology will be added to the system, some shuttle stops will be improved and others redesigned, and routes may be changed to reflect visitor use patterns.

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<sup>4</sup> Ray Tinkey, Report to Glacier National Park Management Working Group, October 16, 2007.

To plan for these changes, it is important to understand both the visitors who used the system as well as those who chose not to. To this end, this project is intended to provide park managers with an understanding of the types of visitors who used the system, how they used it, and their evaluations of the service provided.

The study presented here examined the intersection of the experiences sought by park visitors and the experience of riding a shuttle in Glacier National Park. More specifically, the objectives of the study are:

- To provide general documentation of visitors' perceptions and use of the Going-to-the-Sun Road shuttle system during its first year of operation to park and shuttle system managers.
- To test a predictive model of visitors' decisions regarding shuttle use at a national park within the context of their desired recreation experiences and activities.

### ***Description***

The findings presented here will provide managers with information on the effects of the shuttle system on visitor experience during its initial season. The fundamental questions addressed in this report are: How did visitors use the Going-to-the-Sun road shuttle system at Glacier National Park? What differences exist between those who chose to ride the shuttle at GNP and those who chose not to? And for visitors who did ride the shuttle, how did they evaluate that part of their park experience?

## **Methodology**

This study used a self-administered survey comprised of two instruments: an onsite questionnaire and a take-home questionnaire. A sample of GNP visitors was drawn during pre-determined and randomly chosen sample locations, days, and times between August 18 and September 2, 2007. Survey methods were based upon a modified Tailored Design Method.<sup>5</sup> Finally, statistical analysis was performed using the Statistical Package for the Social Scientists (SPSS) version 13.0.

### ***Survey Instrument***

The questionnaires were constructed combining and modifying aspects of pre-existing instruments that had been previously tested for validity and reliability. Questionnaire items were submitted to GNP managers and the United States Office of Management and Budget for refinement and approval.

Once developed, the survey instruments were pre-tested twice. The first pre-test was a participatory test conducted with a group of 9 graduate students from the University of Montana. This test resulted in a small number of changes to the questionnaire with respect to question wording and formatting for clarity. The second pre-test was a field test consisting of 9 visitors to Glacier National Park conducted to estimated burden time of the questionnaires<sup>6</sup>.

The onsite survey instrument (Appendix A) consisted of 25 questions and had an estimated visitor burden time of ten minutes. The onsite questionnaire included questions on trip characteristics, group characteristics, desired recreational experience, and visitors' perceptions of the shuttle system.

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<sup>5</sup> Dillman, D.A. (2000). *Mail and internet surveys: The tailored design method*, New York, NY: John Wiley & Sons.

<sup>6</sup> Office of Management and Budget rules constrict sample sizes to nine on instruments that have not been approved.

The take-home questionnaire (Appendix B) was comprised of 24 questions and had an estimated burden time of approximately six minutes. Questions included in the second questionnaire were centered on visitor use of the shuttle system and visitor demographic data. The format of the questions on both instruments included fixed choice, Likert scale, and open-ended questions.

### ***Sampling Procedures***

Since the GTSR shuttle system was designed to remove ten percent of vehicles from the road, the sample plan was designed to maximize the likelihood of balancing the number of shuttle riders and non-riders in the sample. Also, due to the condensed sample schedule, sampling was conducted in high-use areas to ensure an appropriate sample size. Therefore, sample locations for this study included the Apgar Village Area (including the Apgar Visitor Center, Apgar Transit Center and Apgar Campground) and the area surrounding the Logan Pass Visitor Center (Including the Logan Pass Shuttle Stop).

Sampling was conducted during each day of the sample period. Sample times were first designated by morning (8:00 am – 2:00 pm) and afternoon (2:00 pm to 8:00 pm) shifts. To construct the sampling plan, daily sample locations were selected randomly without replacement. Then, sample times were chosen at random for the first sample day in each location. Sample times for subsequent days were rotated for each location. Once on site, field researchers approached as many people as possible during the assigned sampling days/times. Only one adult member per household was selected to participate in the study (by selecting the person whose birthday was closest to the date of contact).

Visitors were approached onsite and asked, using a script (Appendix C), to participate in the study. IF they agreed, they were given a clipboard containing a postcard (Appendix D), the onsite questionnaire, and a postage paid envelope containing the mail-back questionnaire. Visitors were asked to fill out their name and address on the postcard and then fill out the on-site questionnaire. When visitors had completed the on-site questionnaire, the field researcher collected the completed questionnaire and postcard and

instructed the participant to complete and mail the follow-up questionnaire at the conclusion of their trip. (Visitors could also leave the completed questionnaire at visitor centers or with campground hosts.)

### ***Response Rates***

Eighty-six percent of the 585 contacted on-site agreed to participate in the study. Of the 502 who agreed to participate, 11 had undeliverable addresses and an additional 14 refused to provide an address. One hundred and eighty-seven participants responded to the mail-back survey without any further contact for an initial response rate of 37 percent. Response rates increased after each of a series of mailings. Specifically, 60 participants responded after receiving the replacement postcard, 95 responded after receiving a replacement questionnaire, and 34 responded upon receiving a second replacement questionnaire. The final response rate was 75 percent (376 completed surveys, margin of error +/- 5 percent<sup>7</sup>) of those who agreed to participate in the study or 64 percent of all visitors contacted.

### ***Non-response Bias Check***

To assess if any response bias existed, comparisons were made between participants and non-participants as well as participants who did/did not return the mail-back questionnaire. Data on group size and group type were recorded for visitors who refused to participate in the study by field researchers for use in calculating non-response bias. Questions contained in the on-site questionnaire were used to determine non-response bias between those who did and did not return the second survey.

No significant differences were found with respect to the type of personal travel group among participants and non-participants. Differences were found, however, in the mean size of personal travel group with participants belonging to a slightly larger personal

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<sup>7</sup> Welch, S. and Comer, J. (1988). Quantitative methods for public administration, 2<sup>nd</sup> ed. The Dorsey Press. Chicago, IL.

travel group than non-participants (mean group size of 3.64 and 2.88 respectively,  $t=5.49$ ,  $P<0.05$ ).

Significant differences were also found between survey participants who did and did-not respond to the mail-back survey. Respondents, on average, were members of smaller personal travel groups (average 3.36 for respondents and 4.45 for non-respondents). Additionally, respondents reported longer stays in the park (average 3.83 days for respondents compared to 3.15 days for non-respondents). Finally, respondents reported a higher intention to ride the free, park-operated shuttle in GNP than non-respondents (mean scores of 4.23 and 3.14 respectively on 1-7 Likert scale with 1 be very unlikely to ride and 7 being very likely to ride).

### ***Limitations***

As with any study employing on-site sampling, sampling only park visitors excludes those individuals who are perhaps displaced from the park for various reasons. In addition, because of a protracted OMB approval process, sampling was done during a condensed (16-day) sampling period that may have excluded groups that visit the park during other times.

Also, since sampling was concentrated on the west side of the park, visitors accessing only areas of the park east of (but not including) Logan Pass were not sampled. It should be noted, however, that 53 percent of participants who indicated that they had used the shuttle during their visit also indicated using one or more shuttle stops east of Logan Pass.

Additionally, since the system was designed to accommodate only a small percentage of visitors to the park, the sample plan was designed to maximize the number of shuttle riders sampled and thus balance the sample between riders and non-riders. Thus, shuttle riders were over sampled while non-riders were over sampled. Therefore, results of this study may be more generalizable to riders than non-riders. However, that very few differences existed between the two groups.

## Results

### ***Who are the Glacier National Park Visitors?***

#### State of Origin

Visitors were asked to provide their state, province or country of residence. The top three reported states of residence were Montana, Washington, and California with the fourth largest group coming from Alberta, Canada (Table 1).

#### Social Demographics

Survey respondents were 53.3 percent male and 46.7 percent female. Additionally, 96.8 percent of survey respondents were white (Table 2) and 1.2 percent of respondents identified themselves a Hispanic or Latino. In addition, thirty percent of survey respondents reported obtaining a graduate or professional degree and 29 percent indicated having a four-year college degree (Figure 2). Fifty percent of survey respondents reported being employed and an additional 40 percent reported being retired (Figure 3). Finally, Twenty-three percent of survey participants reported having household income of \$100,000 or more per year and 21 percent reported income of \$50,000 to \$74,999 per year (Figure 4).

#### History of Alternative Transportation Use

Visitors were also asked about their prior experiences with Alternative Transportation. Seventy-five percent of survey participants state that they had not used the Going-to-the-Sun Road shuttle system prior to filling out the on-site survey. Sixty-five percent of participants indicated that they never used public transportation at home (Figure 10). Additionally, 18 percent of survey respondents indicated that public transportation was not available to them at home.



“What is your state, province, or country of residence?”

*Table 1: State or Province of Residence*

<b>State or Province of Residence</b>	<b>Percent</b>
Montana	16.8
Washington	11.2
California	8.7
Alberta, Canada	5.0
Florida	4.6
Minnesota	4.1
Pennsylvania	3.5
Wisconsin	3.3
Illinois	3.1
Texas	2.7

“What is your race? (Please check one or more.)”

*Table 2: Percent of Survey Respondents by Race*

<b>Race</b>	<b>Percent</b>
White	96.8
Asian	1.5
Black or African American	.6
More than one race	.6
American Indian or Alaskan Native	.3
Middle Eastern	.3

What is the highest level of education that you have completed? (Please check only one response.)

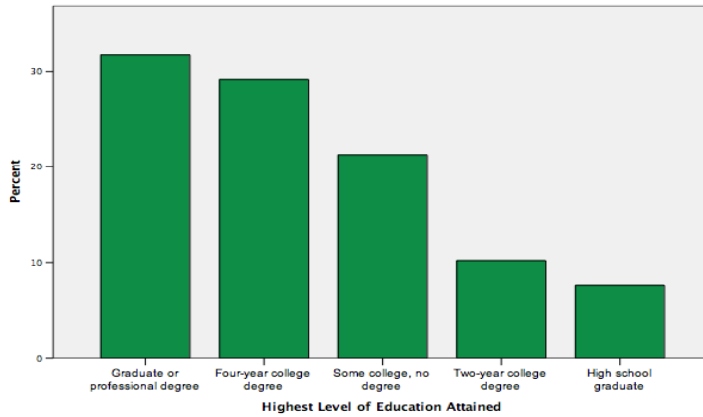


Figure 2: Highest Level of Education as Reported by

Which of the following categories best describes your current employment status? (Please check only one response.)

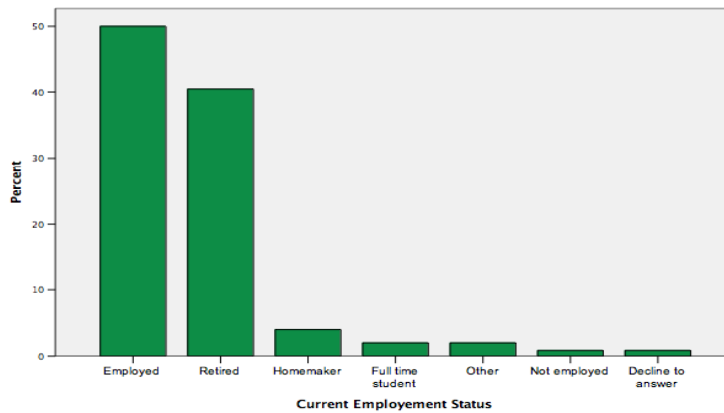


Figure 3: Employment Status of Respondents

Which of the following income groups best describes your total household income in 2006 before taxes? (Please check only one response.)

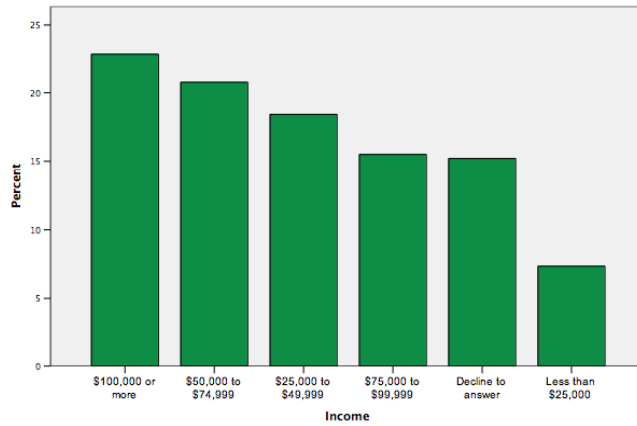


Figure 4: Household Income of Survey

How often, if at all, do you use public transportation (such as subway, bus, or commuter rail) at home? Please check the one category that *best* describes your use of public transportation at home.

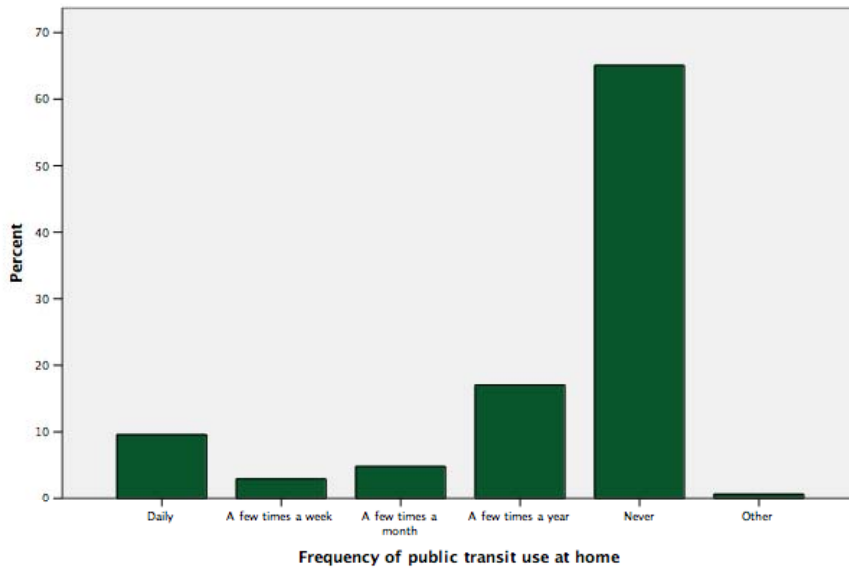


Figure 5: Frequency of Public Transportation Use at Home as Reported by Survey Respondents

## **Group Characteristics**

Survey participants were asked a series of questions about their travel group including group size, group type, number of small children, group members' physical abilities, and membership in organized groups/tours.

### Group Size

The mean party size reported by survey respondents was 3.53. Forty- six percent of survey Additionally, the largest group type reported by survey participants was “family” with 68 percent (Figure 7). Ten percent of survey respondents indicated that they were traveling with children under six years of age. Additionally, ten percent of visitors indicated visiting the park with children between the ages of six and ten. Sixteen percent of visitors reported traveling with children between the ages of ten and 18 years.

### Group Members with Limited Physical Ability

Visitors were asked if any individuals (including themselves) in their personal travel group had the ability to walk only limited distances. Thirty-four percent of survey participants reported traveling with individuals with limited ability. Reasons cited for group members' ability to only walk limited distances included pain/discomfort (75 percent), breathing/respiratory condition (24 percent), and having small children (12 percent) (Table 3). Six percent of survey respondents indicated that they had encountered access or service problems as a result of the physical limitations discussed above.

### Membership in Organized Groups

Visitors were asked if they were visiting the park as part of an organized group. Five percent of respondents indicated taking a commercial guided tour while in the park. Two percent reported being part of an educational group, and two percent reported being part of some other type of organized group during their visit.

On this visit, how many people are in your personal group, including yourself?

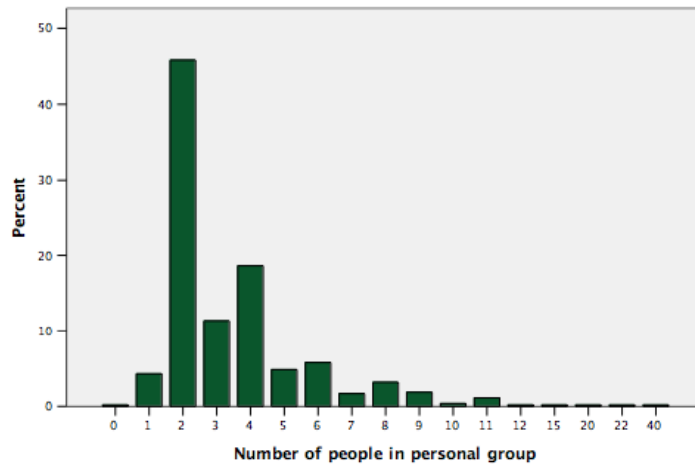


Figure 6: Group size as indicated by survey respondents

On this visit, what kind of personal group (not guided tour/educational/other organized group) were you with? (Please check only one response.)

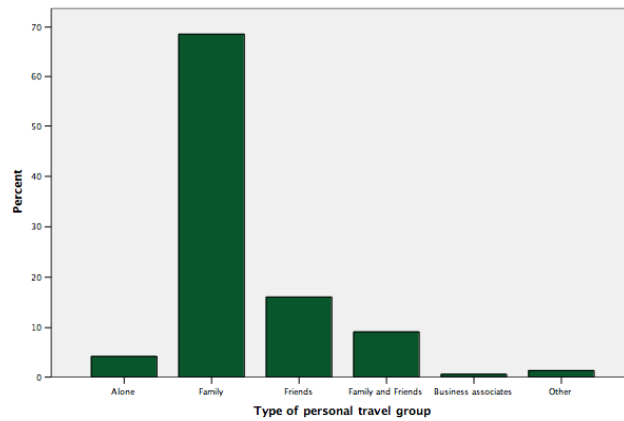


Figure 7: Group type of survey respondents

If yes, [you indicated that members of your travel group had the ability to walk only limited distances] which of the following factors limited the distance that one or more members of your personal travel group could walk. (Please check all that apply)

*Table 3: Reasons Cited by Thirty-four Percent of the Visitors for Ability to Walk Limited Distances*

<b>Reason for ability to walk only limited distances</b>	<b>N</b>	<b>Percent*</b>
Pain/discomfort	83	74.8
Breathing/respiratory condition	27	24.3
Have small children	13	11.7
Prefer not to walk	10	9.0
Use of walker/cane	7	6.3
Use of wheelchair	3	2.7
Other	2	1.8

\*Respondents were asked to check all responses that applied. Thus cumulative percent is greater than 100.

### ***Trip Characteristics***

Visitors were asked a series of questions regarding characteristics of their trip to Glacier National Park. Items of interest included use of a national park pass, lodging, number of days in park, and number of nights in park.

#### Ownership of National Park Service Entrance Pass

Sixty-five percent of survey respondents stated that they owned some type of National Park Service Entrance Pass. Of those who reported owning an entrance pass, 43 (n=97) percent owned a Golden Age Passport and 31 (n=71) percent owned a National Park Pass (Figure 8).

#### Where did Visitors Stay while Visiting Glacier National Park?

Participants were asked to indicate where they stayed during their visit to Glacier National Park. The three most reported locations for lodging were a campground in Glacier National Park (29.5 percent); a local motel, hotel, cabin, cottage or resort outside of the park (27.5 percent); and a lodge or motel in Glacier National Park (19.3 percent) (Table 4).

#### Length of Stay in Glacier National Park

Visitors were asked to indicate how long they planned to stay in Glacier National Park. Sixty-percent of visitors indicated that they were planning to spend one or more nights inside of Glacier National Park (Figure 9).

Visitors were also asked to indicate the number of days they planned to spend inside of Glacier National Park. Seventy-five percent of survey respondents indicated that they would spend more than one day in the park (Figure 10).

Do you have any type of National Park Service entrance pass? If yes, please indicate which:

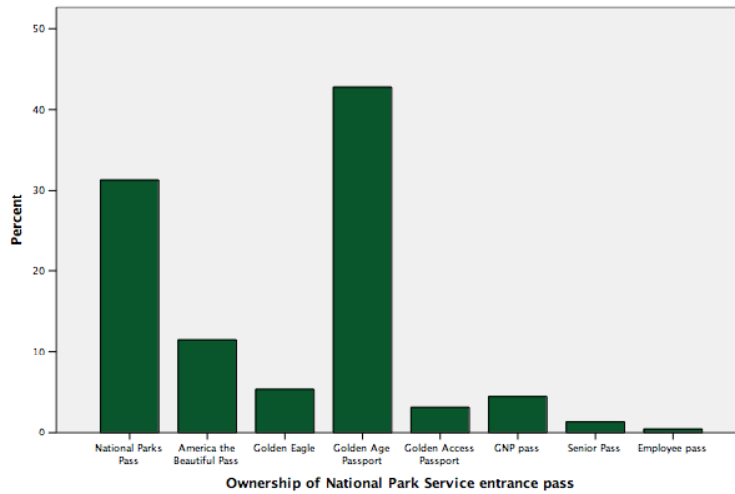


Figure 8: Reported Ownership of National Park Service Entrance Pass

Where are you staying during this visit to Glacier National Park? (Please check all that apply)

Table 4: Location of Lodging as Reported by Survey Respondents

<b>Lodging during stay at Glacier National Park</b>	<b>N</b>	<b>Percent</b>
Campground in Glacier National Park	159	29.5
Local motel, hotel, cabin, cottage or resort outside of park	148	27.5
A lodge/motel in Glacier National Park	104	19.3
My primary residence	35	6.5
Residence of friend or relative in the area	33	6.1
Campground outside of park	30	5.6
A back country chalet in Glacier National Park	16	3.0
My secondary residence in the area	11	2.0
Waterton Lakes	3	0.6



How many nights will you be spending inside Glacier National Park?

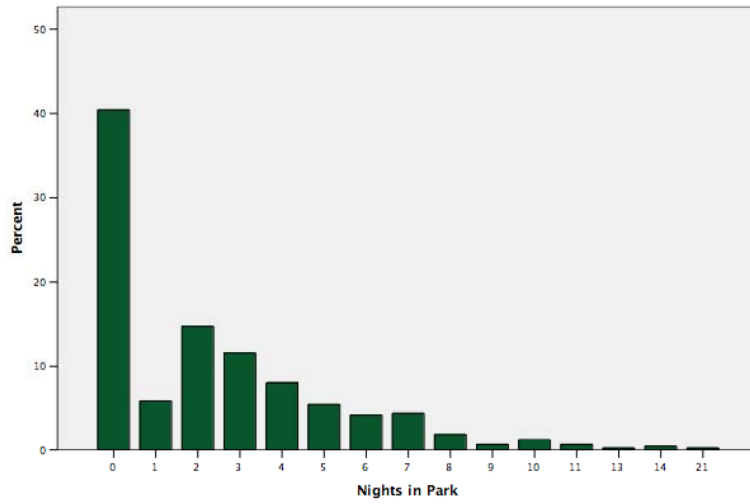


Figure 9: Number of Nights Spent in the Park by Respondents

How many days do you plan to be in the park during this visit?

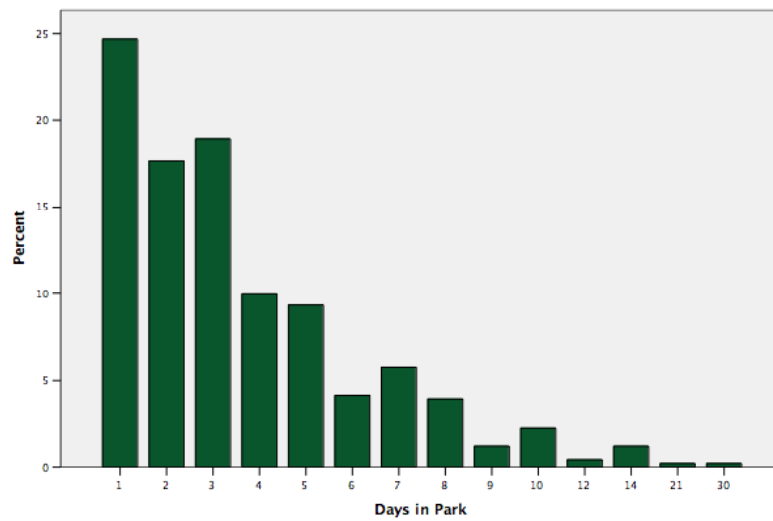


Figure 10: Number of Days in Park as Reported by Participants

### ***How do Respondents Compare to Those Surveyed in the 2005-2006 Studies?***

Participants in this study were similar to those who participated in both the 2005 and 2006 visitor use studies. The largest group type in each of the three studies was “family”. Also, the ten most frequently reported states of origin were consistent from year to year. In addition, group size and number of nights spent in park was consistent with that reported in previous studies (Table 5).

*Table 5: Group Size and Night Spent in Park as Reported by Participants in Study Phases 1-3 (2005-1007)*

	<b>2005</b>	<b>2006</b>	<b>2007</b>
Group Size	3.2	3.9	3.5
Nights Spent in Park	1.5	2.5	2.4

### ***What Types of Activities and Experiences do GNP Visitors Desire?***

Visitors were asked to rate the importance of achieving different types of recreation experiences during their trip to Glacier National Park on a five-point scale (1 being not important and 5 being extremely important). The three items of greatest importance to survey participants are: to see scenic beauty, to be close to nature, and to see wildlife (Table 6).

Visitors were also asked to indicate the activities they planned to engage in while at Glacier National Park. The most frequently cited activities were auto touring, watching wildlife, and visiting visitor centers (Table 7).

Of the visitors who indicated an intention to hike while in Glacier National Park, forty-seven percent reported having a hiking destination in mind. The three most popular hiking destinations reported by survey participants were Hidden Lake, Avalanche, and the Highline Trail (Table 8). The median anticipated hiking time reported by visitors was four hours.

Below is a list of possible experiences you may want to have while visiting Glacier National Park. For each item please *indicate how important the experience is* to you on your visit to the park.

*Table 6: Recreation Experience Preference*

<b>Recreation Experience</b>	<b>Mean</b>	<b>Standard Deviation</b>
To see scenic beauty	4.64	0.64
To be close to nature	4.18	0.88
To see wildlife	4.16	0.90
To do something with your family	4.04	1.19
To learn about things at Glacier National Park	3.81	1.01
To be near considerate people	3.79	1.08
To photograph wildlife	3.67	1.17
To be in a place that is quiet	3.67	1.01
To be away from crowds of people	3.64	1.12
To be where things are fairly safe	3.54	1.13
To experience solitude	3.36	1.14
To feel my independence	3.23	1.19
To be in control of things that happen	3.12	1.17
To think about your personal values	3.01	1.24

Please check each activity that you plan to do (or have participated in) while in Glacier National Park during this visit. (check all that apply)

*Table 7: Activities Planned by Visitors While Visiting Glacier National Park*

<b>Activity</b>	<b>N</b>	<b>Percent*</b>
Driving: Auto touring	397	79.9
Watching wildlife	305	67.4
Visiting visitor centers	310	62.4
Photography	305	61.4
Walking/running	302	60.8
Hiking	298	60.0
Dining out	274	55.1
Picnicking	175	35.2
Viewing scenery	145	29.2
Camping: in vehicle	100	20.1
Camping: in tent	88	17.7
Ranger led program	78	15.7
Backpacking	52	10.5
Swimming	51	10.5
Commercial tour	49	9.9
Fishing	43	8.7
Guided hike	37	7.4
Horseback riding	35	7.0
Bicycling	32	6.4
Driving: motorcycle	29	5.8
Camping: backcountry	21	4.2
Orienteering	11	2.2
River rafting	6	1.2
Boating	4	0.8
Climbing	2	0.4
Shopping	1	0.2

\*Visitors were asked to check all that apply.

**If you checked hiking or backpacking in question 4, do/did you have a specific hiking destination in mind?**

*Table 8: Top 25 Anticipated Hiking Destinations as Reported by Survey Participants*

<b>Hiking Destination</b>	<b>N</b>	<b>Percent*</b>
Hidden Lake	36	24.8
Avalanche	30	20.7
Highline Trail	22	15.2
Grinnell Glacier	12	8.3
Logan Pass	12	8.3
Granite Park Chalet	12	8.3
Iceberg Lake	11	7.6
Many Glacier	6	4.1
Grinnell Lake	6	4.1
Trail of the Cedars	6	4.1
Sperry Chalet	5	3.4
Two Medicine Area	3	2.1
St. Mary Falls	3	2.1
Ptarmigan Tunnel	3	2.1
Mt. Oberlin	3	2.1
John's Lake	3	1.4
Mt. Siyeh	2	1.4
Baring Falls	2	1.4
Virginia Falls	2	1.4
Quartz Lake	2	1.4
Swift Current Pass	2	1.4
Haystack	2	1.4
Cobalt Lake	2	1.4
Lake Elizabeth	2	1.4
Mokowanis Junction	2	1.4

\* Visitors were allowed to list more than one hiking destination.

### ***What Factors do Visitors consider when making Decisions on Shuttle Use?***

Visitors were asked about a series of factors that might influence their decisions to use the shuttle at GNP. People's social behavior is determined by rational thought processes that consider their attitude about the behavior, the influence of important other people, and factors that might limit visitors control over their choice of behavior.<sup>8</sup>

#### Attitudes about riding the shuttle

A person's attitude toward a specific behavior (e.g. riding a shuttle bus at GNP) will be determined both by their belief about the outcomes that may occur if they choose the behavior (e.g. avoiding traffic congestion or being forced to keep a time schedule) and how positively or negatively they evaluate each of those outcome.<sup>9</sup> Positive attitudes toward shuttle use will occur when a person believes outcomes they rate positively are likely to happen (e.g. not having to deal with undesirable traffic conditions) and when they believe outcomes that they rate negatively are unlikely to happen (e.g. being more aware of time while visiting GNP). Negative opinions of shuttle use will occur, however, when a person believes an undesirable outcome is likely to occur (e.g. not being able to get on the bus they want, being with new and different people).<sup>10</sup>

Participants were asked to indicate their beliefs about the likelihood of a series of possible outcomes of riding the shuttle ("belief about outcome", seven-point scale with one being very unlikely and 7 being very likely). Then, they were asked to evaluate the

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<sup>8</sup> This conceptual model of social behavior, called the theory of planned behavior, is prevalent in social psychology and recreation research. For a full explanation of the theory of planned behavior, see *Attitudes, personality and behavior* (2<sup>nd</sup> ed.) by Acek Ajzen, 2005.

<sup>9</sup> Ajzen, I. 2005. *Attitudes, personality and behavior* (2<sup>nd</sup> ed.). New York: Open University Press.

<sup>10</sup> *ibid*

desirability of each of those items (“evaluation of outcome”, also on a seven-point scale with one being very bad and seven being very good) (Table 9).<sup>11</sup>

The most highly evaluated possible outcomes also tended to be rated as the most likely to occur. Furthermore, possible outcomes that were rated as least desirable were also generally rated as less likely to occur. This indicates that visitors had positive generally positive opinions of shuttle use at the park. Helping the environment at GNP, alleviating parking problems and improving safety were among the most strongly helpful beliefs about riding the shuttle.

### The Influence of Other People

Similar to attitudes, the extent to which other people influence a person’s behavior is determined by beliefs. These important others could include parents, spouses, friends, co-workers or those considered experts on the behavior in question. The extent of the influence of others on behavior is a function of both how a person believes important others evaluate the behavior in question (i.e. riding a shuttle at GNP) and how motivated they are to comply with the beliefs of those people. The influence of other people on behavioral intentions is strongest when important others have strong beliefs about the behavior in question and when the subject has a strong *motivation to comply* with those people.<sup>12</sup>

Visitors were asked questions about the influence of others on their decision to ride the shuttle. First, visitors were asked to indicate the extent to which important others would think they should ride the shuttle while visiting GNP (Perceived beliefs of others). Then visitors were asked how much they cared what each of the referents thinks they should do (motivation to comply with others). Both questions were asked using a seven-point scale with one being not at all and seven being very much (Table 10).

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<sup>11</sup> *ibid*

<sup>12</sup> *ibid*

Visitors indicated a strong belief that park managers would want them to ride the shuttle. Their beliefs of what other significant people would want them to do regarding shuttle use, however, was more moderate. While the mean scores of the perceived opinions of family, friends, and the group they were traveling with indicates a relatively neutral belief that others would want them to take the shuttle, the standard deviation indicates that visitors responses to this question were quite variable. Additionally, mean scores on motivation to comply with others questions indicate that while visitors are most motivated to comply with what their family believes they should do, the standard deviations for these questions indicate a large amount of variability in these motivations as well.

### Control

Finally, visitors were asked about factors that could facilitate or restrict their ability to ride the shuttle during their visit to GNP. Visitors were first asked to indicate their agreement or disagreement with a series of statements about their expectations of the shuttle system and their visit to Glacier National Park (“strength of belief” measured using a seven-point scale with one being strongly disagree and seven being strongly agree). Then visitors were asked to indicate the degree to which each of the factors from the previous question would make riding the shuttle at GNP easier or more difficult (“power of belief” measured using a seven-point scale with one being much more difficult and seven being extremely easier) (Table 11).<sup>13</sup>

Questions referring to the amount of the control visitors have over their choice of whether or not to ride the shuttle indicate that visitors perceive few constraints to shuttle use. Items that visitors rated as factors that would make riding the shuttle easier were also factors which visitors expected to be present. Conversely, factors that visitors rated as making shuttle use more difficult were also rated as less likely to occur.

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<sup>13</sup> *ibid*



(Belief about Outcome) Please answer the following questions regarding you *beliefs about riding the shuttle* at Glacier National Park

(Evaluation of Outcome) In the last question you were asked to indicate the likelihood of a series of possible outcomes to riding the shuttle. In this question, please *evaluate the desirability of each of those possible outcomes* of riding the shuttle at GNP.

*Table 9: Visitors' Beliefs and Evaluations of Possible Outcomes of Shuttle Use at Glacier National Park*

Possible Outcome	Belief about Outcome		Evaluation of Outcome	
	Mean	Standard Deviation	Mean	Standard Deviation
Benefit the environment at GNP	6.04	1.54	6.35	1.14
Alleviate parking issues within the park	5.90	1.56	6.14	1.26
Relieve me of the responsibility of driving in GNP	5.88	1.68	5.89	1.43
Be a safe way to travel the Going to the Sun Road	5.76	1.64	6.05	1.37
Allow me to see the sights at GNP	5.55	1.65	6.04	1.34
Shorten traffic delays in the park due to construction	5.44	1.76	5.95	1.33
Prevent me from having to deal with undesirable traffic conditions at GNP	5.42	1.81	6.05	1.33
Be a comfortable way to travel through the park	5.38	1.67	5.86	1.37
Cause me to be with new and different people	5.32	1.79	5.43	1.29
Allow me to go to the areas I want in GNP	5.24	1.79	5.74	1.48
Require me to plan my day	5.22	1.74	4.68	1.64
Reduce my stress while visiting GNP	5.07	1.93	5.81	1.41
Allow me to engage in my chosen activities while in GNP	5.03	1.78	5.71	1.47
Allow me to have the type of experience I desire at GNP	4.87	1.82	5.67	1.44
Make me more aware of time while visiting GNP	4.80	1.88	4.90	1.67
Allow me more time to interact with my family	4.69	1.97	5.54	1.50
Help me decide where to stop along the Going to the Sun Road	4.65	1.94	5.21	1.62

(Perceived beliefs of others) Generally speaking, how much do you think each of the following people would think that you should ride the shuttle at GNP?

(Motivation to Comply with others) Generally speaking, how much do you care what the following people think you should do while visiting GNP?

*Table 10: Participants' Impressions of Beliefs of Important Others Regarding Shuttle Use*

<b>Referent</b>	<b>Perceived Beliefs of Others</b>		<b>Motivation to Comply with Others</b>	
	<i>Mean</i>	<i>Standard Deviation</i>	<i>Mean</i>	<i>Standard Deviation</i>
Park Managers	6.21	1.52	4.08	2.25
Your family	4.63	2.18	4.61	2.21
Your friends	4.53	2.16	4.00	2.16
The group you are traveling with	4.43	2.30	4.08	2.25

(Strength of Belief) Please indicate how strongly you agree or disagree with each of the following statements.

(Power of Belief) Please indicate the extent to which each of the following factors will make riding the shuttle at GNP easier/more difficult.

*Table 11: Visitor Evaluations of Factor Which Could Facilitate or Restrict Shuttle Use at Glacier National Park*

<b>Statement</b>	<b>Strength of Belief</b>		<b>Power of Belief</b>	
	<i>Mean</i>	<i>Standard deviation</i>	<i>Mean</i>	<i>Standard deviation</i>
I will understand how to utilize the shuttle at GNP	5.67	1.42	5.68	1.41
The shuttle will stop at the location I want to visit along the GTSR	5.39	1.64	5.45	1.68
I will have ample time to do the things I want to do at GNP during this visit	5.35	1.65	5.42	1.60
I will be able to get on the bus I want	5.20	1.52	5.38	1.56
I will carry a lot of gear when I travel on GTSR	4.07	1.93	4.07	1.89

### ***How did Visitors use the Shuttle at Glacier National Park?***

Visitors were asked a series of questions about their use of the Going-to-the-Sun shuttle system at Glacier National Park. Just over half of survey respondents (50.3 percent) reported using the shuttle system during their visit to Glacier National Park. Of those visitors who reported riding the shuttle, 49 percent reported riding the shuttle every time they traveled the road (Figure 11)

#### For What Purposes did Visitors Ride the Shuttle?

Survey participants who chose to use the shuttle at GNP were asked to indicate the purposes for which they used the shuttle system. As shown in Table 12, the three most popular reasons for using the shuttle cited by visitors were to view scenery (67.4 percent), to access a trailhead for hiking (60.7 percent), and to tour the road (58.4 percent).

#### Where Did Visitors Board the Shuttle?

Visitors were asked to indicate where they had originally boarded the shuttle. Sixty-seven percent of visitors reported boarding the shuttle at Apgar Transit Center (Table 13).

#### Where did Visitors get Off the Shuttle?

Visitors were asked to indicate all of the locations where they had gotten off the shuttle during their visit. The three most popular locations for visitors to get off the shuttle were Logan Pass, Apgar Transit Center, and Avalanche Creek (Table 14).

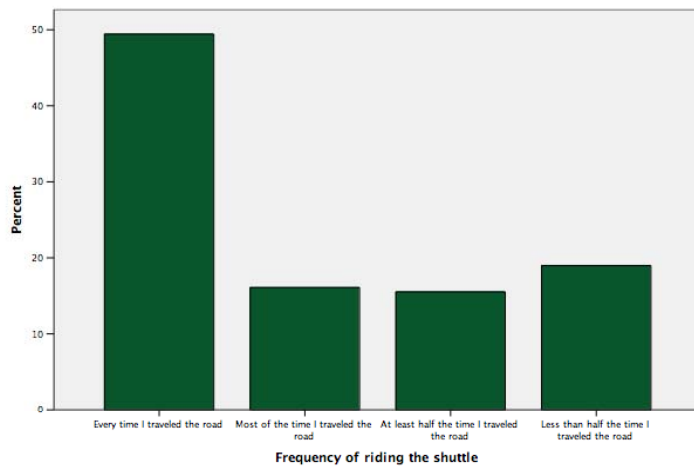
#### How did Visitors use the Shuttle for Loop Hikes?

Visitors were asked if they had used the shuttle to take one-way (loop) hikes. Thirty-six percent of respondents who rode the shuttle and answered the question reported using the shuttle to take loop hikes.

Visitors were also asked to indicate the shuttle stops from which they originated their loop hikes. The most popular shuttle stops for beginning loop hikes were Logan Pass, St. Mary Falls, and The Loop (Table 15).

In addition, visitors were asked to indicate at which shuttle stop they ended their loop hike. The most popular responses were The Loop, Logan Pass, and Sunrift Gorge (Table 16).

During the visit when you were initially contacted, how often did you ride the shuttle bus within the park? (check one only)



*Figure 11: Frequency of Shuttle Use as Reported by Shuttle-Riding Participants*

For what purposes did you ride the shuttle in GNP during the visit when you were initially contacted? (Please check all that apply)

*Table 12: Reasons Cited by Participants for Using the Going-to-the-Sun Shuttle System*

<b>Purpose</b>	<b>Percent</b>
View scenery	67.4
Access a trail head for hiking	60.7
Tour the road	58.4
Get to a destination along the road	47.8
Access visitor centers	40.4
Visit a developed area within the park	26.4
Go on a picnic	7.9
Backcountry camping	6.7
Attend interpretive programs	5.6
Other	1.7

What is the name of the location where you initially got on the shuttle?

*Table 13: Location Where Visitors Initially Boarded the Shuttle*

<b>Initial Boarding Location</b>	<b>N</b>	<b>Percent</b>
Apgar Transit Center	121	66.9
St. Mary Visitor Center	23	12.7
Logan Pass <sup>14</sup>	12	6.6
Lake McDonald Lodge	8	4.4
Avalanche Creek	8	4.4
The Loop	7	3.9
Sprague Creek Campground	5	2.8
Rising Sun	5	2.8
Don't Know	5	2.8
St. Mary Falls	3	1.7
Apgar Campground	2	1.1
Apgar Village	2	1.1
Sun Point	1	0.6
Gunsight Pass Trailhead	1	0.6
Sunrift Gorge	1	0.6

<sup>14</sup> Logan Pass was the transfer point for visitors traveling the entire road by shuttle. Visitors traveling from the west side of the park (blue route) transferred to the red route to continue their journey to the east side of the park. Some visitors may have considered this an initial boarding of the red route.

What are the names of the locations where you got off the shuttle? (Please check all that apply)

*Table 14: Locations where Visitors Got Off the Shuttle*

<b>Location</b>	<b>N</b>	<b>Percent</b>
Logan Pass	154	84.6
Apgar Transit Center	66	36.3
Avalanche Creek	51	28.0
St. Mary Visitor Center	47	25.8
Lake McDonald Lodge	46	25.3
St. Mary Falls	27	14.8
The Loop	24	13.2
Rising Sun	21	11.5
Sunrift Gorge	17	9.3
Sun Point	10	5.5
Siyeh Bend	9	4.9
Apgar Village	8	4.4
Gunsight Pass Trailhead	7	3.8
Apgar Campground	5	2.7
Don't Know	5	2.7
Fish Creek Campground	4	2.2
Sprague Creek Campground	3	1.6

If you answered yes to [using the shuttle for loop hikes], at what location did you begin your hike?

*Table 15: Shuttle Stop from Which Visitors Began Their Loop Hike*

<b>Location</b>	<b>N</b>	<b>Percent</b>
Logan Pass	25	38.5
St. Mary Falls	10	15.4
The Loop	8	12.3
Siyeh Bend	7	10.8
Avalanche Creek	7	10.8
Sunrift Gorge	6	9.2
Apgar Transit Center	4	6.2
Lake McDonald Lodge	3	4.6
Gunsight Pass Trailhead	3	4.6
Sun Point	2	3.1
Rising Sun	2	3.1
St. Mary Visitor Center	1	1.5

If you answered yes to [using the shuttle for loop hikes], at what location did you hike end?

*Table 16: Shuttle Stops Where Visitors Loop Hikes Ended*

<b>Location</b>	<b>N</b>	<b>Percent</b>
The Loop	19	29.7
Logan Pass	12	18.8
Sunrift Gorge	12	18.8
Lake McDonald Lodge	9	14.1
St. Mary Falls	6	9.4
Sun Point	3	4.7
Avalanche Creek	2	3.1
Gunsight Pass Trailhead	2	3.1
Apgar Transit Center	1	1.6
Fish Creek Campground	1	1.6
Siyeh Bend	1	1.6
Sprague Creek Campground	1	1.6
Rising Sun	1	1.6

### ***How are Visitors Who Ride the Shuttle Similar/Different than Those Who Choose Not to Ride the Shuttle?***

Participants who rode the shuttle were compared with those who did not on a number of factors. While visitors were the same in the majority of ways (e.g. physical ability, history of alternative transportation use at home), several differences between riders and non-riders did emerge.

#### Riders Preferred Different Types of Experiences than Non-Riders

Visitors were asked to indicate the importance of achieving different types of recreation experiences during their visit to Glacier National Park (using a five-point scale with one being not important and five being extremely important). While riders and non-riders were similar with respect to most desired experiences, riders rated seeing scenic beauty ( $t=2.1$ ,  $P<0.05$ ) and being in a place that was quiet ( $t=2.0$ ,  $P<0.05$ ) as significantly more important than non-riders. Additionally, non-riders rated being in control of things that happen as significantly more important than riders ( $t=-2.6$ ,  $P<0.05$ , see Table 17).

#### Shuttle Riders are in Smaller Groups than Non-riders

Visitors were asked to indicate the size of their personal travel group. Significant differences were found between riders and non-riders with respect to group size. Riders were in generally smaller groups (average 3 people per group) than non-riders (average 4 people per group,  $t=-1.9$ ,  $P=0.05$ ).

#### Shuttle Riders were traveling with Fewer Small Children

No differences existed between riders and non-riders regarding the number of children less than six years of age ( $t=-1.6$ ,  $P=0.1$ ) or between the ages of 10 and 18 years of age ( $t=-1.9$ ,  $P<0.1$ ) in their personal travel group. Significant differences did exist between riders and non-riders with respect to the number of children between six and ten years old with riders traveling with fewer children between the ages of six and ten than non-riders.



Shuttle Riders Planned to Engage in Different Activities than Non-riders

Shuttle riders appear to be more physically active within the park than non-riders. A larger proportion of shuttle riders than non-riders planned to engage in walking/running ( $\chi^2=24.15$ ,  $P<0.05$ ), hiking ( $\chi^2=11.55$ ,  $P<0.05$ ), picnicking ( $\chi^2=3.18$ ,  $P<0.10$ ), camping in vehicle ( $\chi^2=8.56$ ,  $P<0.05$ ), ranger led programs ( $\chi^2=5.47$ ,  $P<0.05$ ), backpacking ( $\chi^2=3.12$ ,  $P<0.10$ ), and fishing ( $\chi^2=3.13$ ,  $P<0.10$ ). A larger proportion of non-riders than riders, however, planned to engage in auto touring ( $\chi^2=24.16$ ,  $P<0.05$ , see Table 18).

Below is a list of possible experiences you may want to have while visiting Glacier National Park. For each item please *indicate how important the experience is* to you on your visit to the park.

*Table 17: Experience Types Desired by Riders/Non-riders*

<b>Experience</b>	<b>Mean Rider</b>	<b>Mean Non-rider</b>
To see scenic beauty	4.74	4.61*
To be close to nature	4.22	4.19
To see wildlife	4.17	4.13
To do something with your family	4.09	4.12
To learn about things at Glacier National Park	3.88	3.77
To be near considerate people	3.85	3.83
To be in a place that is quiet	3.76	3.54*
To be away from crowds of people	3.70	3.62
To photograph wildlife	3.63	3.75
To be where things are fairly safe	3.49	3.64
To experience solitude	3.38	3.31
To feel my independence	3.21	3.22
To think about your personal values	3.07	3.01
To be in control of things that happen	2.98	3.30

\* $P < 0.05$

Please check each activity that you plan to do (or have participated in) while in Glacier National Park during this visit. (check all that apply)

*Table 18: Proportion of Rider/Non-riders engaging in Specific Activities*

<b>Activity</b>		<b>Riders</b>	<b>Non- Riders</b>	$\chi^2$	<b>Significance</b>
Driving: Auto touring	Percent	66.3	87.9	24.16	0.000
	Count	122	160		
Walking/running	Percent	67.4	53.3	7.60	0.006
	Count	124	97		
Hiking	Percent	69.0	51.6	11.55	0.001
	Count	127	94		
Picnicking	Percent	39.7	30.8	3.18	0.08
	Count	73	56		
Camping: in vehicle	Percent	26.6	14.3	8.56	0.003
	Count	49	26		
Ranger led program	Percent	21.2	12.1	5.47	0.019
	Count	39	22		
Backpacking	Percent	12.0	6.6	3.12	0.08
	Count	22	12		
Fishing	Percent	9.8	4.9	3.13	0.08
	Count	18	9		

### ***How did visitors evaluate shuttle system information?***

Riders and non-riders were asked a series of questions about their access to shuttle system information obtained from various resources. The information sources most accessed by visitors were printed materials, personal communications with park staff and volunteers, and the internet (Table 19).

Riders and non-riders were then asked to evaluate the information on the shuttle system that they had accessed during their trip on a scale of one to five (with one being poor and five being excellent). The two sources of information most highly rated by survey participants were personal communications with park staff/volunteers and printed materials (Figure 12).

A larger proportion of riders than non-riders reported accessing both printed materials ( $\chi^2=19.08$ ,  $P<0.05$ ) and personal communications with park staff and volunteers ( $\chi^2=9.52$ ,  $P<0.05$ ). This could indicate that access to these types of information made visitors more likely to ride the shuttle. It could, however, also indicate that visitors who rode the shuttle were more likely to seek out information regarding the system.

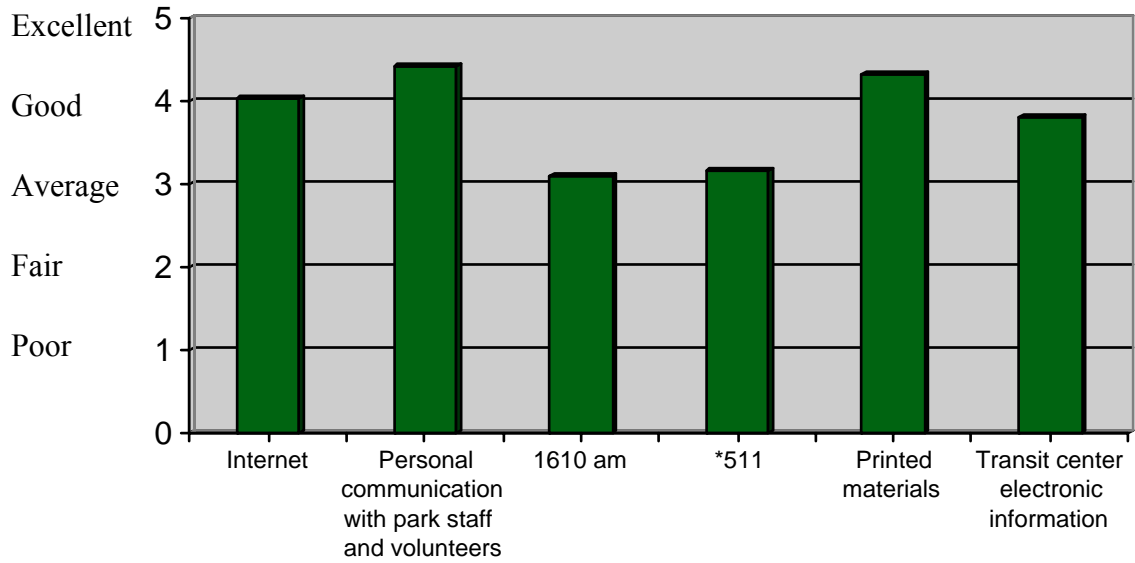
Shuttle riders were also asked to evaluate the availability and understandability of information on the GTSR shuttle system. Visitors rated the availability of information as good and the understandability as good to excellent (Figure 13).

Did you have access to the following information sources about transportation at Glacier National Park?

*Table 19: Percent of Visitors Accessing Specific Sources of Information on the GTSR Shuttle System*

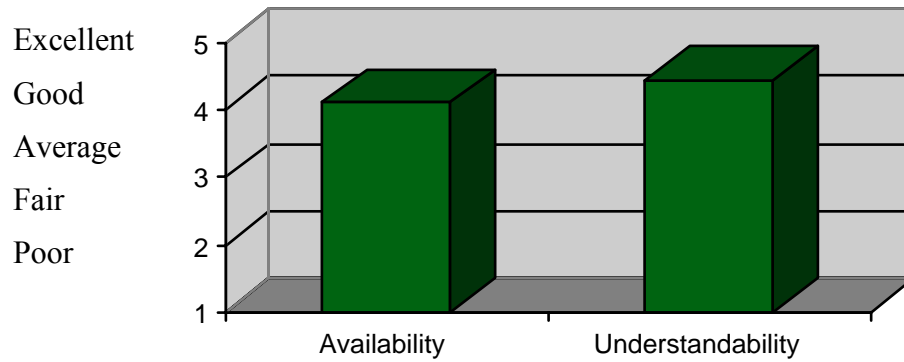
<b>Information Source</b>	<b>Percent</b>		
	<b>Overall</b>	<b>Riders</b>	<b>Non-Riders</b>
Printed materials	81.4	87.4	72.5
Personal communication with park staff/volunteers	78.5	87.8	64.8
Internet	57.8	58.0	57.5
Traveler radio information (1610 am)	21.4	13.9	31.4
Transit center electronic information	20.2	24.2	14.8
*511 (cellular service)	10.2	5.5	16.1

How would you rate the usefulness of information from the following sources when planning your travel through Glacier National Park?



*Figure 12: Visitor Evaluations of Shuttle System Information*

Please rate the park-operated shuttle service at Glacier National Park. (Circle one number for each item) If you did not use the park-operated shuttle during this visit, please go to question 14)



*Figure 13: Rider Evaluations of Availability and Understandability of Shuttle System Information*

### ***How did riders evaluate shuttle system service?***

Riders were asked to evaluate various aspects of shuttle service quality. Each question was asked on a five-point scale ranging from poor (1) to excellent (5). Riders evaluated the overall service provided by the shuttle system as good to excellent (mean score, 4.43).

Riders were asked to evaluate the buses used for the Going-to-the-Sun Road shuttle system. Riders rated the cleanliness of buses as good to excellent and the comfort of buses as good (Figure 14).

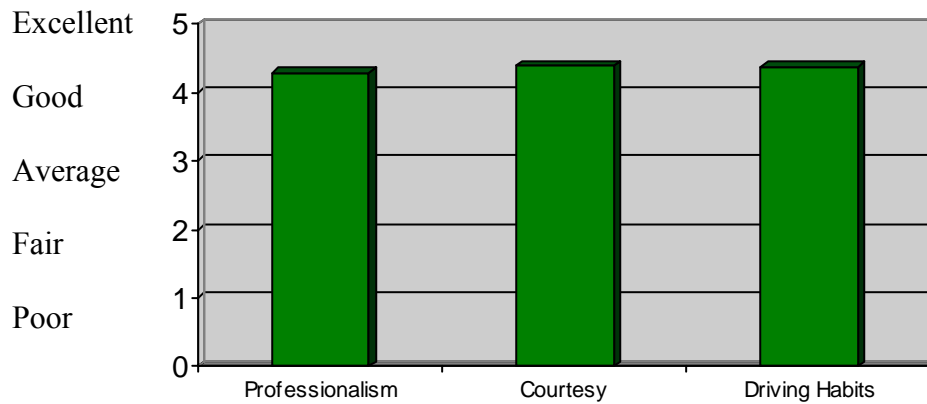
Riders were also asked to evaluate the quality of service provided by shuttle drivers. Riders rated the quality of service provided by drivers as good to excellent in all areas surveyed (Figure 15).

Finally, riders were asked to evaluate shuttle service operations with respect to frequency and timeliness of service. Riders rated both aspects as good (Figure 16)

Please rate the park-operated shuttle service at Glacier National Park. (Circle one number for each item) If you did not use the park-operated shuttle during this visit, please go to question 14.

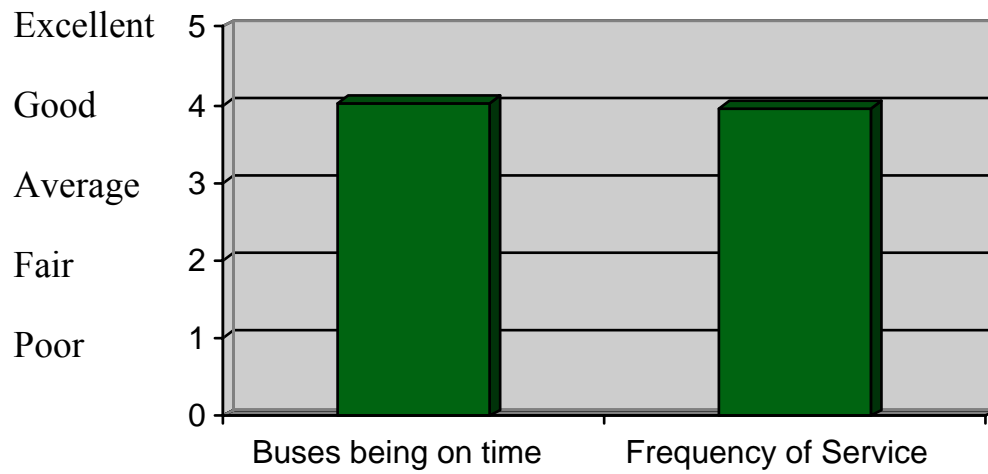


*Figure 14: Rider Evaluations of Buses*



*Figure 15: Rider Evaluation of Drivers*





*Figure 16: Rider Evaluations of Shuttle Service Operation*

**Appendix A: Onsite Questionnaire**

# **Glacier National Park Visitor Study**

On-site Questionnaire  
**Summer 2007**



**The University of  
Montana**

College of Forestry and Conservation  
Department of Society and Conservation  
Missoula, MT 59801



Glacier National Park  
P.O. Box 128  
West Glacier, MT 59936

**OMB #1024-0224 (NPS #07-049)  
Expiration Date: 01/31/2008**

**Thank you for agreeing to help Glacier National Park!**

Your input is important to park management. Response to this request is voluntary. While you are not required to respond, your cooperation is needed to make the survey results comprehensive, accurate, and timely. This survey is sponsored by the National Park Service and the information will be used by park managers to better serve the public.

---

1. What is your state or province, or country of residence?  
\_\_\_\_\_
  
2. Where are you staying during this visit to Glacier National Park? (Please Check all that apply)
  - My primary residence
  - My secondary residence in the area
  - Residence of friend or relative in the area
  - Campground in Glacier National Park
  - A lodge/motel in Glacier National Park
  - A backcountry chalet in Glacier National Park
  - Local motel, hotel, cabin, cottage, or resort outside the park
  - Other (please specify) \_\_\_\_\_
  
3. If you are staying in a campground at Glacier National Park, will any of those nights be spent in a backcountry campground?
  - Yes
  - No
  
4. Please check each activity that you plan to do (or have participated in) while in Glacier National Park during this visit. (check all that apply)
  - Driving: auto touring     Driving: motorcycling     Ranger led program
  - Dining out     Fishing     Orienteering
  - Swimming     Guided hike     Hiking
  - Horseback riding     Backpacking     Visiting visitor centers
  - Picnicking     Photography     Camping: backcountry
  - Camping: in vehicle     Camping: in tent     Bicycling (road)
  - Walking/running     Watching wildlife     Viewing Scenery
  - Commercial tour     Other \_\_\_\_\_
  
5. **If you checked hiking or backpacking in question 4, do/did you have a specific hiking destination in mind?**
  - Yes (Destination \_\_\_\_\_)

No

6. How long do you plan to be hiking (or if you have already completed this hike, how long did you hike)? \_\_\_\_\_ hours \_\_\_\_\_ days       don't know

7. Do you plan to (or if you have already completed this hike, did you) end your hike in the same location where your hike started?

Yes

No

8. How many days do you plan to be in the park during this visit?

\_\_\_\_\_ days

9. How many nights will you be spending inside Glacier National Park?

\_\_\_\_\_ nights

10. How often, if at all, do you use public transportation (such as subway, bus, or commuter rail) at home? Please check the one category that *best* describes your use of public transportation at home.

Daily

A few times a week

A few times a month

A few times a year

Never

Other (please specify: \_\_\_\_\_)

Please check here if public transportation is not available to you at your home

11. Have you ever ridden the free, park- operated shuttle at Glacier National Park prior to filling out this questionnaire?

Yes

No



We would like to know about your attitudes towards riding a shuttle at Glacier National Park. In question 14, we are interested in what outcomes you think will occur if you ride the shuttle. Then in question 15, we would like to know if you consider these possible outcomes to be good or bad.

14. Please answer the following questions regarding your *beliefs about riding the shuttle* at Glacier National Park.

	Very Unlikely	Moderately Unlikely	Slightly Unlikely	Neither Likely nor Unlikely	Slightly Likely	Moderately Likely	Very Likely
<b>Riding the shuttle bus at GNP will:</b>							
Cause me to be with new and different people	1	2	3	4	5	6	7
Allow me to have the type of experience I desire at GNP	1	2	3	4	5	6	7
Allow me to engage in my chosen activities while at GNP	1	2	3	4	5	6	7
Allow me to go to the areas I want within GNP	1	2	3	4	5	6	7
Shorten traffic delays in the park due to construction	1	2	3	4	5	6	7
Prevent me from having to deal with undesirable traffic conditions at GNP	1	2	3	4	5	6	7
Allow me to see the sights at GNP	1	2	3	4	5	6	7
Allow me more time to interact with my family	1	2	3	4	5	6	7
Require me to plan my day	1	2	3	4	5	6	7
Alleviate parking issues within the park	1	2	3	4	5	6	7
Be a safe way to travel the Going-to-the-Sun Road	1	2	3	4	5	6	7
Reduce my stress while visiting GNP	1	2	3	4	5	6	7
Help me decide where to stop along the Going-to-the-Sun Road	1	2	3	4	5	6	7
Benefit the environment at GNP	1	2	3	4	5	6	7
Make me more aware of time while visiting GNP	1	2	3	4	5	6	7
Be a comfortable way to travel through the park	1	2	3	4	5	6	7
Relieve me of the responsibility of driving while in GNP	1	2	3	4	5	6	7

15. In the last question you were asked to indicate the likelihood of a series of possible outcomes to riding the shuttle. In this question, please *evaluate the desirability each of those possible outcomes* of riding the shuttle at Glacier National Park.

	Very Bad	Moderately Bad	Slightly Bad	Neither Bad nor Good	Slightly Good	Moderately Good	Very Good
Being with new and different people is	1	2	3	4	5	6	7
Having the type of experience I desire at GNP is	1	2	3	4	5	6	7
Engaging in my chosen activities while at GNP is	1	2	3	4	5	6	7
Going to the areas I want within GNP is	1	2	3	4	5	6	7
Not having to deal with undesirable traffic conditions in GNP is	1	2	3	4	5	6	7
Shortened traffic delays due to construction are	1	2	3	4	5	6	7
Seeing the sights at GNP is	1	2	3	4	5	6	7
Allowing me more time to interact with my family is	1	2	3	4	5	6	7
Requiring me to plan my day is	1	2	3	4	5	6	7
Alleviating parking issues within the park is	1	2	3	4	5	6	7
Safely traveling the Going-to-the-Sun Road is	1	2	3	4	5	6	7
Reducing my stress while visiting GNP is	1	2	3	4	5	6	7
Helping me decide where to stop along the Going-to-the-Sun Road is	1	2	3	4	5	6	7
Benefiting the environment at GNP is	1	2	3	4	5	6	7
Making me more aware of time while visiting GNP is	1	2	3	4	5	6	7
Comfortably traveling through the park is	1	2	3	4	5	6	7
Relieving me of the responsibility of driving while in GNP is	1	2	3	4	5	6	7







27. On this visit, were you and your personal group with the following groups?

- |  |                              |                             |
|--|------------------------------|-----------------------------|
| a) Commercial guided tour                            | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b) Educational group (school, etc.)                  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c) Other organized group<br>(church, business, etc.) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

**Thank you for your participation!**

Please use the back of this page to make any further comments.

**PRIVACY ACT and PAPERWORK REDUCTION ACT statement:**

6 U.S.C. 1a-7 authorizes collection of this information. This information will be used by park managers to better serve the public. Response to this request is voluntary. No action may be taken against you for refusing to supply the information requested. Your name is requested for follow-up mailing purposes only. When analysis of the questionnaire is completed, all name and address files will be destroyed. Thus the permanent data will be anonymous. Please do not put your name or that of any member of your group on the questionnaire. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

**Burden estimate statement:** Public reporting burden for this form is estimated to average 9 minutes per response. Direct comments regarding the burden estimate or any other aspect of this form to Jack Potter; Glacier National Park, PO Box 128, West Glacier, MT 59936; 406-888-7821; jack\_potter@nps.gov

**Appendix B: Mail-back Questionnaire**

# Glacier National Park Visitor Study

Mail-back Questionnaire

**Summer 2007**



College of Forestry and Conservation  
Department of Society and Conservation  
Missoula, MT 59801



Glacier National Park  
P.O. Box 128  
West Glacier, MT 59936

**OMB #1024-0224 (NPS #07-049)  
Expiration Date: 01/31/2008**

**Thank you for agreeing to help Glacier National Park!**

Your input is important to Glacier National Park management. Response to this request is voluntary. While you are not required to respond, your cooperation is needed to make the survey results comprehensive, accurate, and timely. This survey is sponsored by the National Park Service and the information will be used by park managers to better serve the public.

---

We would like to know about your experience with riding the park-operated shuttle during your visit to Glacier National Park (GNP).

1. How many times did you ride the shuttle during the visit to GNP in which you received the initial questionnaire?

\_\_\_\_\_ Times

2. During the visit when you were initially contacted, how often did you ride the shuttle bus within the park? (check only one)

- Every time I traveled the road
- Most of the time I traveled the road
- At least half the times I traveled the road
- Less than half the times I traveled the road
- Never

3. For what purposes did you ride the shuttle in GNP during the visit when you were initially contacted? (Please check all that apply)

- To access a trail head for hiking
- To access a trail head for back country camping
- To tour the road
- To go on a picnic
- To view the scenery
- To get to a destination along the road
- To visit a developed area within the park
- To attend interpretive programs
- To visit visitor centers
- Other (please explain: \_\_\_\_\_)

4. What is the name of the location where you initially got on the shuttle?

- |  |  |
|--|--|
| <input type="checkbox"/> Apgar Transit Center  | <input type="checkbox"/> St. Mary Visitor Center   |
| <input type="checkbox"/> Fish Creek Campground | <input type="checkbox"/> Apgar Village             |
| <input type="checkbox"/> Apgar Campground      | <input type="checkbox"/> Sprague Creek Campground  |
| <input type="checkbox"/> Lake McDonald Lodge   | <input type="checkbox"/> Avalanche Creek           |
| <input type="checkbox"/> The Loop              | <input type="checkbox"/> Logan Pass                |
| <input type="checkbox"/> Siyeh Bend            | <input type="checkbox"/> Gunsight Pass Trailhead   |
| <input type="checkbox"/> St. Mary Falls Stop   | <input type="checkbox"/> Sunrift Gorge             |
| <input type="checkbox"/> Sun Point             | <input type="checkbox"/> Rising Sun                |
|  | <input type="checkbox"/> Don't know/can't remember |

5. What are the names of the locations where you got off the shuttle? (Please check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Apgar Transit Center  | <input type="checkbox"/> St. Mary Visitor Center   |
| <input type="checkbox"/> Fish Creek Campground | <input type="checkbox"/> Apgar Village             |
| <input type="checkbox"/> Apgar Campground      | <input type="checkbox"/> Sprague Creek Campground  |
| <input type="checkbox"/> Lake McDonald Lodge   | <input type="checkbox"/> Avalanche Creek           |
| <input type="checkbox"/> The Loop              | <input type="checkbox"/> Logan Pass                |
| <input type="checkbox"/> Siyeh Bend            | <input type="checkbox"/> Gunsight Pass Trailhead   |
| <input type="checkbox"/> St. Mary Falls Stop   | <input type="checkbox"/> Sunrift Gorge             |
| <input type="checkbox"/> Sun Point             | <input type="checkbox"/> Rising Sun                |
|  | <input type="checkbox"/> Don't know/can't remember |

6. During the visit to the park when you were initially contacted, did you use the shuttle to take any hikes that ended in a different location along the Going to the Sun Road than where it started?

- Yes  
 No (Please go to question 9)

7. If you answered yes to question 6, at what location did you begin your hike?

- |  |   |
|--|---|
| <input type="checkbox"/> Apgar Transit Center  | <input type="checkbox"/> St. Mary Visitor Center  |
| <input type="checkbox"/> Fish Creek Campground | <input type="checkbox"/> Apgar Village            |
| <input type="checkbox"/> Apgar Campground      | <input type="checkbox"/> Sprague Creek Campground |
| <input type="checkbox"/> Lake McDonald Lodge   | <input type="checkbox"/> Avalanche Creek          |
| <input type="checkbox"/> The Loop              | <input type="checkbox"/> Logan Pass               |
| <input type="checkbox"/> Siyeh Bend            | <input type="checkbox"/> Gunsight Pass Trailhead  |
| <input type="checkbox"/> St. Mary Falls Stop   | <input type="checkbox"/> Sunrift Gorge            |
| <input type="checkbox"/> Sun Point             | <input type="checkbox"/> Rising Sun               |
| <input type="checkbox"/> Other _____           |   |

8. If you answered yes to question 6, at what location did your hike end?

- |  |   |
|--|---|
| <input type="checkbox"/> Apgar Transit Center  | <input type="checkbox"/> St. Mary Visitor Center  |
| <input type="checkbox"/> Fish Creek Campground | <input type="checkbox"/> Apgar Village            |
| <input type="checkbox"/> Apgar Campground      | <input type="checkbox"/> Sprague Creek Campground |
| <input type="checkbox"/> Lake McDonald Lodge   | <input type="checkbox"/> Avalanche Creek          |
| <input type="checkbox"/> The Loop              | <input type="checkbox"/> Logan Pass               |
| <input type="checkbox"/> Siyeh Bend            | <input type="checkbox"/> Gunsight Pass Trailhead  |
| <input type="checkbox"/> St. Mary Falls Stop   | <input type="checkbox"/> Sunrift Gorge            |
| <input type="checkbox"/> Sun Point             | <input type="checkbox"/> Rising Sun               |
| <input type="checkbox"/> Other _____           |   |

9. Did you have access to the following information sources about transportation at Glacier National Park?

- |  |  |
|--|--|
| Internet   | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Personal communications with park staff/volunteers | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Traveler radio information system (1610 am)        | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| *511 (cellular service)                            | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Printed Materials                                  | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Transit center electronic information              | <input type="checkbox"/> Yes <input type="checkbox"/> No |

10. How would you rate the usefulness of information from the following sources when planning your travel through Glacier National Park? (Circle one number for each item. If you did not have access to any of the items listed below, please circle NA)

	Poor	Fair	Average	Good	Excellent	Did not Access
Internet	1	2	3	4	5	NA
Personal communication with park staff/volunteers	1	2	3	4	5	NA
Traveler radio information system (1610 am)	1	2	3	4	5	NA
*511 (cellular service)	1	2	3	4	5	NA
Printed Materials	1	2	3	4	5	NA
Transit center electronic information	1	2	3	4	5	NA

11. Did you visit one of the transit centers within Glacier National Park? (Either St. Mary Visitor Center or Apgar Transit Center)

- Yes  
 No (Please go to question 13)

12. If you answered yes to question 11, how useful would you rate the electronic and print information you received at the transit center for planning your trip through Glacier National Park? (Please do not include personal communication with park staff/volunteers in this rating)

- Poor  Fair  Average  Good  Excellent

13. Please rate the park-operated shuttle service at Glacier National Park. (Circle one number for each item) If you did not use the park-operated shuttle during this visit, please go to question 14.

	Poor	Fair	Average	Good	Excellent
Interior cleanliness of buses	1	2	3	4	5
Exterior cleanliness of buses	1	2	3	4	5
Buses being on time	1	2	3	4	5
Comfort of bus	1	2	3	4	5
Drivers' professionalism	1	2	3	4	5
Frequency of service	1	2	3	4	5
Driving habits of bus drivers	1	2	3	4	5
Courtesy of drivers	1	2	3	4	5
Availability of information on shuttle system	1	2	3	4	5
Understandability of information on shuttle system	1	2	3	4	5
Consistency of operations	1	2	3	4	5
Shuttle stop design	1	2	3	4	5
Overall service	1	2	3	4	5

14. Including this trip, how many times have you visited Glacier National Park?

- Once only (this trip)  
 Two to three times  
 Four to six times  
 Six to ten times  
 More than ten times – about how many? \_\_\_\_\_  
 Don't know/can't remember

We would also like to know about you and your personal travel group. Please answer the following questions about yourself unless the question specifically asks about your travel group.

15. Do you have any type of National Park Service entrance pass?

No

Yes →

If yes, please indicate which:

National Park Pass

America the Beautiful (Interagency)  
Pass

Golden Eagle

Golden Age Passport

16. Were there any individuals in your personal travel group (including yourself) who can only walk limited distances?

Yes

No (**Skip to Question 19**)

17. If yes, which of the following factors limited the distance that one or more members of your personal travel group could walk. (Please check all that apply)

Pain/discomfort

Use of wheelchair

Use of walker/cane

Have a breathing or respiratory condition

Have small children

Prefer not to walk

Other (Please specify: \_\_\_\_\_)

18. Did your personal travel group encounter any access or service problems in the park as a result of the factor(s) you identified in question 17 above?

Yes

No

19. Please indicate whether you are:

Male

Female



20. Are you Hispanic or Latino?

- Yes
- No

21. What is your race? (Please check one or more.)

- Asian
- American Indian or Alaska Native
- Black or African American
- Native Hawaiian or other Pacific Islander
- White

22. What is the highest level of education that you have completed? (Please check only one response)

- Less than high school graduate
- High school graduate (including GED)
- Some college, no degree
- Two-year college degree (Associates degree)
- Four-year college degree (Bachelor's degree)
- Graduate or professional degree
- Other (Please specify: \_\_\_\_\_)

23. Which of the following categories best describes your current employment status? (Please check only one response)

- Employed (full or part time)
- Homemaker
- Full time student
- Not employed
- Retired
- Other (please specify: \_\_\_\_\_)
- Decline to answer

24. Which of the following income groups best describes your total household income in 2006 before taxes? (Please check only one response)

- Less than \$25,000
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 or more
- Decline to answer

**Thank you for your participation!**

Please use the back of this page to make any further comments.

**PRIVACY ACT and PAPERWORK REDUCTION ACT statement:**

6 U.S.C. 1a-7 authorizes collection of this information. This information will be used by park managers to better serve the public. Response to this request is voluntary. No action may be taken against you for refusing to supply the information requested. Your name is requested for follow-up mailing purposes only. When analysis of the questionnaire is completed, all name and address files will be destroyed. Thus the permanent data will be anonymous. Please do not put your name or that of any member of your group on the questionnaire. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

**Burden estimate statement:** Public reporting burden for this form is estimated to average 6 minutes per response. Direct comments regarding the burden estimate or any other aspect of this form to Jack Potter; Glacier National Park, PO Box 128, West Glacier, MT 59936; 406-888-7821; jack\_potter@nps.go

### ***Appendix C: Contact Script***

Hello. I am \_\_\_\_\_ (name) and am working for the University of Montana in cooperation with Glacier National Park. We are doing a survey of visitors to Glacier National Park. This survey is sponsored by the National Park Service, and the information will be used by park managers to better serve the public. Would you be willing to fill out a short on-site survey followed by another short survey that you can fill out at home?

The Paperwork Reduction Act requires approval of all federal government surveys by the Office of Management and Budget. This survey has been approved under this Act. The questions I would like to ask today will only take about **nine minutes** to complete. At the end of this short survey, you will be asked to participate in a short take-home survey. If you choose to participate in the second survey, it will only take about 6 minutes. All of your answers are voluntary.

Thank you.

**Appendix D: Reminder Postcard**

Dear \_\_\_\_\_:

A couple of weeks ago you received a questionnaire that you agreed to fill out about your experience at Glacier National Park. If you have already returned your questionnaire, thank you!

If not, please complete it and mail it in. No postage is needed! This survey is sponsored by the National Park Service, and the information will be used by park managers to better serve the public.

This study is a cooperative effort of the University of Montana, Department of Society and Conservation and Glacier National Park. If you have misplaced the questionnaire or have any questions about the study, please contact us at the University of Montana, (406) 243-5184 or [wayne.freimund@umontana.edu](mailto:wayne.freimund@umontana.edu)

Thank you,

Wayne Freimund, Ph.D  
Professor  
Department of Society and Conservation  
Conservation

Melissa L. Baker  
Ph.D. Candidate  
Department of Society and  
Conservation