Mammoth Cave National Park Visitor Study

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Mammoth Cave National Park Visitor Study
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Visitor Services Project
Mammoth Cave National Park
Report Summary

- This report describes the results of a visitor study at Mammoth Cave National Park (NP) during July 23-29, 2006. A total of 660 questionnaires were distributed to visitor groups. Of those, 435 questionnaires were returned, resulting in a 65.9% response rate.

- This report profiles a random sample of Mammoth Cave NP visitors. Most results are presented in graphs and frequency tables. Summaries of visitor comments are included in the report and complete comments are included in the Visitor Comments Appendix.

- Thirty-one percent of visitor groups were in groups of five or more, 38% were in groups of three or four, and 28% were groups of two. Seventy-three percent of the visitor groups were family groups. Forty percent of visitors were ages 36-55 years and 31% were ages 15 years or younger.

- United States visitors were from Kentucky (21%), Ohio (14%), Indiana (13%), and 34 other states. International visitors, comprising 3% of the total visitation, were from Canada (26%), the Netherlands (15%), China (11%), Poland (11%), and 9 other countries.

- Ninety-five percent of visitors were visiting Mammoth Cave NP for the first time during the six months prior to the survey. Eighty-five percent of visitors were first time visitors during the past five years. Many groups (63%) spent less than 24 hours at the park; 37% spent more than 24 hours at the park.

- Prior to this visit, visitor groups most often obtained information about Mammoth Cave NP through the NPS park website (57%), previous visits (41%), and friends/relatives/word of mouth (35%). Six percent of visitor groups did not obtain any information about the park before their visit.

- For 51% percent of visitor groups, Mammoth Cave NP was their primary destination. Most visitor groups (76%) cited visiting Mammoth Cave NP as their reason for visiting the Mammoth Cave NP area (within 30 miles of the park).

- Most visitor groups (84%) used services in the "gateway" communities of Cave City, Park City, Brownsville, Horse Cave, Munfordville, and Bowling Green. The most common services used included eating a meal (81%) and buying gasoline (66%). Many visitor groups (63%) stayed overnight away from home in the park or in the area. Most visitor groups stayed one or two nights in the park (74%) or in the area (75%). In the park, 65% of groups stayed in the hotel, while outside the park 79% stayed in lodges, motels, hotels, cabins, etc.

- Prior to their visit, 57% of visitor groups were aware of the cave tour reservation system. Eighty-six percent rated the quality of the cave tour reservation system as "very good" or "good." Most visitor groups (91%) took a cave tour, with the Frozen Niagara (40%) and Historic Tours (37%) being the most popular. Visitor groups provided much additional information about their cave tour experiences.

- Regarding use, importance, and quality of visitor services and facilities, it is important to note the number of visitor groups that responded to each question. The most used services/facilities by visitor groups included the cave tour (88%), restrooms (82%), and park brochure/map (80%). The services/facilities that received the highest combined proportions of "extremely important" and "very important" ratings included cave tour (94%, N=359), restrooms (93%, N=337), and campground (88%, N=41). The services/facilities that received the highest combined proportions of "very good" and "good" quality ratings included cave tour (94%, N=355), assistance from park staff (93%, N=248), and assistance from visitor center information desk (92%, N=268).

- Most visitor groups (93%) rated the overall quality of facilities, services, and recreational opportunities at Mammoth Cave NP as "very good" or "good." Less than 2% of visitor groups rated the overall quality as "very poor" or "poor."

For more information about the Visitor Services Project, please contact the Park Studies Unit at
the University of Idaho, phone (208) 885-7863 or at the following website http://www.psu.uidaho.edu

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INTRODUCTION

This report describes the results of a visitor study at Mammoth Cave NP during July 23-29, 2006 by the National Park Service (NPS) Visitor Services Project (VSP), a part of the Park Studies Unit (PSU) at the University of Idaho.

Organization of the report

The report is organized into three sections.

Section 1: **Methods**. This section discusses the procedures, limitations, and special conditions that may affect the results of the study.

Section 2: **Results**. This section provides summary information for each question in the questionnaire and includes a summary of visitor comments. The presentation of the results of this study does not follow the same order of questions in the questionnaire.

Section 3: **Appendices**

   Appendix 1: The *Questionnaire* contains a copy of the original questionnaire distributed to groups.

   Appendix 2: *Additional Analysis* contains a list of options for cross-references and cross comparisons. These comparisons can be analyzed within park or between parks. Results of additional analyses are not included in this report as they may only be requested after the results of this study have been published.

   Appendix 3: Decision rules for checking non-response bias

   Appendix 4: *Visitor Services Project Publications* contains a complete list of publications by the PSU. Copies of these reports can be obtained by contacting the PSU office at (208) 885-7863 or visiting the website: http://www.psu.uidaho.edu/vsp/reports.htm.

   Visitor Comments Appendix: A separate appendix contains visitor responses to open-ended questions. It is bound separately from this report due to its size.

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Presentation of the results

Results are represented in the form of graphs (see example below), scatter plots, pie charts, tables, or text.

SAMPLE ONLY

1: The figure title describes the graph's information.

2: Listed above the graph, the "N" shows the number of individuals or visitor groups responding to the question. If "N" is less than 30, "**CAUTION!**" is shown on the graph to indicate the results may be unreliable.

   * appears when total percentages do not equal 100 due to rounding.

   ** appears when total percentages do not equal 100 because visitors could select more than one answer choice.

3: Vertical information describes the response categories.

4: Horizontal information shows the number or proportions of responses in each category.

5: In most graphs, percentages provide additional information.
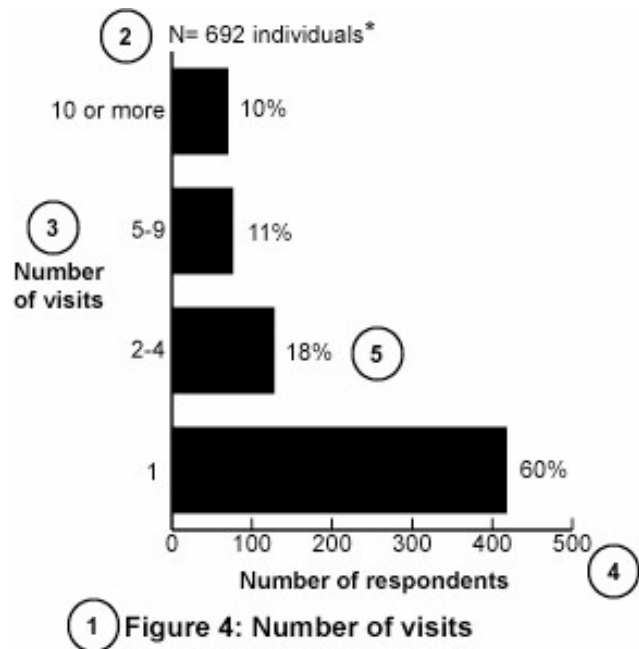
Figure 4: Number of visits

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

2

METHODS

Survey Design

Sample size and sampling plan

All VSP questionnaires follow design principles outlined in Don A. Dillman's book *Mail and Internet Surveys: The Tailored Design Method* (2000). Based on this methodology, the sample size was calculated based on park visitation statistics of previous years.

Brief interviews were conducted with visitor groups, and 660 questionnaires were distributed to a random sample of visitor groups that arrived at Mammoth Cave NP during the period from July 23-29, 2006. Table 1 presents the locations and numbers of questionnaires distributed at each location. These locations were selected based on park visitation statistics and advice from park staff.

Table 1: Questionnaire distribution location
N=number of questionnaires distributed

Sampling site	N	Percent
Visitor center	350	53
Lodge	165	25
Green River Ferry	95	14
Sand Cave parking lot	31	5
Sloans Crossing Pond parking lot	14	2
Campgrounds	5	1
Total	660	100

Questionnaire design

The Mammoth Cave NP questionnaire was developed at a workshop held with park staff to design and prioritize the questions. Some of the questions were comparable with VSP studies conducted at other parks, while others were customized for Mammoth Cave NP. Many questions asked visitors to choose answers from a list of responses, often with an open-ended option, while others were completely open-ended.

No pilot study was conducted to test Mammoth Cave NP questionnaire. However, all questions followed OMB guidelines and/or were used in previous surveys. Thus, the clarity and consistency of the survey instrument have been tested and supported.

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Survey procedure

Visitor groups were greeted, briefly introduced to the purpose of the study, and asked to participate. If visitors agreed, an interview lasting approximately two minutes, with the person with the next birthday, was used to determine group size, group type, and the age of the group member (at least 16 years of age) who would complete the questionnaire. These individuals were asked for their names, addresses, and telephone numbers to mail them a reminder/thank you postcard and follow-ups. Visitor groups were given a questionnaire, asked to complete it after their visit, and then return it by mail. The questionnaires were pre-addressed and affixed with a U.S. first class postage stamp.

Two weeks following the survey, a reminder/thank you postcard was mailed to all participants. Replacement questionnaires were mailed to participants who had not returned their questionnaires four weeks after the survey. Seven weeks after the survey, a second round of replacement questionnaires was mailed to visitors who had not returned their questionnaires. A final replacement questionnaire was mailed to non-respondents 10 weeks after the survey.

Data Analysis

Returned questionnaires were coded and the information was entered into a computer using custom and standard statistical software applications—Statistical Analysis System (SAS) or Statistical Package for the Social Sciences (SPSS. Descriptive statistics and cross-tabulations were calculated for the coded data and responses to open-ended questions were categorized and summarized.

*total percentages do not equal 100 due to rounding
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Limitations

Like all surveys, this study has limitations that should be considered when interpreting the results.

1. This was a self-administered survey. Respondents completed the questionnaire after their visit, which may have resulted in poor recall. Thus, it is not possible to know whether visitor responses reflected actual behavior.

2. The data reflect visitor use patterns to the selected sites during the study period of July 23-29, 2006. The results present a 'snapshot-in-time' and do not necessarily apply to visitors during other times of the year.

3. Caution is advised when interpreting any data with a sample size of less than 30, as the results may be unreliable. Whenever the sample size is less than 30, the word "CAUTION!" is included in the graph, figure, table, or text.

4. Occasionally, there may be inconsistencies in the results. Inconsistencies arise from missing data or incorrect answers (due to misunderstood directions, carelessness, or poor recall of information). Therefore, refer to both the percentage and N (number of individuals or visitor groups) when interpreting the results.

Special Conditions

The weather ranged from party cloudy and warm, to sunny and hot with a thunderstorm and rain on one day.

*total percentages do not equal 100 due to rounding
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RESULTS

Visitor Groups Contacted

At Mammoth Cave NP, 694 visitor groups were contacted and 660 of these groups (95.1%) accepted the questionnaire. Questionnaires were completed and returned by 435 visitor groups, resulting in a 65.9% response rate for this study. The two variables used to check non-response bias were age of the group member who actually completed the questionnaire and group size.

Checking Non-response Bias

Table 2 shows insignificant differences between respondent and non-respondent ages and group sizes. See Appendix 3 for more details of the non-response bias checking procedure.

Table 2: Comparison of respondents and non-respondents

| | Respondent | | Non-respondent | | p-value |
Variable	N	Average	N	Average	(t-test)
Age	420	45.9	108	42.0	0.092
Group size	426	4.4	108	4.9	0.133

Two of the interviewers did not gather all of the required information during the initial interviews, affecting the amount of data available for the non-response bias check (see non-respondent N's above).

The results show that there is no significant difference between respondent and non-respondent ages and insignificant differences in group sizes. Therefore, the non-response bias was judged to be insignificant for the data that is available.

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Demographics

Visitor group size

Question 18a

> For this visit to Mammoth Cave NP, how many people were in your personal group, including yourself?

Results

- 38% were in groups of three or four (see Figure 1).

- 31% of visitors were in groups of five or more.

- 28% were in groups of two.

N=426 visitor groups

Number of people

Number of respondents
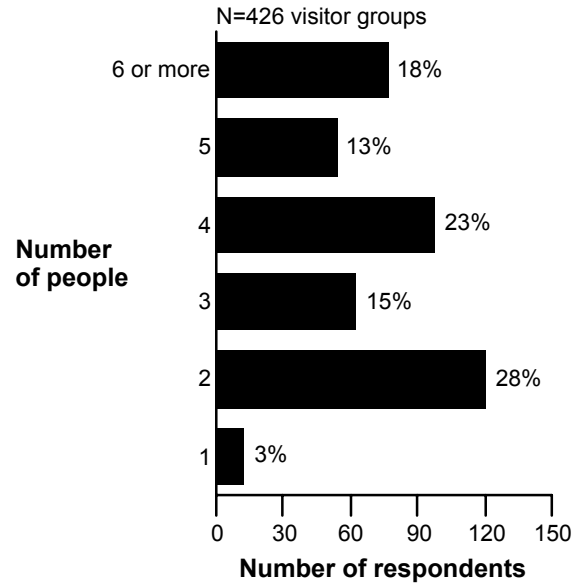
Figure 1: Visitor group size

Visitor group type

Question 19

> On this visit, what kind of personal group (not guided tour/school group) were you with?

Results

- 73% of visitor groups were made up of family members (see Figure 2).

- 9% were with family and friends.

- "Other" groups (4%) included:

> Cub scouts
> Girl scouts
> Church

N=425 visitor groups

Type of group

Number of respondents
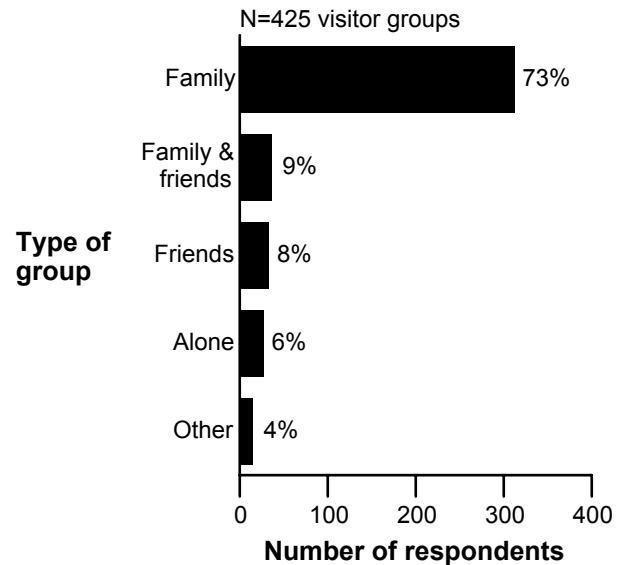
Figure 2: Visitor group type

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

United States visitors by state of residence

Question 20b
    What is your state of residence?

Note: Response was limited to seven
    members from each visitor group.

Results
- U.S. visitors comprised 97% of total visitation to the park.

- 21% of visitors came from Kentucky (see Table 3 and Map 1).

- 14% were from Ohio.

- 13% were from Indiana.

- Smaller proportions came from 34 other states and Washington, DC.

Table 3: United States visitors by state of residence*

State	Number of visitors	Percent of U.S. visitors N=1383 individuals	Percent of total visitors N=1430 individuals
Kentucky	294	21	21
Ohio	188	14	13
Indiana	182	13	13
Michigan	118	9	1
Illinois	78	6	1
Tennessee	78	6	1
Florida	70	5	1
Georgia	66	5	1
Texas	53	4	1
Pennsylvania	42	3	1
Alabama	20	1	1
Missouri	20	1	1
Washington	4	1	<1
24 other states and Washington, D.C.	81	6	6

Map 1: Proportions of United States visitors by state of residence

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

International visitors by country of residence

Question 20b
   What is your country of residence (other than U.S.)?

Note: Response was limited to seven members from each visitor group.

Results

- International visitors comprised 3% of total visitation to the park.

- 26% of visitors came from Canada (see Table 4).

- 15% came from Netherlands.

- 11% came from China.

- 11% came from Poland.

- Smaller proportions came from 9 other countries.

Table 4: International visitors by country of residence*

| Country	Number of visitors	Percent of international visitors N=47 individuals	Percent of total visitors N=1430 individuals
Canada	12	26	1
Netherlands	7	15	1
China	5	11	1
Poland	5	11	1
Austria	4	9	<1
England	4	9	<1
France	2	4	<1
Norway	2	4	<1
Peru	2	4	<1
Germany	1	2	<1
Romania	1	2	<1
Sweden	1	2	<1
Switzerland	1	2	<1

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Number of visits during last 6 months

Question 20c
How many times have you visited the park during the last 6 months (including this visit)?

Note: Response was limited to seven members from each visitor group.

Results
- 95% of visitors were visiting for the first time during the last 6 months (see Figure 3).

- 5% visited two or more times.

N=1231 individuals
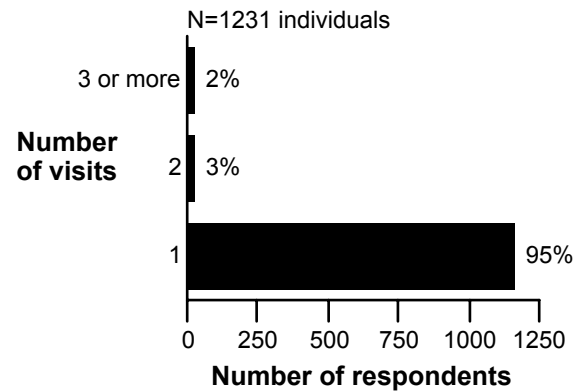
Figure 3: Number of visits to park during past 6 months

Number of visits during the past 5 years

Question 20d
How many times have you visited the park during the past 5 years (including this visit)?

Note: Response was limited to seven members from each visitor group.

Results
- 85% of visitors were visiting the park for the first time during the past 5 years (see Figure 4).

- 11% visited two or three times.

N=1034 individuals*
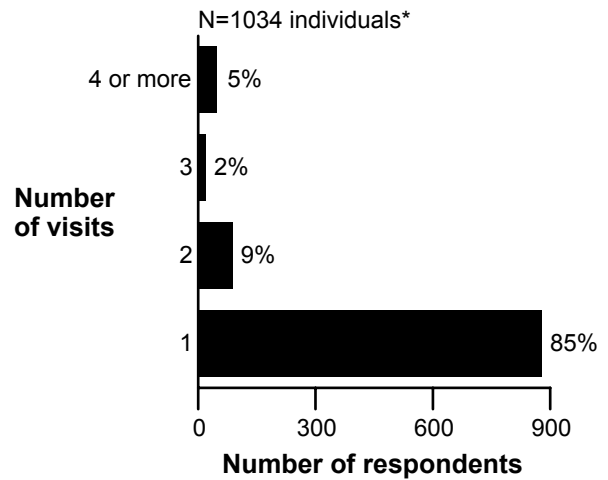
Figure 4: Number of visits to park during the past 5 years

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Visitor age

Question 20a
    For you and your personal group, what is your current age?

Note: Response was limited to seven members from each visitor group.

Results
- Visitor ages ranged from 1 to 80 years old.

- 40% of visitors were in the 36-55 years age group (see Figure 5).

- 31% were 15 years or younger.

N=1534 individuals*

Age group (years)

Age group	Percentage
76 or older	1%
71-75	1%
66-70	3%
61-65	4%
56-60	5%
51-55	9%
46-50	11%
41-45	10%
36-40	10%
31-35	5%
26-30	2%
21-25	4%
16-20	7%
11-15	13%
10 or younger	18%

Number of respondents
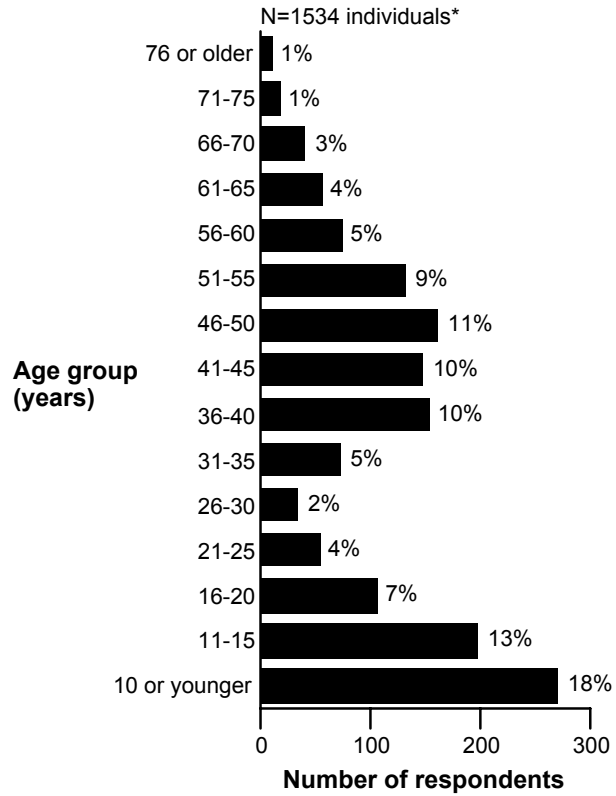
Figure 5: Visitor age

Visitor education

Question 22
    For you and each group member (age 16 or over) on this visit, please indicate the highest level of education completed.

Note: Response was limited to seven members from each visitor group.

Results
- 25% of respondents had some college (see Figure 6).

- 24% had a bachelor's degree.

- 23% had a high school diploma/GED.

N=1103 individuals*

Level of education

Level of education	Percentage
Graduate degree	17%
Bachelor's degree	24%
Some college	25%
High school graduate	23%
Some high school	10%

Number of respondents

Figure 6: Visitor education

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Respondent ethnicity

Question 21a
> For you only, are you Hispanic or Latino?

Results
- 3% of respondents were Hispanic or Latino (see Figure 7).

N=413 individuals

Hispanic or Latino?

Yes 3%

No 97%

Number of respondents
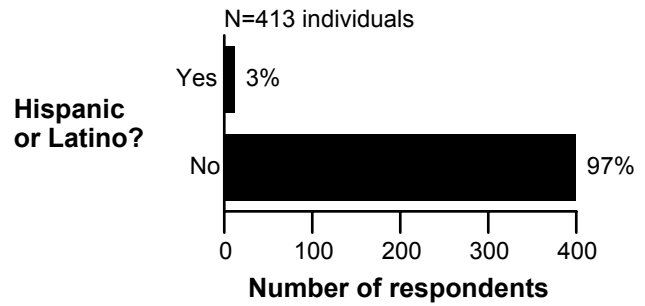
Figure 7: Respondent ethnicity

Respondent race

Question 21b
> For you only, which of these categories best indicates your race?

Results
- 92% of respondents were White (see Figure 8).

- 3% were Asian.

N=430 individuals**

Race

White 92%

Asian 3%

Black or African American 2%

American Indian/ Alaska Native 1%

Native Hawaiian/ other Pacific Islander 0%

Number of respondents

Figure 8: Respondent race

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Visitors with disabilities/impairments

Question 23a

Does anyone in your group have a physical condition that made it difficult to access or participate in park activities or services?

Results

- 9% of visitor groups had members with a physical condition that made it difficult to access or participate in park activities or services (see Figure 9).

N=425 visitor groups

Group member with disabilities?

Yes 9%

No 91%

Number of respondents
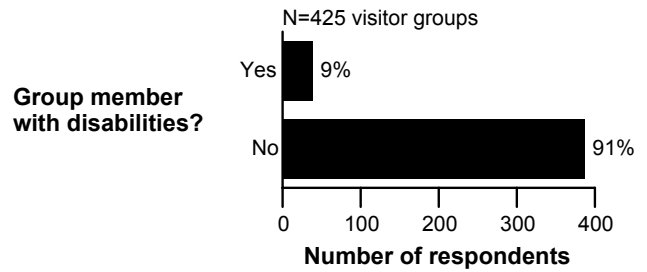
Figure 9: Visitors with a physical condition that made it difficult to access park activities/services

Question 23b

If YES, what park activities or services did the person(s) have difficulty accessing or participating in?

Results

- 63% of visitor groups had difficulty accessing trails in the cave (see Figure 10).

- 24% had difficulty accessing trails on the surface.

- 20% had difficulty accessing ranger-led programs.

- "Other" activities/services (14%) included:

    Cave
    Steps

N=36 visitor groups**

Activities/ services

Trails in cave 72%

Trails on surface 28%

Ranger-led programs 22%

Visitor center 8%

Restrooms 6%

Restaurant 0%

Campground 0%

Exhibits 0%

Other 14%

Number of respondents
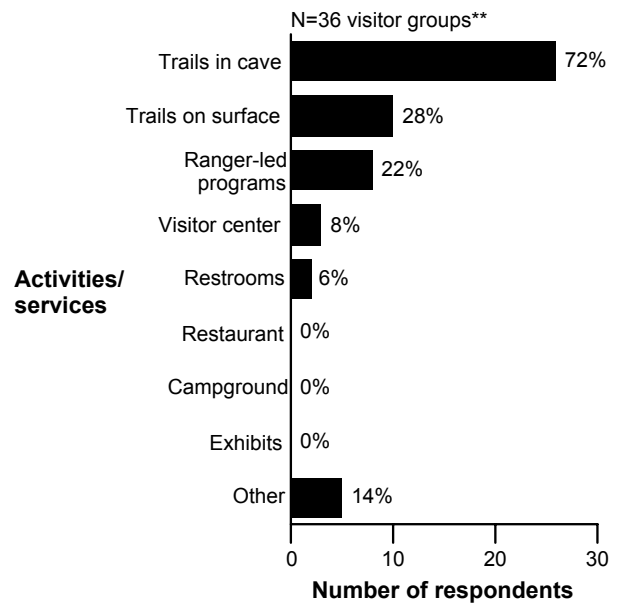
Figure 10: Activities/services that visitors had difficulty accessing

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Question 23c
  Because of the physical condition, what
  specific problems did the person(s) have?

  • Mobility disabilities/impairments (89%)
    were the most common (see Figure 11).

  • "Other" types of disabilities/impairments
    (14%) included:

        Breathing problems
        Diabetes
        Arthritis
        Back problems

N=35 visitor groups**

**Type of
disability/
impairment**

Mobility — 89%
Hearing — 6%
Visual — 0%
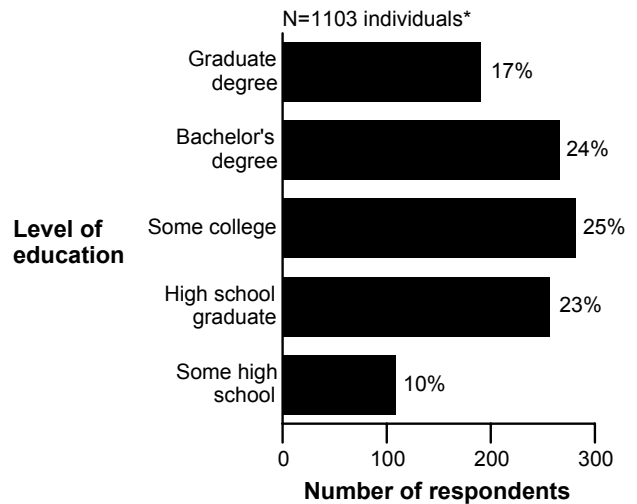Other — 14%

Number of respondents

Figure 11: Type of disability/impairment

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Trip/Visit Characteristics and Preferences

Information sources prior to visit

Question 1a
   Prior to this visit, how did you and your group obtain information about Mammoth Cave National Park?

Results
- 6% of visitor groups did not obtain any information about the park prior to their visit (see Figure 12).

- As shown in Figure 13, of those who obtained information (94%), the most common sources of information included:

   57% NPS park website
   41% Previous visit
   35% Friends/relatives/word of mouth

- "Other" sources of information (8%) included:

   Grew up in area
   Caving groups
   Business associate
   Encyclopedia
   Reunion

N=435 visitor groups

Obtain information about park prior to visit?

Yes 94%
No 6%

Number of respondents
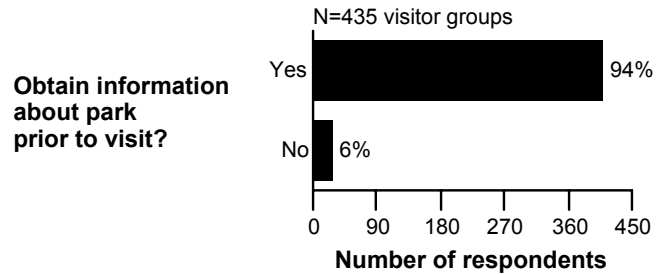
Figure 12:   Visitors who obtained information about park prior to this visit

N=409 visitor groups**

Source	
NPS park website	57%
Previous visit	41%
Friends/relatives/word of mouth	35%
Maps/brochures	21%
Travel guides/tour books	20%
Highway signs	11%
Other websites	11%
State welcome center	10%
Telephone/written/email inquiry	7%
Newspaper/magazine articles	5%
Other NPS site	3%
TV/radio programs/videos	2%
Other	8%

Number of respondents
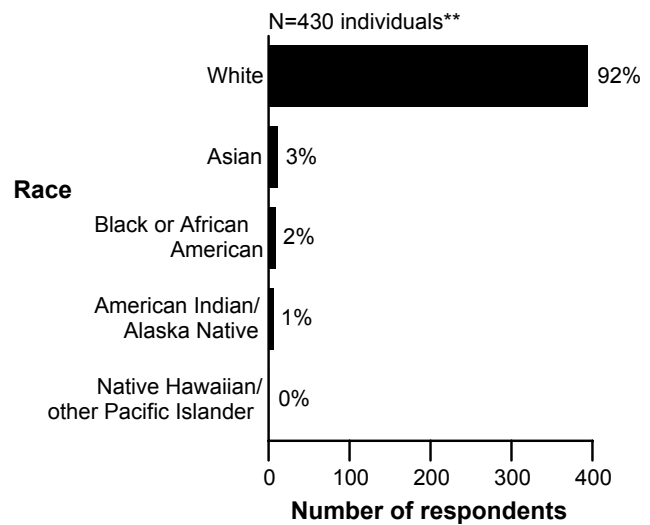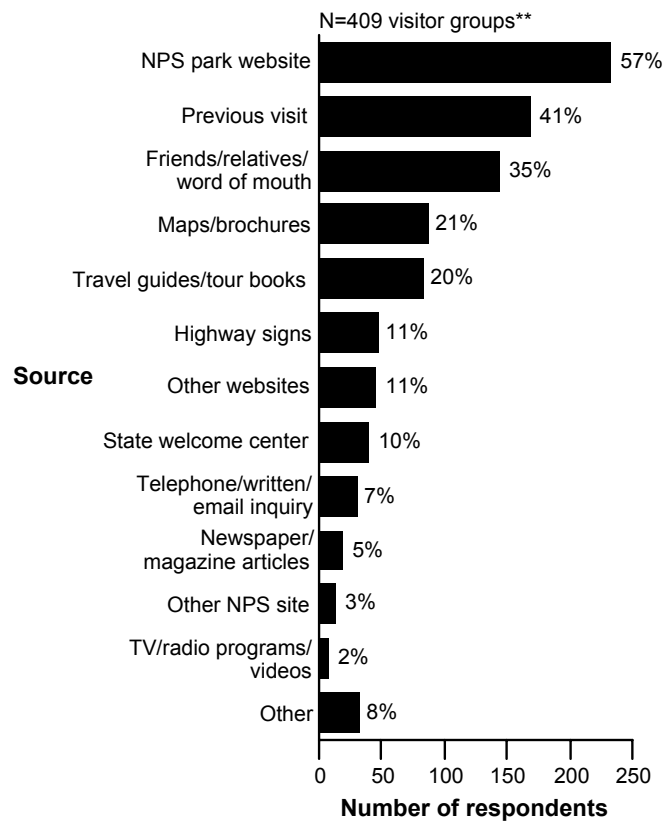
Figure 13:   Sources of information used by visitor groups prior to this visit

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Question 1b

From the sources you used prior to this visit, did you and your group receive the type of information about the park that you needed?

Results

- 92% of visitor groups obtained the information they needed to prepare for this trip to Mammoth Cave NP (see Figure 14).

N=395 visitor groups

Receive needed information?

Yes — 92%
No — 5%
Not sure — 3%

Number of respondents
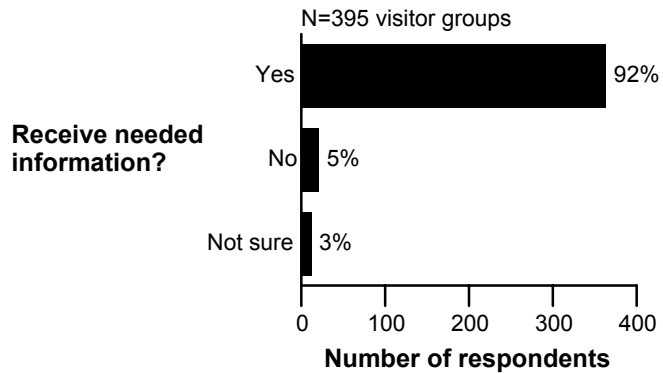
Figure 14: Visitor groups who obtained needed information prior to this visit to Mammoth Cave NP

Question 1c

If NO, what was the information did you and your group needed that was not available?

Cave tour information, including reservations, prices, tour options, clothing to wear, lunch, etc.
Park cabins
Hiking trails
Better directions from Cave City

Results - **Interpret with CAUTION!**

- Additional information that visitor groups (N=21) needed but was not available through these sources included:
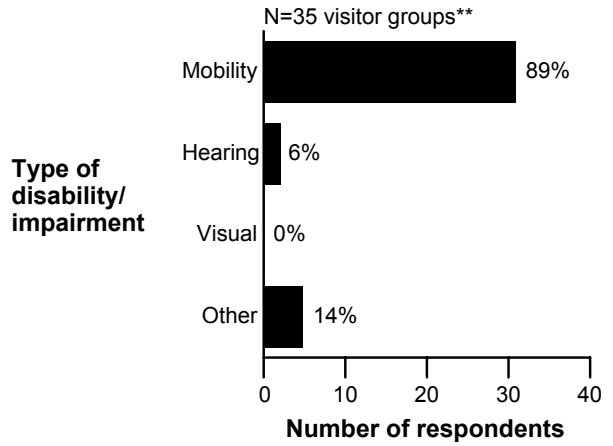
*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Primary reason for visiting Mammoth Cave National Park area

Question 4
   What was your primary reason for visiting the Mammoth Cave NP area (within 30 miles of the park)?

Results
- 4% of visitor groups were residents of the local area (see Figure 15).

- As shown in Figure 16, the most common primary reasons for visiting the Mammoth Cave NP area were:

      76% Visit Mammoth Cave NP
       6% Visit other area attractions

- Open-ended responses to "other attractions in the area" included:

      Dinosaur World
      Corvette Museum
      Alpine Slide
      Other caves
      Lake Barkley
      Lake Cumberland
      Beach Bend Park
      Fort Knox
      Six Flags Kentucky
      Abraham Lincoln Birthplace
      Nashville

N=417 visitor groups
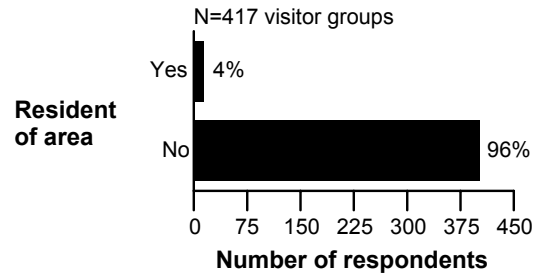
Figure 15: Resident of Mammoth Cave NP area (within 30 miles of the park)

N=402 visitor groups**
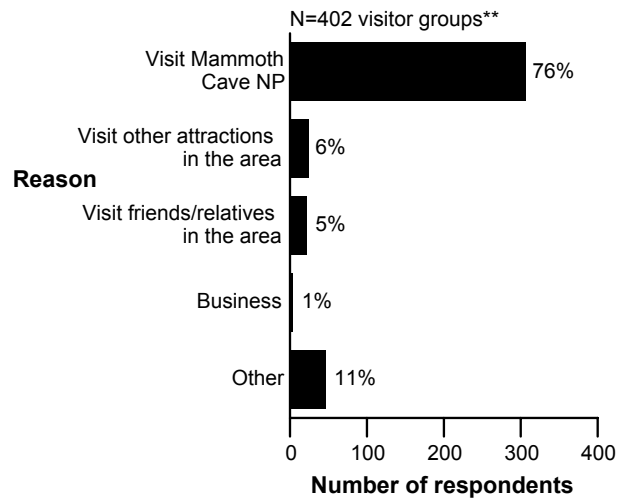
Figure 16: Reason for visiting Mammoth Cave NP area (within 30 miles of the park)

- "Other" primary reasons (11%) for visiting included:

      Traveling through to another
         destination
      Had time to stop
      Family reunion
      Show to friends/family
      Vacation

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Travel plans

Question 3
> For this trip, please explain how your visit to Mammoth Cave NP fit into your group's travel plans.

Results

- 51% of visitor groups said the park was their primary destination (see Figure 17).

- The park was one of several destinations for 41% of visitor groups.

N=431 visitor groups

How park fit into travel plans

Primary destination — 51%
One of several destinations — 41%
Not a planned destination — 8%

Number of respondents
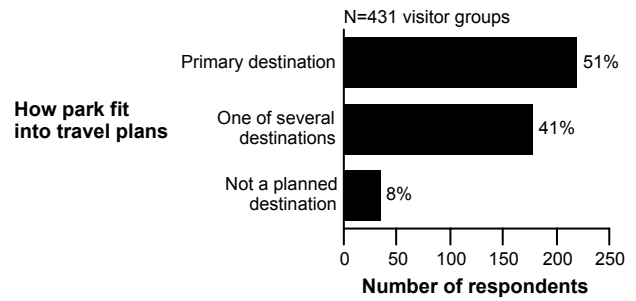
Figure 17: Park visit as part of travel plans

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Services used in "gateway" communities

Question 5a

What services did you and your group use in the "gateway" communities of Cave City, Park City, Brownsville, Horse Cave, Munfordville, and Bowling Green that were specifically related to this park visit?

N=430 visitor groups

Use services in gateway community?

Yes ▬ 84%

No ▬ 16%

0   100   200   300   400
Number of respondents

Results

- 84% of visitor groups used services in "gateway" communities (see Figure 18).

Figure 18: Use service in "gateway" communities?

- The most commonly used services (see Figure 19) included:

  81% Eating a meal
  66% Buying gasoline
  44% Shopping
  41% Staying in motel

- "Other" services used (10%) included:

  Buying groceries
  Visiting other caves
  Shopping for souvenirs/gifts
  Horseback riding
  Playing miniature golf
  Staying in timeshare condo
  Visiting museum
  Buying tires
  Visiting rock shops
  Visiting Alpine Slide
  Driving go carts
  Going to movie
  Going to Farmers Market

N=360 visitor groups**

Service

Eat a meal ▬ 81%
Buy gasoline ▬ 66%
Shop ▬ 44%
Stay in motel ▬ 41%
Obtain info about MACA ▬ 26%
Obtain other travel/tourism info ▬ 23%
Stay in RV park/campground ▬ 14%
Other ▬ 10%

0   100   200   300
Number of respondents

Figure 19: Services used in "gateway" communities

Question 5b

Do you have any comments about the above services or services you would like to see provided?

Results

- See responses in Table 5 on the next page.

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 5: Comments about existing or needed "gateway" community services
some visitor groups made more than one comment.

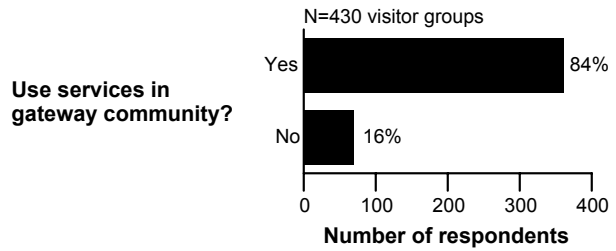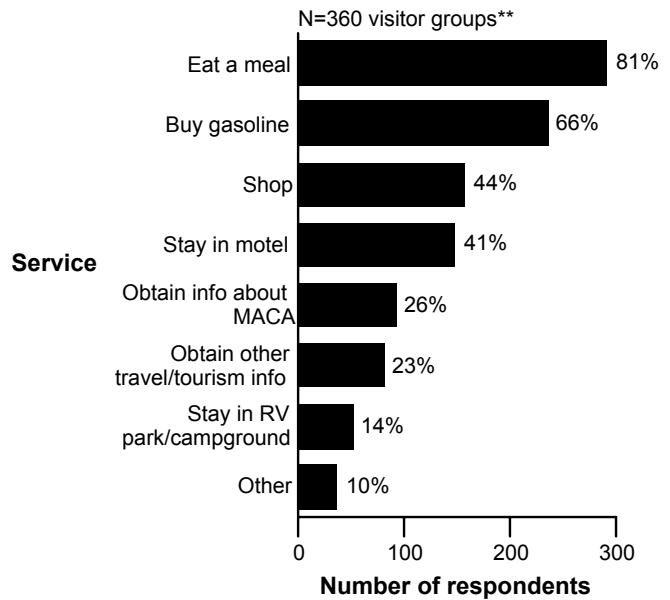| Service	Comment
Food services	
Meals	Need more places to dine-in (no fast food)
Meals	Need better quality and variety
Meals	Excellent
Meals	Cave City/Horse Cave need more than fast foods
Food	Need more restaurants to choose from
Food	Service was limited to fast food - yuck
Food/meals	Area needs more restaurants that serve alcohol
Food	Need more decent restaurants in Cave City
Food	
Food	Wish more choices
Chinese restaurant	No buffets nearby
Coffee house	i.e. Starbucks/Dunkin' Donuts, etc.
Pizza Hut	Good service
Dining	Better quality restaurants (too much fast food)
Dining	Too much fast food, not enough well known non-fast food options (e.g. Cracker Barrel)
Restaurant/café in MCNP	Excellent service- food was good
	Our food service was great
	Better choice of food at park
	Need more restaurants
	Food was quick and good
Lodging/camping	
Motel	Need more places to stay overnight
Motel	Very good
Barron State Park Campground	Pool should be available to campers, not just lodge guests
Lodge	We stayed in cabins - they really need to be updated. Smelled musky. Poor quality.
Motel	Hampton Inn - beds were small. No rollaway available. No mini-fridge.
Motel	Motel room was not kept up to standard for a park!
Hampton Inn	Very nice hotel!!
	We stayed at the Ramada Inn in Bowling Green (Exit 22). Very nice accommodation, full breakfast in attached restaurant, outside pool, reasonable price $59.
Housing	Need better quality motels
B&B	Attempted to stay at a local B&B, but was disappointed by the lack of upkeep
Camping	Electric hookups
Camping	On our way back south we are returning to camp and cave tour
Cave campground	Needs more campsites with electricity and water hookups

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 5: Comments about existing or needed "gateway" community services (continued)

Service	Comment
Other services	
	The area is somewhat less "commercialized" than some of the other national parks (such as the super-touristy Smoky Mtns area, for example) and this made our experience really nice and relaxed and on-target; low-key and perfect
Glitzy	Tacky
Gas station	Friendly and gave very good specific directions
Car repair	Area needs car service center
	Car repair at Munfordville, excellent and fast
Gift shop inside main door on right	Good selection of gifts, cards and souvenirs at a reasonable price.
Shop	Very satisfied with selection
Store	Store should stay open till 9 p.m.
Cigars, cigarettes	There aren't any available
Information	Very satisfied
	I would like to see more displays such as: local wildlife in natural settings, working beehive, flowers, insect displays, swimming pool
	Better directional maps
Trail maps	
Trail brochure	Hiking trails were clearly marked
Self tour	A little longer view
Post office in park	Closed too early (4 p.m.) no place to buy stamps other than post office
All services	Were excellent, clean, quick, and all personnel were professional and friendly
Elevator	Not working
Big Mikes Rock Shop	Wonderful people were lovely
Friendly folks	Good referrals
	Great
Entertainment	Nothing whatever to do in Cave City, it's a pit
Jellystone	Loved it!
Attractions	Need more attractions like Gatlinburg
Swimming	There is no place to swim
All	Friendly
	All good
	Overall it was a relaxing trip, convenient
	We had a good time.
	Excellent services everywhere thanks!
	Playground area for young children
	More bike trails!!
	Bicycle rental
	Pets allowed in park, but on a leash
	Keep this gorgeous park natural, clean and friendly!
	Would a shuttle be offered to different caves? Or maybe one exists and I'm not aware? Not that we'd use it--just a ?
	Lights at beaver pond for night walkers
	Offers to explore parts of caves no one has ever seen before! I want to see what no one has seen before!

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Adequacy of directional signs

Question 17a
   Were the signs directing you to
   Mammoth Cave National Park
   adequate?

Signs on interstates

Results
   • 90% of visitor groups reported
     directional signs on interstates were
     adequate (see Figure 20).

N=410 visitor groups

**Interstate
signs adequate?**

Yes 90%
No 6%
Not sure 4%

Number of respondents
0   100   200   300   400
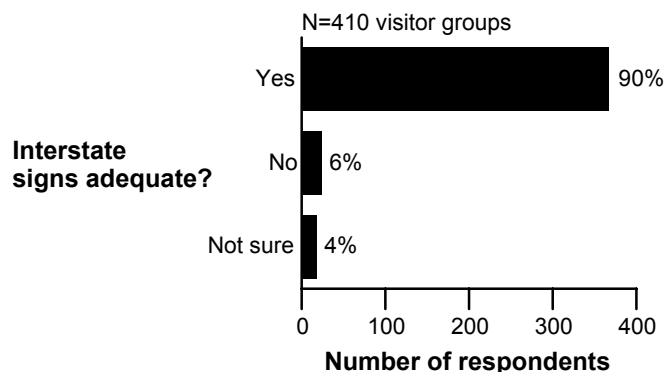
**Figure 20: Adequacy of directional signs on
interstates**

Signs on state highways

Results
   • 82% of visitor groups reported that
     state highway directional signs were
     adequate (see Figure 21).

   • 10% said the signs were not
     adequate.

N=405 visitor groups

**State highway
signs adequate?**

Yes 82%
No 10%
Not sure 8%

Number of respondents
0   70   140   210   280   350
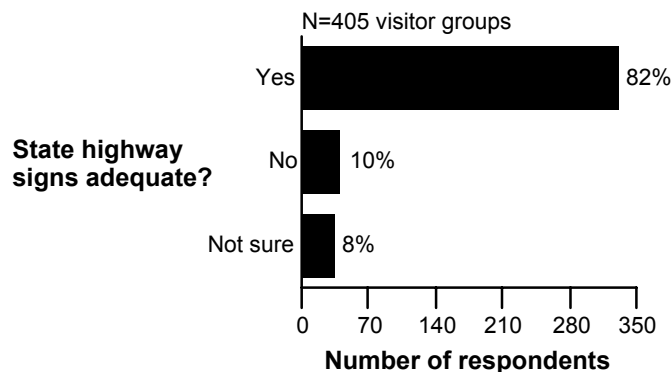
**Figure 21: Adequacy of directional signs on
state highways**

Question 17b
   If NO, please explain the problem.

Results
   • Table 6 shows the problems with
     directional signs.

Table 6: Problems with directional signs
N=55 comments;
some visitor groups made more than one comment.

Problem	Number of times mentioned
Signs confusing	33
Lack of signs	15
Wasn't on interstate	3
Wasn't driving/paying attention	2
Signs need to be larger	2

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Overnight accommodations

Question 7a

On this trip, did you and your group stay overnight away from home in the Mammoth Cave NP area (within 30 miles of the park)?

Results

- 63% of visitor groups stayed overnight away from home in the Mammoth Cave NP area (see Figure 22).

N=433 visitor groups
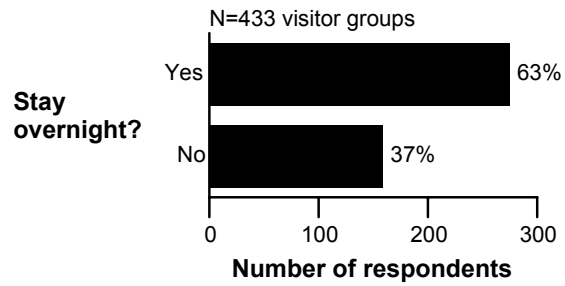
Figure 22: Overnight stay away from home in the Mammoth Cave NP area

Question 7b

Please list the number of nights you and your group stayed in Mammoth Cave NP.

Results

- 74% of visitor groups spent one or two nights in the park (see Figure 23).

- 27% spent three or more nights.

N=109 visitor groups**
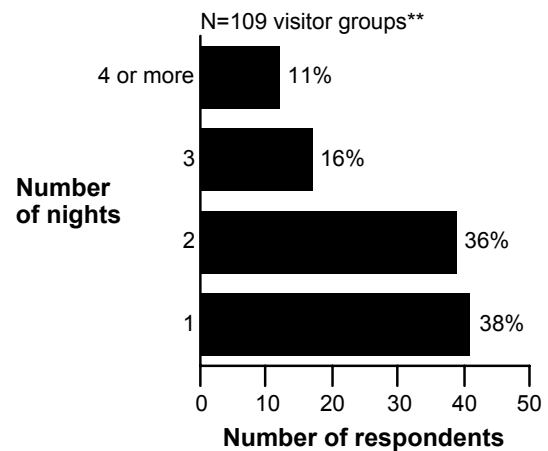
Figure 23: Number of nights inside the park

Question 7b

Please list the number of nights you and your group stayed in the Mammoth Cave NP area (within 30 miles of the park).

Results

- 75% of visitor groups spent one or two nights in the Mammoth Cave NP area (see Figure 24).

- 10% spent five or more nights.

N=176 visitor groups
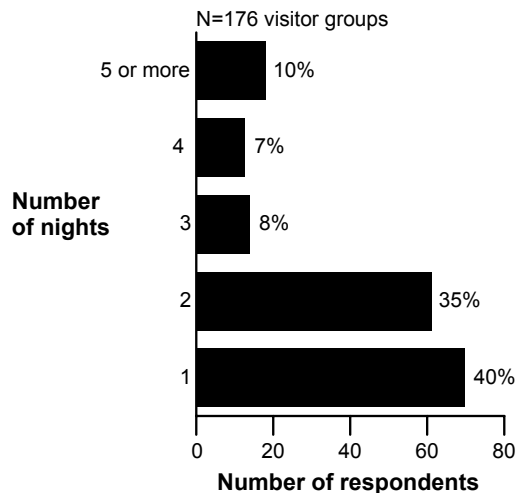
Figure 24: Number of nights in the Mammoth Cave NP area

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

23

Question 7c

In what type of lodging did you and your group spend the night(s) inside the park?

Results

- 65% of visitor groups stayed in the hotel inside the park (see Figure 25).

- 33% stayed in a campground/trailer park.

- "Other" types of lodging (27%) included:

  RV
  Tent
  Mammoth Cave Research Center

  NOTE: Many of the respondents misunderstood the question and listed Mammoth Cave Hotel or cabin in the "other" category.

N=141 visitor groups**
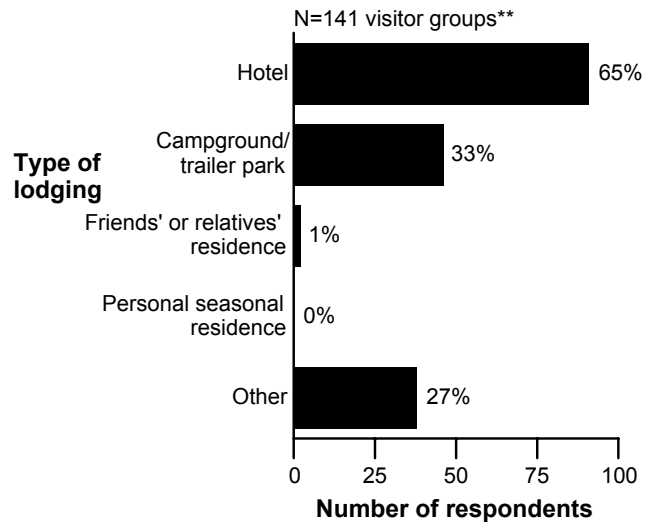
Figure 25: Type of lodging visitor groups used inside the park

Question 7d

In what type of lodging did you and your group spend the night(s) in the Mammoth Cave NP area (within 30 miles of the park)?

Results

- 79% of visitor groups stayed in lodges, motels, hotels, cabins, bed & breakfasts, etc. (see Figure 26).

- 14% camped in a campground/trailer park.

- "Other" types of lodging (28%):

  Note: all of the respondents misunderstood the question and listed motels, hotels cabins, rented condos, and campgrounds in the "other" category.

N=169 visitor groups**
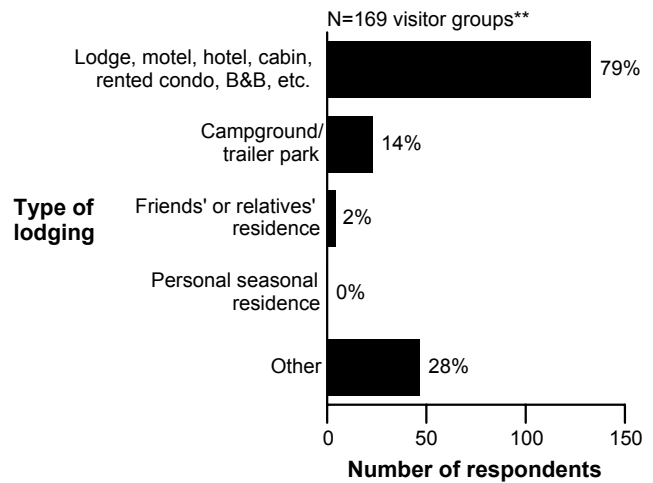
Figure 26: Type of lodging visitor groups used in the Mammoth Cave NP area (within 30 miles of the park)

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Overnight stay locations on night before park visit

Question 8a

Where did you and your group stay on the night before you arrived at Mammoth Cave NP?

Results

- As shown in Table 7, the most common locations were:

  Cave City, KY
  Louisville, KY
  Nashville, TN
  Bowling Green, KY

Table 7: Overnight stay on night before park visit
N=410 places;
some visitor groups listed more than one location.

City/Town and State	Number of times mentioned
Cave City, KY	51
Louisville, KY	47
Nashville, TN	27
Bowling Green, KY	23
Elizabethtown, KY	13
Indianapolis, IN	11
Horse Cave, KY	8
Lexington, KY	8
Cincinnati, OH	5
Bardstown, KY	4
Chicago, IL	4
Clarksville, TN	4
Evansville, IN	4
Glasgow, KY	4
Corydon, KY	2
Dayton, KY	2
Barren River Lake State Resort Park, KY	3
Columbus, OH	3
Danville, KY	3
Florence, KY	2
Franklin, KY	3
French Lick, KY	2
Fort Knox, KY	2
Akron, OH	2
Atlanta, GA	2
Great Smoky Mts. NP, TN	2
Madisonville, KY	2
Mt. Washington, KY	2
Munfordville, KY	2
Murfreesboro, TN	2
Nancy, KY	2
Owensboro, KY	2
Paris, KY	2
Pigeon Forge, TN	2
Scottsville, KY	2
Smyrna, GA	2
Somerset, KY	2
Valparaiso, IN	2

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 7: Overnight stay on night before park visit (continued)

City/Town and State	Number of times mentioned
Allen Park, MI	1
Alpharetta, GA	1
Alvada, OH	1
Athens, OH	1
Batavia, OH	1
Batesville, IN	1
Beavercreek, OH	1
Bensenville, IL	1
Berea, KY	1
Between MCNP & Bowling Green, KY	1
Birdseye, IN	1
Blue Licks State Park, KY	1
Bremen, KY	1
Brighton, MI	1
Brookville, IN	1
Browder, KY	1
Brownsville, KY	1
Burdick, KY	1
Burlington, KY	1
Burnside, KY	1
Caledonia, MI	1
Calvert City, KY	1
Carmel, IN	1
Cartersville, GA	1
Celina, TN	1
Charleston, WY	1
Clanton, AL	1
Clarkson, KY	1
Cloudland Canyon State Park, GA	1
Coppell, TX	1
Covington, KY	1
Crawfordsville, IN	1
Crestwood, KY	1
Cumming, GA	1
Cynthiana, KY	1
Daytona Beach, FL	1
Dearborn, MI	1
Decatur, IL	1
Denver, CO	1
Derby, IN	1
Dickson, TN	1
Dillsboro, IN	1

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 7: Overnight stay on night before park visit (continued)

City/Town and State	Number of times mentioned
Dry Ridge, KY	1
Dunmore, OH	1
Fayetteville, TN	1
Empire, MI	1
Fairfield, OH	1
Fergus, Ontario, Canada	1
Fishers, IN	1
Fort Meyers, FL	1
Fort Wayne, IN	1
Frankfort, KY	1
Gahanna, OH	1
Gatland, LA	1
Glendale, KY	1
Golden Pond, KY	1
Green County, KY	1
Greensboro, KY	1
Greenwood, IN	1
Gridley, IL	1
Harlan, TN	1
Hartford, KY	1
Hawesville, KY	1
Hermitage, TN	1
Hillview, KY	1
Hodgenville, KY	1
Hot Springs, TX	1
Independence, KY	1
Irving, KY	1
Jefferson, OH	1
Jeffersonville, KY	1
Jellystone Campground, KY	1
Kalamazoo, MI	1
Kevil, KY	1
Kewanee, IL	1
Lake Barkley	1
Lake City, TN	1
Lancaster, KY	1
Lawrenceburg, KY	1
LBL, KY	1
Lebanon Junction, KY	1
Lebanon, TN	1
Leitchfield, KY	1
Leoma, TN	1
Little Rock, AR	1

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 7: Overnight stay on night before park visit
(continued)

City/Town and State	Number of times mentioned
London, KY	1
Londonderry, OH	1
Madison, TN	1
Marion, IN	1
Marysville, OH	1
Mattoon, IL	1
Maryville, TN	1
McDaniel, KY	1
Memphis, TN	1
Mentone, AL	1
Monrovia, IN	1
Morgantown, WV	1
Mt. Juliet, TN	1
Mt. Vernon, KY	1
M-ville, KY	1
New Hope, KY	1
New Lebanon, OH	1
Newport, KY	1
Nicholasville, KY	1
Nolin Lake, KY	1
Park City, KY	1
Pittsburgh, PA	1
Plainfield, IL	1
Portland, TN	1
Renfro Valley, KY	1
Richmond, KY	1
Rolla, MO	1
Rough Dam State Park, KY	1
Russellville, KY	1
Sacramento, KY	1
Salem, KY	1
Shepherdsville, KY	1
Shreveport, LA	1
Spring City, TN	1
Stearns, KY	1
Terre Haute, IN	1
Tiline, KY	1
Torrent Falls, KY	1
Union, KY	1
Upton, KY	1
Winchester, VA	1
Wytheville, OH	1
Xenia, OH	1

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 7: Overnight stay on night before park visit (continued)

City/Town and State	Number of times mentioned
Unknown locations in Ohio	3
Unknown locations in Indiana	2
Unknown location in Kentucky	1
Unknown location in Tennessee	1

Overnight stay locations on night after park visit

Question 8b
   Where did you stay on the night after your departure from Mammoth Cave NP?

Results
   • As shown in Table 8, the most common locations were:

       Louisville, KY
       Cave City, KY
       Nashville, KY
       Bowling Green, KY

Table 8: Overnight stay on night after park visit
N=395 places;
some visitor groups listed more than one location.

City/Town and State	Number of times mentioned
Louisville, KY	45
Cave City, KY	34
Nashville, KY	21
Bowling Green, KY	18
Lexington, KY	9
Cincinnati, OH	7
Indianapolis, IN	7
Bardstown, KY	6
Columbus, OH	5
Horse Cave, KY	5
Atlanta, GA	4
Barren River Lake State Resort Park, KY	4
Elizabethtown, KY	4
Chattanooga, TN	3
Chicago, IL	3
Clarksville, TN	3
Cumberland Falls State Park, KY	3
Evansville, IN	3
Pigeon Forge, TN	3
Dayton, OH	2
Fairfield Glade, TN	2
Franklin, TN	2
French Lick, TN	2
Ft. Knox, KY	2
Glasgow, KY	2
Jackson, MS	2
Madisonville, KY	2

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

**Table 8: Overnight stay on night after park visit
(continued)**

City/Town and State	Number of times mentioned
Memphis, TN	2
Mt. Washington, KY	2
Olive Hill, KY	2
Owensboro, KY	2
Paducah, KY	2
Scottsville, KY	2
Somerset, KY	2
Akron, OH	1
Allen Park, MI	1
Anderson, IN	1
Athens, OH	1
Attica, IN	1
Beaver Creek, OH	1
Beaver Dam, KY	1
Bensenville, IL	1
Berea, KY	1
Between MCNP & Bowling Green, KY	1
Bismarck, AR	1
Boonesboro, KY	1
Bourbon, IN	1
Bremen, KY	1
Birmingham, AL	1
Browder, KY	1
Burdick, KY	1
Burlington, MI	1
Burnside, KY	1
Canton, OH	1
Cape Girardeau, MO	1
Carmel, IN	1
Carrollton, KY	1
Celina, TN	1
Charleston, WV	1
Clarkson, KY	1
Columbia, MO	1
Connersville, IN	1
Corbin, KY	1
Crawfordsville, IN	1
Cumming, GA	1
Cynthiana, KY	1
Dale Hollow Lake, TN	1
Dalton, GA	1
Daniel Boone National Forest, KY	1
Danville, KY	1

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 8: Overnight stay on night after park visit (continued)

City/Town and State	Number of times mentioned
Dearborn, MI	1
Detroit, MI	1
Dickson, TN	1
Dillsboro, IN	1
Dry Ridge, KY	1
Dunmore, KY	1
Fairfield, OH	1
Fairmont, WV	1
Falls Church, VA	1
Fern Creek, KY	1
Fleming, OH	1
Frankfort, KY	1
Ft. Wayne, IN	1
Gatlinburg, TN	1
Georgetown, KY	1
Gibsonburg, OH	1
Gilbertsville, KY	1
Glendale, KY	1
Golden Pond, KY	1
Grassy Creek, KY	1
Green Castle, PA	1
Green County, KY	1
Green Wood, IN	1
Grove City, OH	1
Harlan, KY	1
Harrodsburg, KY	1
Hartford, KY	1
Hartland, MI	1
Hawesville, KY	1
Hazard, KY	1
Hillview, KY	1
Hodgenville, KY	1
Hopkinsville, KY	1
Hull, GA	1
Jasper, IN	1
Jefferson, IN	1
Jeffersonville, IN	1
Jellystone Campground, KY	1
Kevil, KY	1
Kewanee, IL	1
Kimball, TN	1
Kings Island, OH	1
Knoxville, TN	1
Lake Barclay, KY	1

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 8: Overnight stay on night after park visit (continued)

City/Town and State	Number of times mentioned
Lancaster, OH	1
Land Between the Lakes, KY	1
Lebanon Junction, KY	1
Leitchfield, KY	1
Little Rock, AR	1
Londonderry, OH	1
Long Creek, SC	1
Loretto, TN	1
Marietta, GA	1
Marion, OH	1
Maryville, TN	1
Marysville, OH	1
Mattoon, IL	1
Mayfield, KY	1
McDaniel, KY	1
Metropolis, IL	1
Milwaukee, WI	1
Monrovia, IN	1
Montgomery State Park, TN	1
Morehead, KY	1
Morgantown, WV	1
Mt. Sterling, KY	1
Mt. Juliet, TN	1
Mt. Vernon, IL	1
Murfreesboro, TN	1
Munfordville, KY	1
New Albany, IN	1
New Castle, IN	1
New Lebanon, OH	1
Newport, KY	1
Niagara Falls, Canada	1
Nicholasville, KY	1
Oxford, AL	1
Park City, KY	1
Pendleton, IN	1
Peoria, IL	1
Pierceton, IN	1
Portland, TN	1
Pulaski, VA	1
Rossburg, OH	1
Royal Oak, MI	1
Russell Springs, KY	1
Russellville, AL	1

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 8: Overnight stay on night after park visit (continued)

City/Town and State	Number of times mentioned
Sacramento, KY	1
Salem, KY	1
Seneca, IL	1
Seymour, IN	1
Shelbyville, TN	1
Shreveport, LA	1
Smyrna, GA	1
South Point, OH	1
Spring City, TN	1
Springfield, IL	1
St. Augustine, FL	1
St. Joe, IN	1
St. Louis, MI	1
St. Louis, MO	1
Staunton, VA	1
Taylorsville, KY	1
Terre Haute, IN	1
Tiline, KY	1
Toledo, OH	1
Toronto, Canada	1
Tunica, MS	1
Union, KY	1
Upton, KY	1
Valparaiso, IN	1
Vevay, IN	1
Vincennes, IN	1
Westchester, OH	1
Wheaton, IL	1
Williamsburg, KY	1
Winchester, KY	1
Wolcottville, IN	1
Woodstock, IL	1
Xenia, OH	1
Youngstown, OH	1
Zirconia, NC	1
Unknown location in Ohio	2
Unknown location in Kentucky	2
Unknown location in Indiana	1
Unknown location in Michigan	1

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Places visited in the Mammoth Cave NP area

Question 9
    On this visit to Mammoth Cave NP
    area, what other places did you and
    your group visit?

Results

- As shown in Figure 27, the most
  commonly visited places included:

        56% Cave City
        19% National Corvette
              Museum/Plant
        15% Kentucky Action Park/Jesse
              James Stables/Outlaw
              Cave

- "Other" places visited (31%)
  included:

        Lost River Cave
        Abraham Lincoln Birthplace
        Alpine Slide
        Carter Cave
        Nolan Lake
        Floyd Collins grave
        Cincinnati Zoo
        Grand Ole Opry
        Cub Run Caves
        Louisville Slugger Museum
        Marengo Cave
        Park City
        Bowling Green
        Bourbon distilleries
        Stephen Foster Musical
        Stones River National Battlefield
        Glasgow
        Riding stables
        Outlet mall
        Cumberland National Historical
              Park
        Munfordville
        Wax Museum
        Various shops
        Various restaurants
        Relatives

N=267 visitor groups**

Place	
Cave City	56%
National Corvette Museum/Plant	19%
Kentucky Action Park/ Jesse James Stables/ Outlaw Cave	15%
Horse Cave	12%
Dinosaur World	12%
Guntown Mtn/ Onyx Cave	12%
Diamond Caverns	12%
Crystal Onyx Cave	9%
Hidden River Cave/ American Cave Museum	9%
Kentucky Down Under/ Kentucky Caverns	7%
Nolin Lake State Park	5%
Barren State Park	4%
Kentucky Repertory Theatre	3%
Beech Bend Raceway Park	2%
Shady Park golf course	<1%
Other	31%

Number of respondents

Figure 27: Places visited in the Mammoth Cave NP area

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Number of park entries

Question 18b
   On this visit to Mammoth Cave NP, how many times did you and your group enter the park?

Results
   • 57% of visitor groups entered the park once (see Figure 28).

   • 20% entered the park twice.
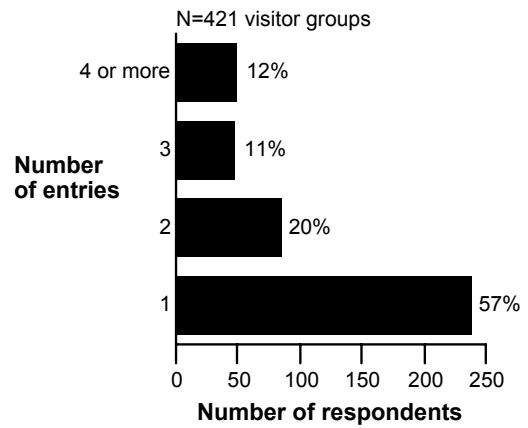
Figure 28:   Number of entries into the park

Visitor center arrival time

Question 14
   What time of day did you and your group arrive at the park visitor center on the first day of your visit?

Results
   • The most common visitor center arrival times were (see Figure 29):

         33% Between 10 a.m. and noon
         22% Between noon and 2 p.m.
         20% Between 8 and 10 a.m.
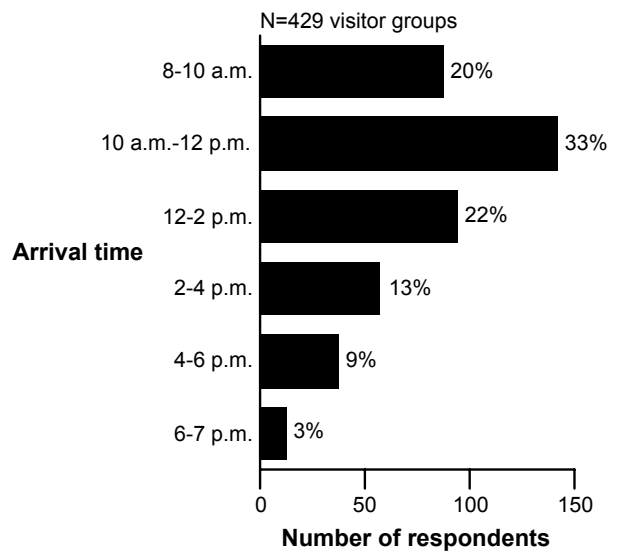
Figure 29:   Arrival time at visitor center on first day of visit

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Length of visit

Question 6
    On this visit, how long did you and your group
    stay at Mammoth Cave NP?

Number of hours, if less than 24 hours

Results
- 63% of visitor groups (N=257) spent less than 24 hours at Mammoth Cave NP.

- 50% of visitor groups spent five or more hours at the park (see Figure 30).

- 35% spent three or four hours.

- 15% spent up to two hours.

N=257 visitor groups

Number of hours

5 or more	50%
4	20%
3	15%
2	7%
1 or less	8%

Number of respondents
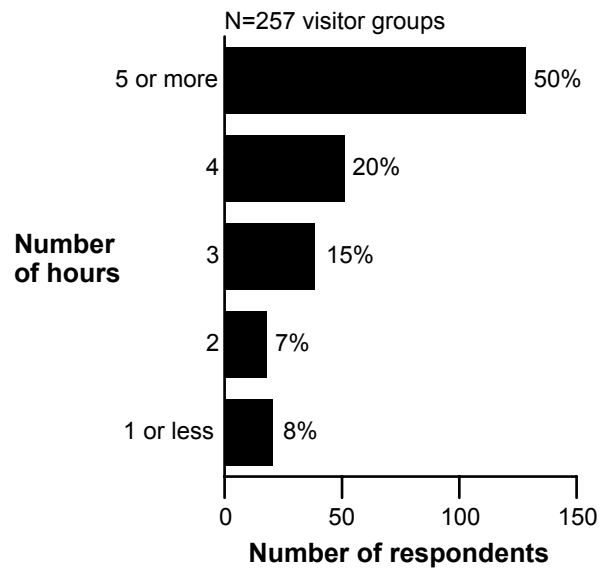
Figure 30: Number of hours visiting the park

Number of days, if 24 hours or more

Results
- 37% of groups (N=148) spent more than 24 hours at Mammoth Cave NP.

- 70% of visitor groups spent two or three days at the park (see Figure 31).

- 17% spent 4 or more days.

N=148 visitor groups

Number of days

5 or more	10%
4	7%
3	25%
2	45%
1	13%

Number of respondents
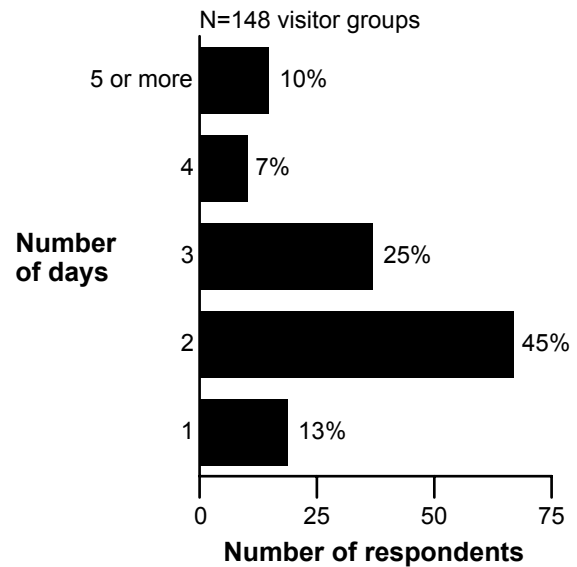
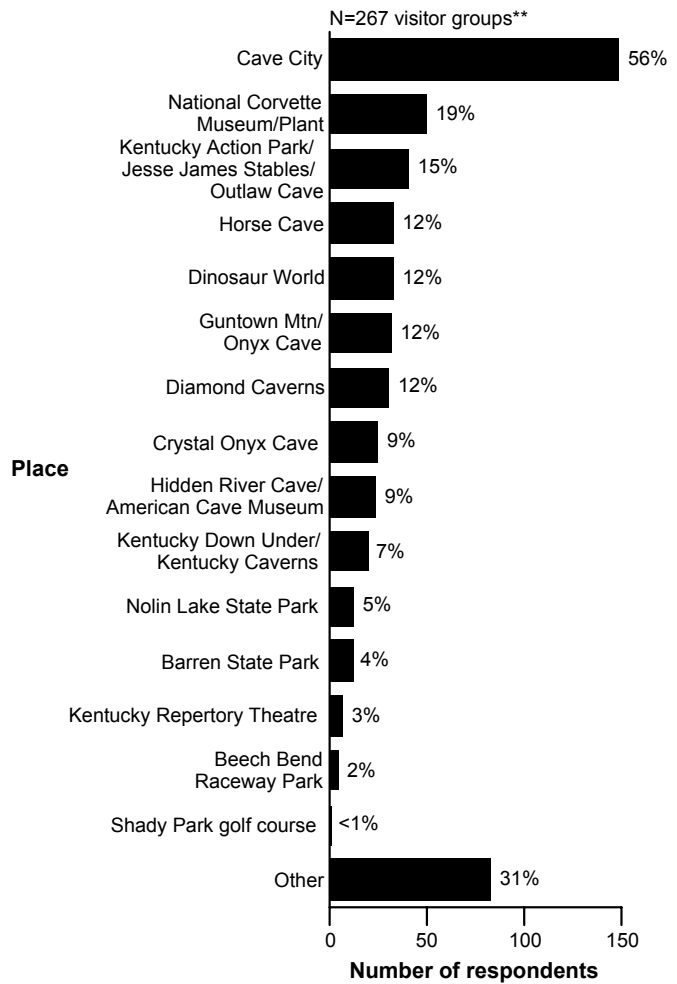**Figure 31: Number of days visiting the park**

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Activities in the park

Question 13
> On this visit, what activities did you and your group participate in at Mammoth Cave NP?

Results
- As shown in Figure 32, the most common activities in the park were:

  79% Taking a cave tour
  58% Driving for pleasure/
         sightseeing
  32% Hiking

- "Other" activities (7%) included:

  Green River Ferry boat ride
  Talked to rangers
  Stayed in cabin
  Shopped for souvenirs
  Watched movie

N=403 visitor groups**

Activity	Percentage
Taking a cave tour	79%
Driving for pleasure/sightseeing	58%
Hiking	32%
Photography	29%
Dining at park hotel	24%
Birdwatching/wildlife viewing	22%
Staying overnight at park hotel	15%
Picnicking	14%
Visiting park cemeteries	12%
Attending ranger-led programs (not cave tours)	12%
Camping	11%
Canoeing/kayaking/boating	11%
Bicycling	4%
Horseback riding	3%
Backpacking	2%
Other	7%

Number of respondents

Figure 32: Activities in the park

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Cave tours

Cave tour reservations

Question 2a
   Prior to this visit, were you and your group aware of the cave tour reservations system at Mammoth Cave NP?

Results
   - 57% of visitor groups were aware of the cave tour reservations system (see Figure 33).
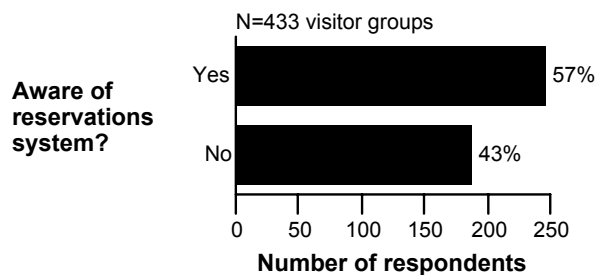
Figure 33: Awareness of cave tour reservations system prior to visit

Question 2b
   Did you and your group make cave tour reservations prior to your visit?

Results
   - 61% of visitor groups made cave tour reservations prior to their visit (see Figure 34).
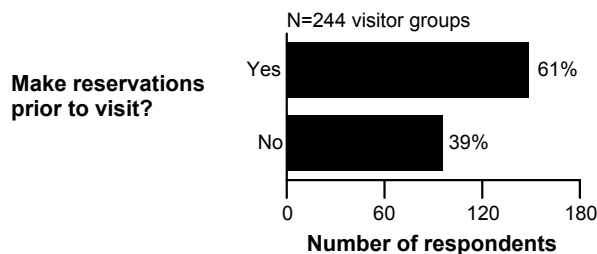
Figure 34: Visitor groups who made cave tour reservations prior to their visit

Question 2c
   If NO, how did you and your group learn about the cave tours?

Results
   - 78% of visitor groups (N=77) responded by listing ways they learned about the cave tours (see Table 9).

Table 9: Methods of learning about cave tours if not reserved prior to visit
N=100 comments;
some visitor groups made more than one comment.

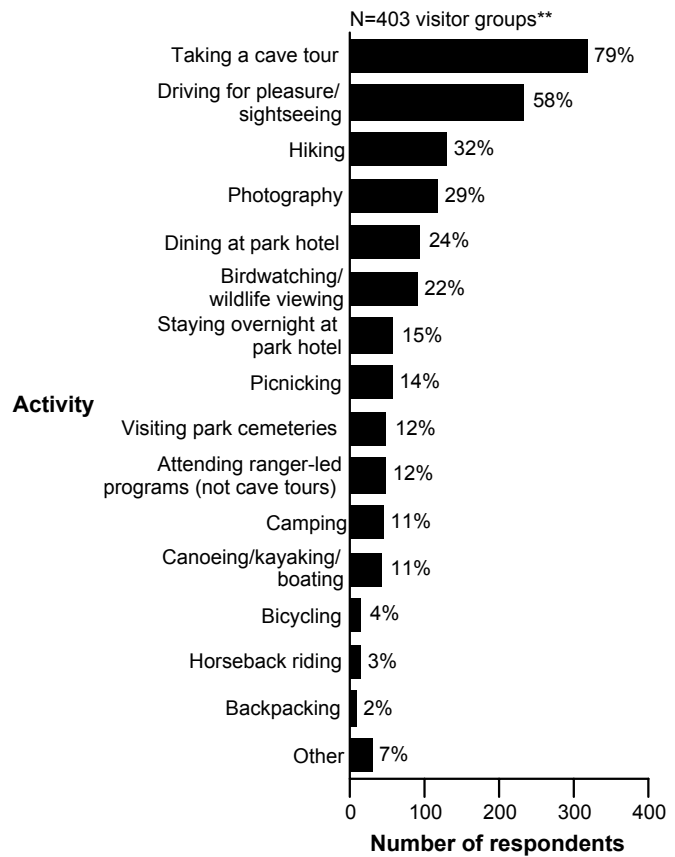| Methods	Number of times mentioned
On-site	48
Online	25
Previous visits	12
Tour books/brochures	6
Friends/relatives	5
Did not take cave tour	3
Called	1

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Question 2d

If YES, did you and your group get the cave tour reservation by calling the toll-free telephone number or by going online to the National Park Service reservation website?

Results

- 60% of visitor groups called the toll-free telephone number to make cave tour reservations (see Figure 35).

- 40% of groups made their reservations online.

N=147 visitor groups

Reservation method
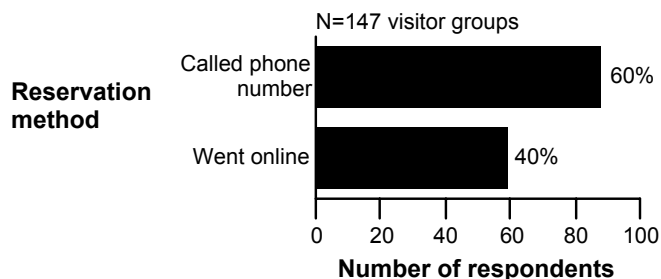
Figure 35: Visitor groups who called or went online to make cave tour reservations

Question 2e

Please rate the quality of your experience using the cave tour reservation system.

Results

- 86% of visitor groups rated the quality of the cave tour reservation system as "very good" or "good" (see Figure 36).

- 4% rated it as "very poor" or "poor."

N=149 visitor groups*
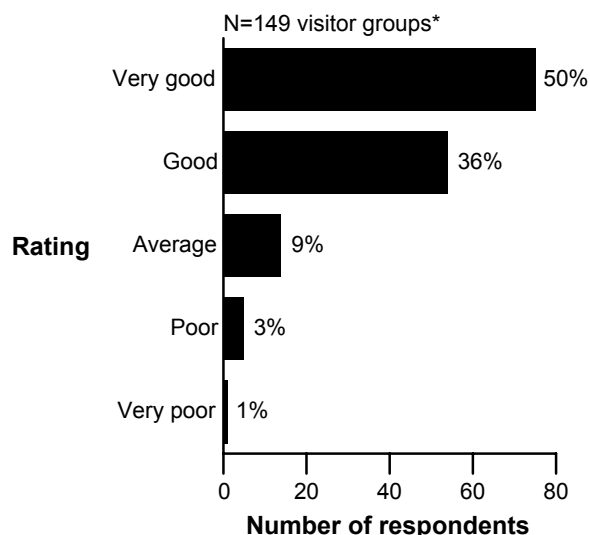
Rating

Figure 36: Quality rating of using the cave tour reservation system

Question 2f

If you rated the cave tour reservation-making experience as "very poor" or "poor," what problems did you encounter?

Results

- See Table 10.

Table 10: Problems encountered during cave tour reservation-making experience
N=28 comments;
some visitor groups made more than one comment.

Problem	Number of times mentioned
Problems making online reservation	10
Calling problems	8
Unknowledgeable phone operator	8
Problems with tour	2

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Cave tours

Question 10a
On this visit, which of the following cave tour(s) did you and/or your group take?

Results
- 91% of visitor groups took a cave tour (see Figure 37).

N=435 visitor groups
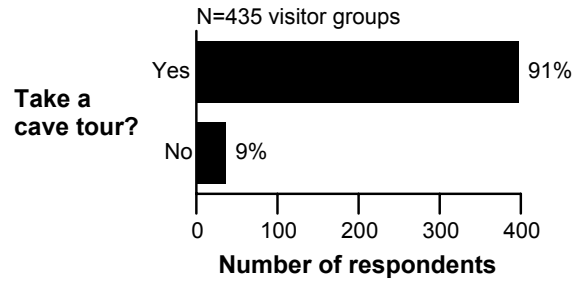
Take a cave tour?

Figure 37: Visitor groups who took cave tours

- As shown in Figure 38, the most commonly taken cave tours included:

    40% Frozen Niagara Tour
    37% Historic Tour
    14% Ranger-guided Mammoth Cave Discovery Tour

N=390 visitor groups**
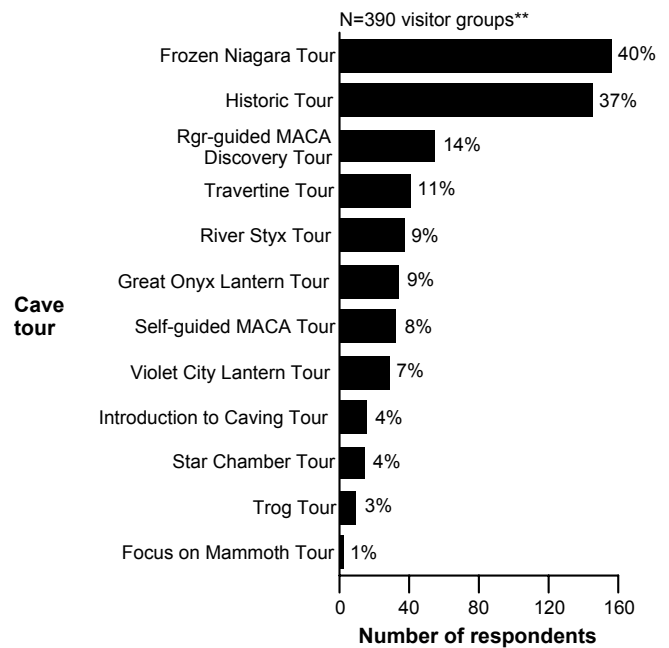
Cave tour

Figure 38: Cave tours taken

Question 10b, c, d, and e
b) Please list the number of people in your personal group who went on each cave tour
c) How long did you and/or your group have to wait to take the cave tour(s)?
d) Please rate (from 1-3) the length of the cave tour(s) you and your group took.
e) Please rate (from 1-5) the value for the fee paid for each cave tour that you and/or your group took.

Results
- Responses to these questions are shown in Table 11.

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Cave tour	Number of people in personal group on cave tour				Length of wait (hours)				Length of tour* %				Value for fee paid* % VP=Very poor P=Poor A=Average G=Good VG=Very good					
									Percentages may not equal 100 due to rounding.									
	N	Min	Avg	Max	N	Min	Avg	Max	N	Too short	About right	Too long	N	VP	P	A	G	VG
Frozen Niagara Tour	152	1	5	23	140	0	1	4	151	6	92	2	152	0	1	25	41	33
Historic Tour	141	1	5	39	131	0	1	4	139	5	94	1	142	1	1	19	49	30
Ranger-guided Mammoth Cave Discovery Tour	53	1	3	7	45	0	1	10	51	14	86	0	53	2	0	25	42	32
Travertine Tour	41	1	5	23	36	0	1	7	38	13	82	5	40	0	15	15	33	38
River Styx Tour	37	2	4	13	35	0	1	3	36	6	92	3	36	0	0	17	42	42
Great Oynx Lantern Tour	34	1	4	9	26	0	4	36	31	3	94	3	33	0	3	18	39	39
Self-guided Mammoth Cave Discovery Tour **CAUTION!**	33	1	4	12	28	0	<1	4	29	34	62	3	29	3	3	24	41	28
Violet City Lantern Tour **CAUTION!**	29	1	4	12	25	0	2	48	29	10	79	10	29	0	7	17	38	38
Introduction to Caving Tour **CAUTION!**	16	1	3	5	12	0	1	5	16	19	81	0	16	0	0	31	44	25
Star Chamber Tour **CAUTION!**	15	1	4	20	12	0	<1	2	13	0	92	8	13	8	0	31	31	31
Trog Tour **CAUTION!**	10	1	2	3	10	0	10	96	10	0	10	0	10	0	0	10	20	70
Focus on Mammoth Tour **CAUTION!**	2	1	3	4	2	0	0	0	2	50	50	0	2	0	0	0	100	0

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Question 10e (continued)
Please rate (from 1-5) the value for the fee paid for each cave tour that you and/or your group took.

Results
- Figure 39 shows the combined proportions of "very good" and "good" ratings of value for money paid for cave tours that were rated by 30 or more visitor groups.

- The highest value for money paid was for the following cave tours:

  84% River Styx Tour
  79% Historic Tour
  78% Great Onyx Lantern Tour

N=total number of groups who rated the value of money paid for cave tours.
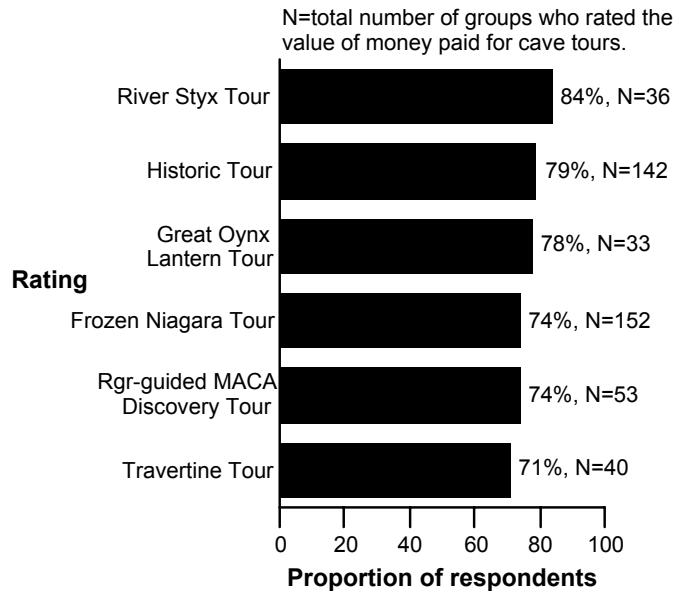
Figure 39: Combined proportions of "very good" and "good" ratings of value for money paid for cave tours

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Cave tour waits

Question 10f
   What did you and/or your group do while
   you waited to take a cave tour?

Results

- 21% of visitor groups did not have to wait
  for a cave tour (see Figure 40).

- The 79% of visitor groups who had to
  wait for a cave tour participated in
  various activities while waiting (see
  Figure 41), including:

      53% Shopping in visitor center
             bookstore
      44% Shopping in gift shop
      35% Eating
      32% Watching park films/videos

- "Other" activities (20%) while waiting
  included:

      Sat and waited
      Studied maps
      Enjoyed family time
      Shopped in Cave City
      Went swimming
      Used restrooms
      Napped
      Took boat tour
      Sat in car
      Picnicked
      Talked with other visitors

N=385 visitor groups
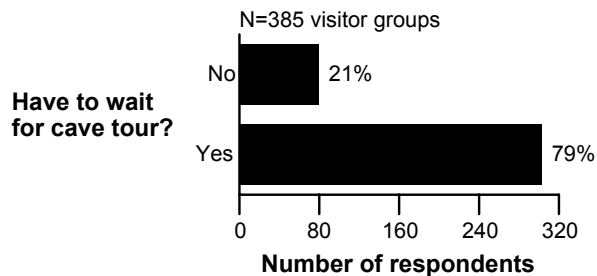
Figure 40: Visitor groups who had to wait for cave tour

N=304 visitor groups**
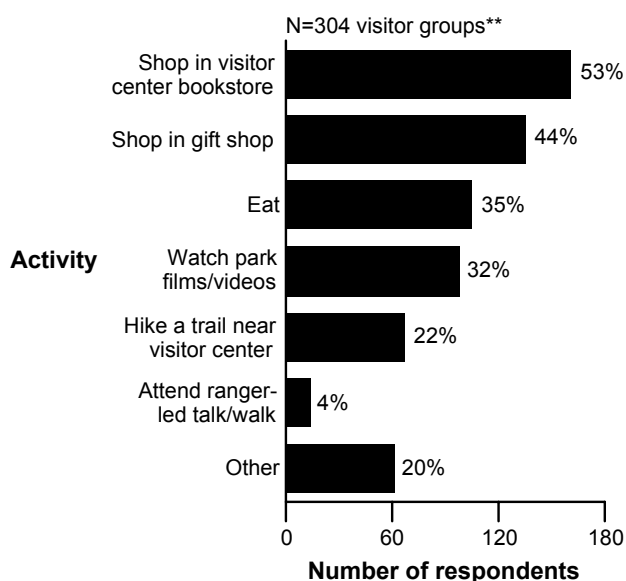
Figure 41: Activities while waiting for cave tour

Cave tour size

Question 11a, b, c, and d
   a) For the tours that you or your group took,
      how many people in total would you
      estimate were on your cave tour?
   b) Compared to what you expected, how
      crowded did you feel on the cave tours
      you and your group took?
   c) In your opinion, were any of the cave tours
      that you or your group took too crowded
      to be enjoyable?
   d) Would you recommend the cave tours that
      you or your group took to others?

Results
   Visitor opinions about cave tour crowding are
   shown in Table 12.

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 12: Crowding on cave tours

Cave tour	Total number of people on your cave tour %				How crowded?* %				Tour too crowded to be enjoyable?* %			Recommend to others?* %		
					percentages may not equal 100 due to rounding.									
	N	Cave tour size			N	Less than expected	About expected	More than expected	N	Yes	No	N	Yes	No
Frozen Niagara Tour	151	<20	20-60	>60	149	7	66	27	154	18	82	155	94	6
		5	51	44										
Historic Tour	134	<20	20-60	>60	137	7	59	34	144	24	76	143	97	3
		6	46	49										
Ranger-guided Mammoth Cave Discovery Tour	53	<20	20-40	N/A	56	20	68	13	59	8	92	57	93	7
		15	85											
Travertine Tour	40	<20	20-40	N/A	40	18	80	3	42	2	98	40	95	5
		15	85											
River Styx Tour	36	<20	20-60	N/A	36	6	75	19	34	9	91	34	100	0
		0	100											
Great Oynx Lantern Tour	33	<20	20-40	N/A	30	13	80	7	32	0	100	32	97	3
		18	82											
Violet City Lantern Tour **CAUTION!**	30	<20	20-60	N/A	29	3	86	10	32	6	94	32	88	13
		7	93											
Self-guided Mammoth Cave Discovery Tour **CAUTION!**	N/A				21	24	76	0	24	4	96	24	96	4
Introduction to Caving Tour **CAUTION!**	14	<20	10-20	N/A	15	0	100	0	15	7	93	15	93	7
		50	50											
Star Chamber Tour **CAUTION!**	14	<20	20-40	N/A	14	14	79	7	14	0	100	14	93	7
		21	79											
Trog Tour **CAUTION!**	11	<10	10-15	N/A	11	9	91	0	11	0	100	10	100	0
		27	73											
Focus on Mammoth Tour **CAUTION!**	2	<20	20-40	N/A	2	50	50	0	2	0	100	2	100	0
		50	50											

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Future options for cave tours

Question 11e

If cave tour size has to be reduced to protect cave resources and because the tour capacity has been reached, which of the following options would you prefer?

• Maintain the same length of ranger-guided tours. Visitors would see the same amount of the cave, but less people would be allowed on each tour, so fewer people would see the cave than see it now.

• Offer shorter ranger-guided cave tours more frequently (reduce current 2-hour tour to 1-hour tour). Visitors would see less of the cave, but more people would see the cave than see it now.

• Offer self-guided tours in a smaller section of the cave and a very limited number of ranger-guided tours in the same amount of cave as now. On self-guided tours, visitors would see less of the cave, but more people would be allowed in. On ranger-guided tours, visitors would see the same amount of cave as now, but because of fewer tours, not as many people could take them.

• Other (Please specify.)

N=368 visitor groups*

Figure 42: Preferred future option for cave tours

Results

• 66% of visitor groups preferred maintaining the same length of ranger-guided tours (see Figure 42).

• 15% of visitors groups would prefer shorter tours

• Other preferences (8%) included:

Have longer tour hours during peak season
Hire more rangers during peak season
Open more of cave to tours
Lobby for more funding
Increase number of tours, reduce tour size
No changes
Ban crying children

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Cave tour pricing

Question 12 a, b, and c
Please respond to the following questions about cave tour prices.

Was price a factor in choosing:

a) whether you and your group went on a tour?
b) which tours you and your group went on?
c) how many tours you and your group went on?

Results
- For 83% of visitor groups price was not a factor in whether or not they went on a cave tour (see Figure 43).

- 82% of visitor groups said price was not a factor in which cave tours visitors went on (see Figure 44).

- 70% of visitor groups said price was not a factor in the number of cave tours they took (see Figure 45).

N=414 visitor groups

Price a factor in taking a cave tour?

Yes 17%
No 83%

Number of respondents
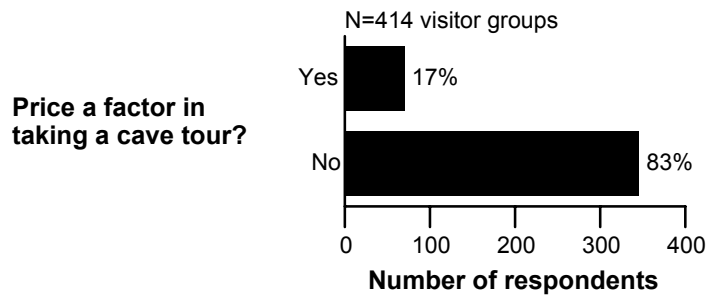
Figure 43: Price as a factor in whether or not visitor groups went on a cave tour?

N=392 visitor groups

Price a factor in which cave tours were taken?

Yes 18%
No 82%

Number of respondents
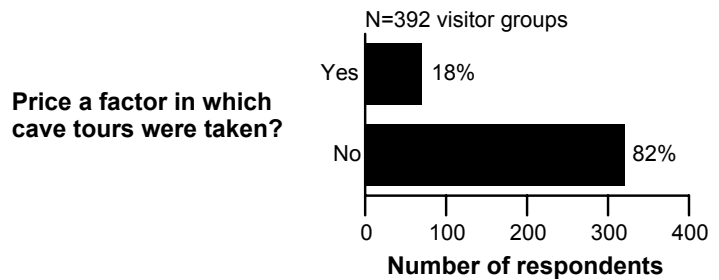
Figure 44: Price as a factor in which cave tours visitor groups went on?

N=395 visitor groups

Price a factor in number of tours taken?

Yes 30%
No 70%

Number of respondents
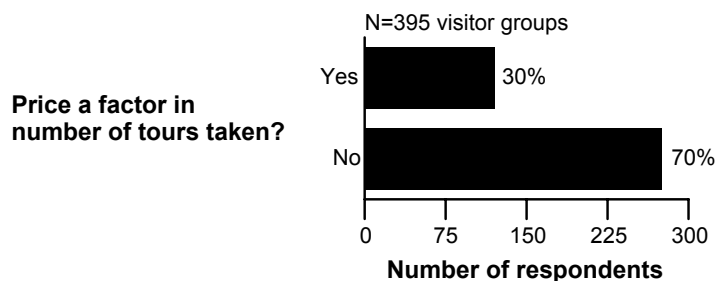
Figure 45: Price as a factor in how many cave tours visitor groups went on?

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Ratings of Visitor Services, Facilities, Elements, Attributes and Resources

Visitor services and facilities used

Question 15a

Please indicate all of the services and facilities that you and your group used during this visit to Mammoth Cave National Park.

Results

- As shown in Figure 46, the most used services and facilities included:

    88% Cave tour
    82% Restrooms
    80% Park brochure/map
    77% Cave tour ticket sales

- The least used service and facility was:

    3% Junior Ranger program

N=425 visitor groups**

Service/facility

Service/facility	Percentage
Cave tour	88%
Restrooms	82%
Park brochure/map	80%
Cave tour ticket sales	77%
Assistance-visitor center info desk	66%
Assistance from park staff	61%
NPS park website	50%
Visitor center bookstore sales items	36%
Trails in visitor center area	32%
Picnic areas	15%
Ranger-led programs (not cave tours)	12%
Campground	10%
Trails north of river	8%
Assistance from campground staff	7%
Junior Ranger program	3%

Number of respondents

Figure 46: Visitor services and facilities used

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Importance ratings for visitor services and facilities

Question 15b
   For only those services that you or
   your group used, please rate their
   importance from 1 to 5.

      1=Not important
      2=Somewhat important
      3=Moderately important
      4=Very important
      5=Extremely important

Results
- Figure 47 shows the combined
  proportions of "extremely
  important" and "very important"
  ratings for services and facilities
  that were rated by 30 or more
  visitor groups.

- The services/facilities receiving
  the highest combined
  proportions of "extremely
  important" and "very important"
  ratings were:

      94% Cave tour
      93% Restrooms
      88% Campground
      81% Cave tour ticket sales

- Figures 48 to 62 show the
  importance ratings for each
  service/facility.

- The service/facility receiving the
  highest "not important" rating
  was:

      10% Visitor center bookstore
            sales items

N=total number of groups who
rated each service/facility.

Service/facility	Proportion
Cave tour	94%, N=359
Restrooms	93%, N=337
Campground	88%, N=41
Cave tour ticket sales	81%, N=315
NPS park website	77%, N=207
Assistance from visitor center information desk	73%, N=273
Assistance from park staff	71%, N=252
Trails on north side of river	70%, N=30
Picnic areas	70%, N=59
Trails in visitor center area	63%, N=131
Ranger-led programs (not cave tours)	62%, N=48
Park brochure/map	62%, N=333
Visitor center bookstore sales items	30%, N=147

Proportion of respondents
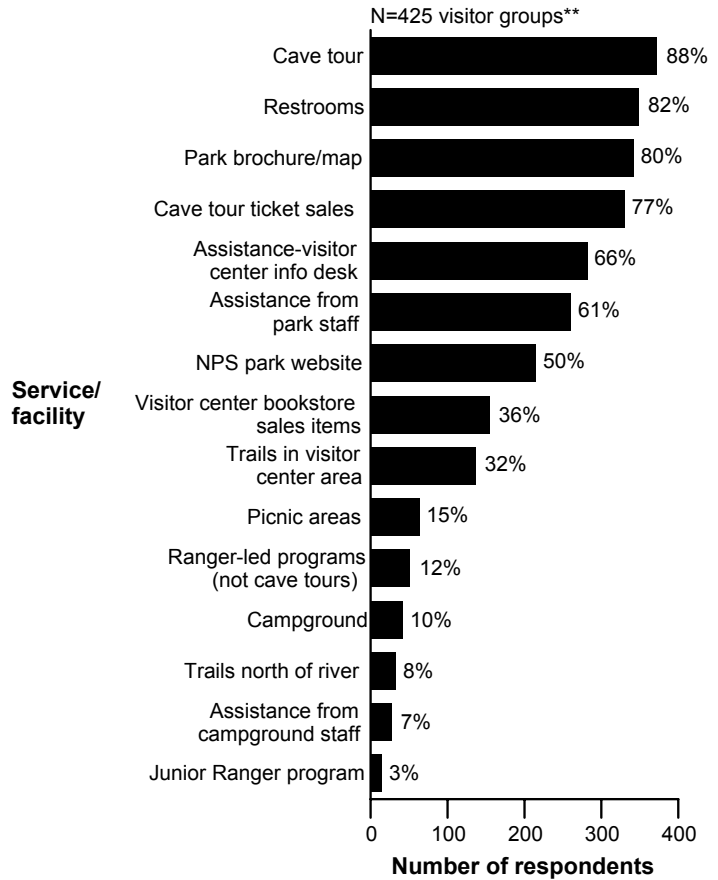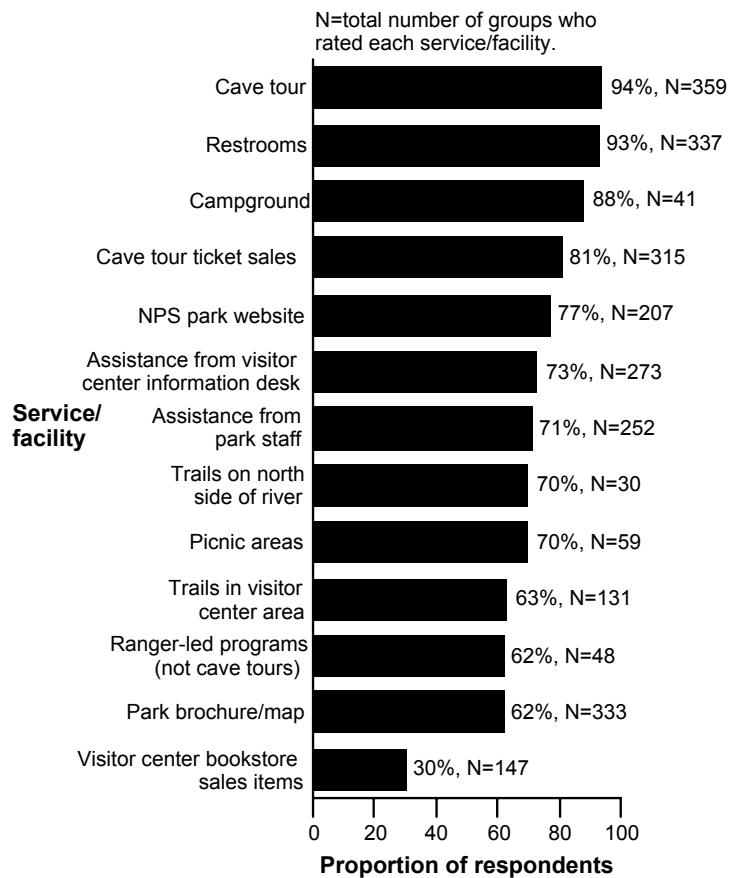
Figure 47: Combined proportions of "extremely important" and "very important" ratings for visitor services and facilities

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

N=333 visitor groups

Rating

Extremely important	29%
Very important	33%
Moderately important	27%
Somewhat important	9%
Not important	2%

0   40   80   120
Number of respondents

Figure 48: Importance of park brochure/map

N=252 visitor groups

Rating

Extremely important	33%
Very important	38%
Moderately important	20%
Somewhat important	8%
Not important	1%

0   20   40   60   80   100
Number of respondents

Figure 49: Importance of assistance from park staff

N=273 visitor groups

Rating

Extremely important	34%
Very important	39%
Moderately important	19%
Somewhat important	7%
Not important	1%

0   40   80   120
Number of respondents
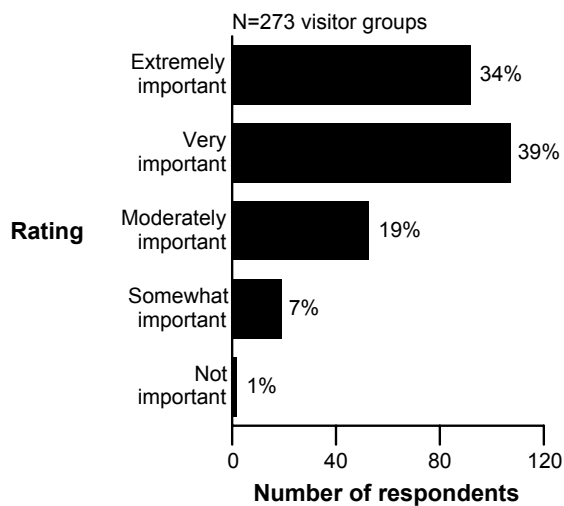
Figure 50: Importance of assistance from visitor center information desk

N=147 visitor groups

Rating

Extremely important	12%
Very important	18%
Moderately important	39%
Somewhat important	21%
Not important	10%

0   20   40   60
Number of respondents

Figure 51: Importance of visitor center bookstore sales items

*total percentages do not equal 100 due to rounding
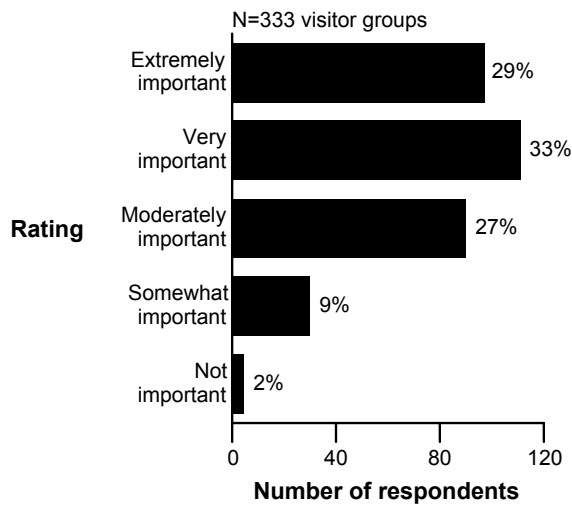**total percentages do not equal 100 because visitors could select more than one answer
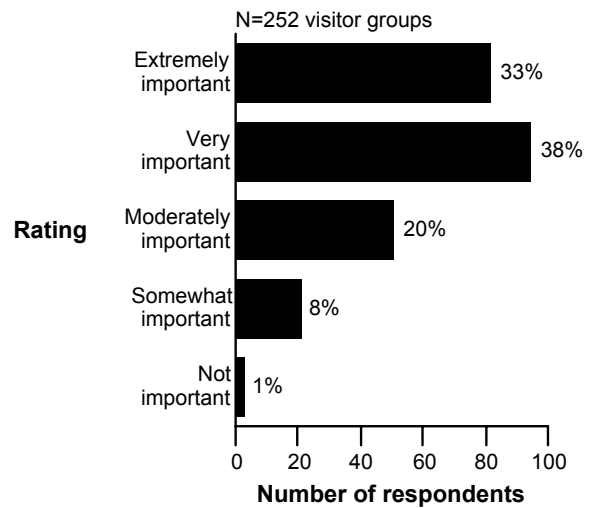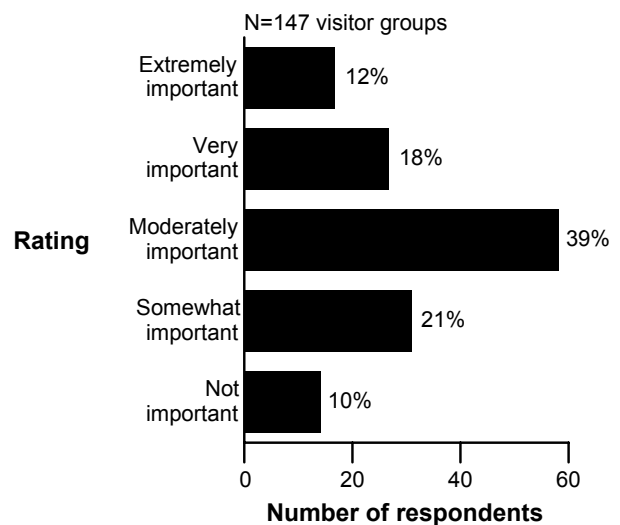
N=359 visitor groups*

Rating	
Extremely important	66%
Very important	28%
Moderately important	4%
Somewhat important	1%
Not important	0%

Number of respondents

Figure 52: Importance of cave tour

N=315 visitor groups*

Rating	
Extremely important	44%
Very important	37%
Moderately important	12%
Somewhat important	5%
Not important	1%

Number of respondents

Figure 53: Importance of cave tour ticket sales

N=48 visitor groups

Rating	
Extremely important	33%
Very important	29%
Moderately important	23%
Somewhat important	15%
Not important	0%

Number of respondents
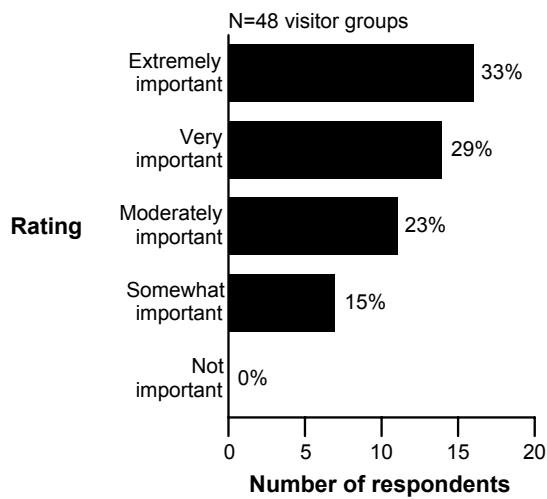
Figure 54: Importance of ranger-led programs (other than cave tours)

N=14 visitor groups

Rating	
Extremely important	29%
Very important	14%
Moderately important	36%
Somewhat important	0% **CAUTION!**
Not important	21%

Number of respondents

Figure 55: Importance of Junior Ranger program

*total percentages do not equal 100 due to rounding
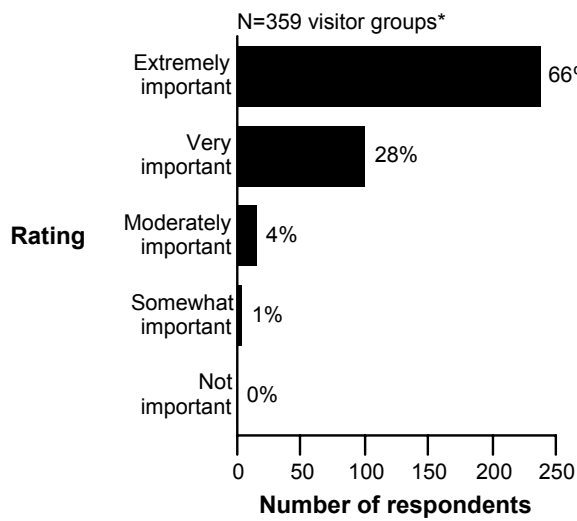**total percentages do not equal 100 because visitors could select more than one answer
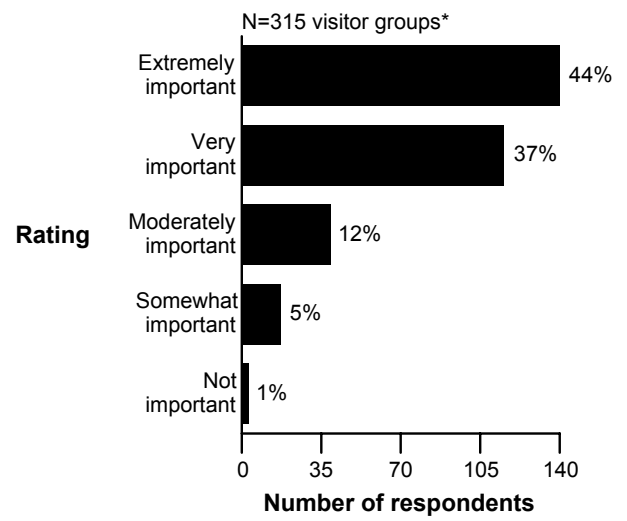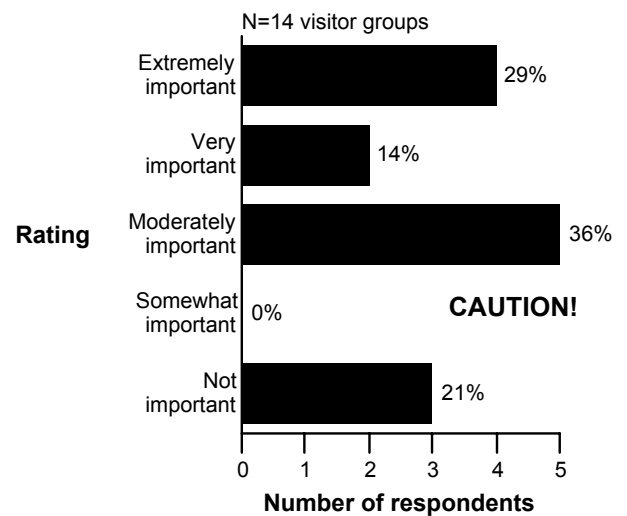
50

N=41 visitor groups

Rating

Extremely important	54%
Very important	34%
Moderately important	5%
Somewhat important	2%
Not important	5%

Number of respondents

Figure 56: Importance of campground

N=28 visitor groups

Rating

Extremely important	46%
Very important	29%
Moderately important	18%
Somewhat important	0%
Not important	7%

CAUTION!

Number of respondents

Figure 57: Importance of assistance from campground staff

N=337 visitor groups*

Rating

Extremely important	67%
Very important	26%
Moderately important	7%
Somewhat important	1%
Not important	0%

Number of respondents

Figure 58: Importance of restrooms

N=59 visitor groups

Rating

Extremely important	31%
Very important	39%
Moderately important	20%
Somewhat important	10%
Not important	0%

Number of respondents

Figure 59: Importance of picnic areas

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

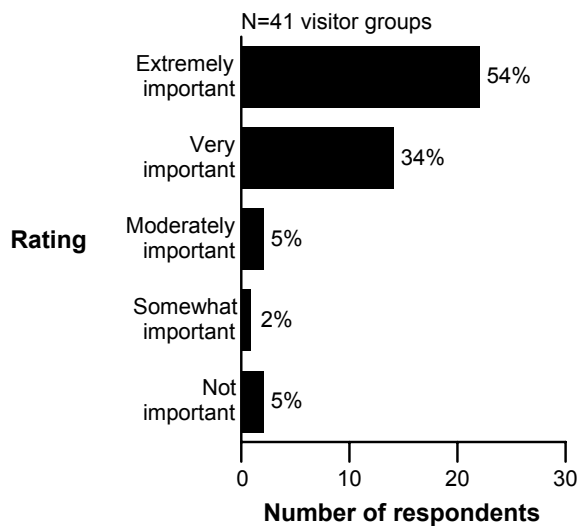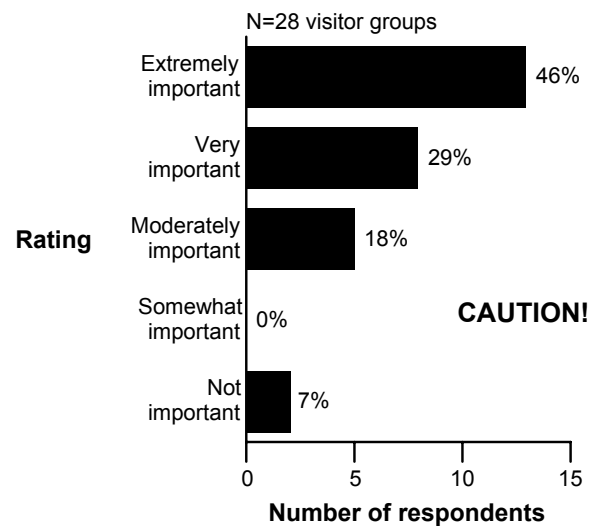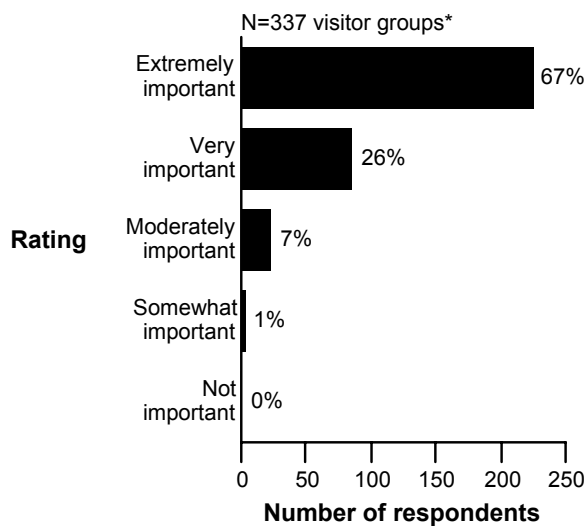N=131 visitor groups*

Figure 60: Importance of trails in the visitor center area

N=30 visitor groups
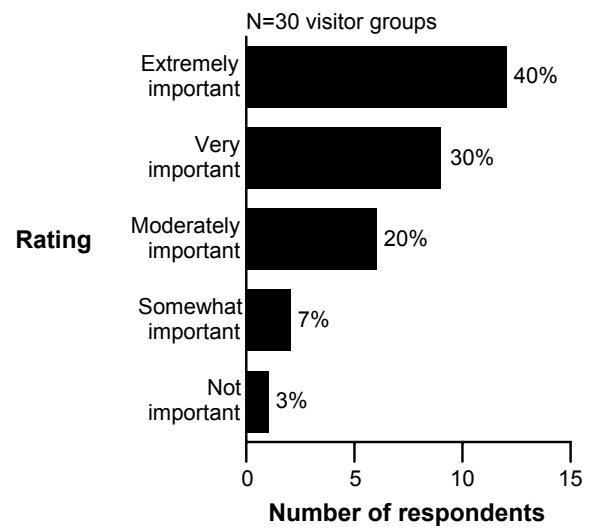
Figure 61: Importance of trails on the north side of the river

N=207 visitor groups*

Figure 62: Importance of park website: www.nps.gov/maca, used before or during visit
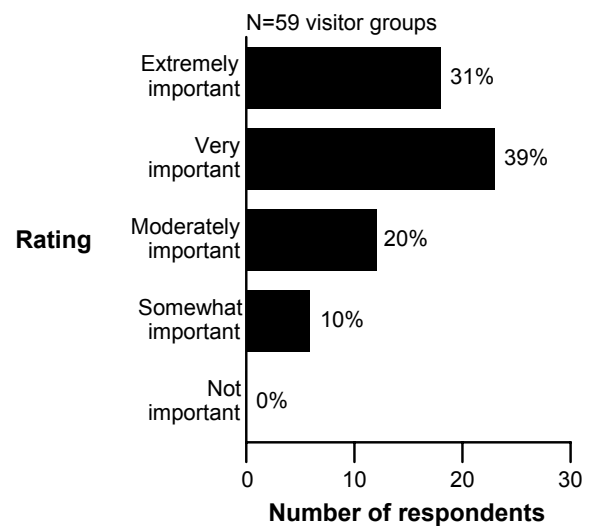
*total percentages do not equal 100 due to rounding
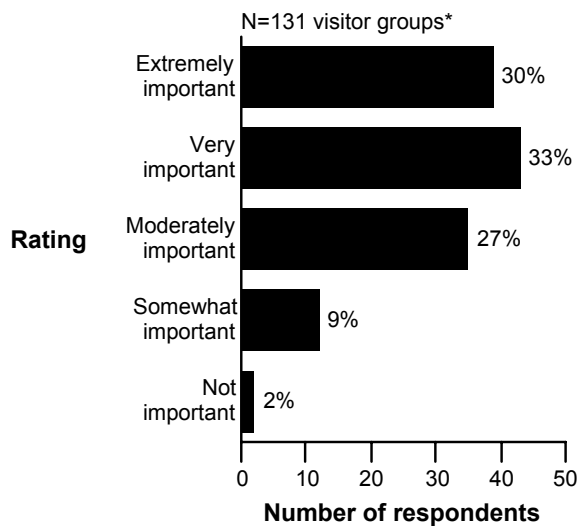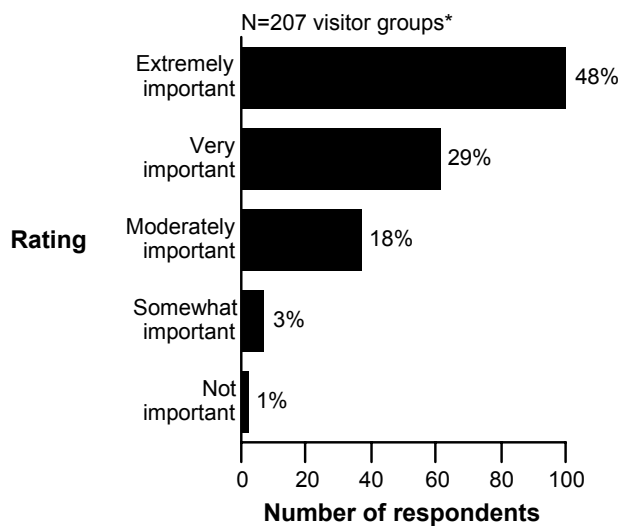**total percentages do not equal 100 because visitors could select more than one answer

Quality ratings for visitor services and facilities

Question 15c

Finally, for only those services and facilities that you and your group used, please rate their quality from 1-5.

1=Very poor
2=Poor
3=Average
4=Good
5=Very good

Results

- Figure 63 shows the combined proportions of "very good" and "good" quality ratings for services and facilities that were rated by 30 or more visitor groups.

- The services/facilities that received the highest combined proportions of "very good" and "good" quality ratings were:

  94% Cave tour
  93% Assistance from park staff
  92% Assistance from visitor center information desk

- Figures 64 to 73 show the quality ratings for each service/facility.

- The service/facility receiving the highest "very poor" quality rating was:

  4% Picnic areas

N=total number of groups who rated each service/facility.

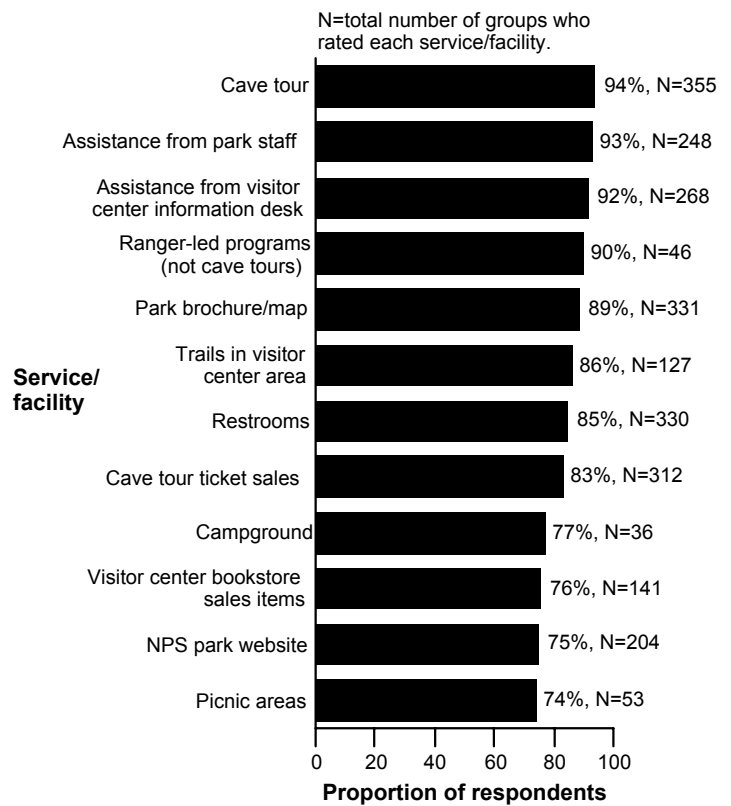| Service/facility	Proportion
Cave tour	94%, N=355
Assistance from park staff	93%, N=248
Assistance from visitor center information desk	92%, N=268
Ranger-led programs (not cave tours)	90%, N=46
Park brochure/map	89%, N=331
Trails in visitor center area	86%, N=127
Restrooms	85%, N=330
Cave tour ticket sales	83%, N=312
Campground	77%, N=36
Visitor center bookstore sales items	76%, N=141
NPS park website	75%, N=204
Picnic areas	74%, N=53

Proportion of respondents

Figure 63: Combined proportions of "very good" and "good" quality ratings for visitor services and facilities

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

N=331 visitor groups

Rating

Very good	42%
Good	47%
Average	10%
Poor	1%
Very poor	0%

Number of respondents

Figure 64: Quality of park brochure/map

N=248 visitor groups*

Rating

Very good	61%
Good	32%
Average	6%
Poor	<1%
Very poor	<1%

Number of respondents

Figure 65: Quality of assistance from park staff

N=268 visitor groups*

Rating

Very good	54%
Good	38%
Average	5%
Poor	1%
Very poor	1%

Number of respondents
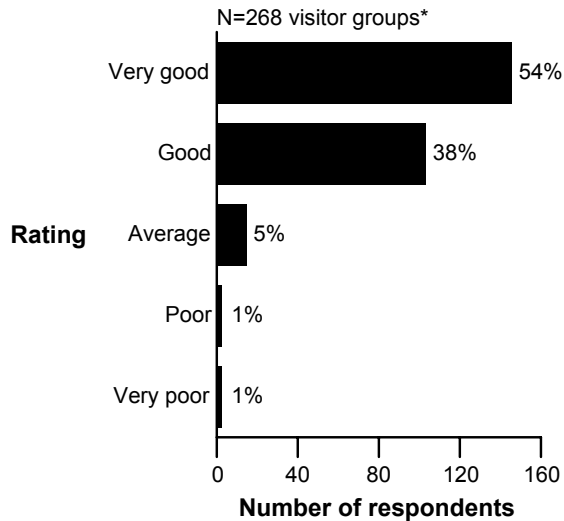
Figure 66: Quality of assistance from visitor center information desk

N=141 visitor groups

Rating

Very good	39%
Good	37%
Average	20%
Poor	2%
Very poor	2%

Number of respondents

Figure 67: Quality of visitor center bookstore sales items

*total percentages do not equal 100 due to rounding
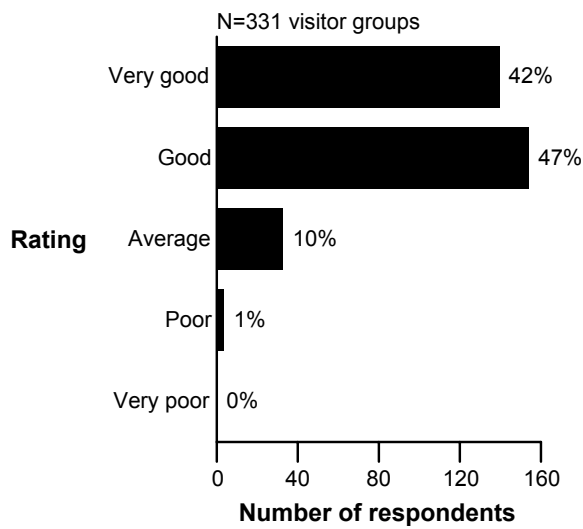**total percentages do not equal 100 because visitors could select more than one answer
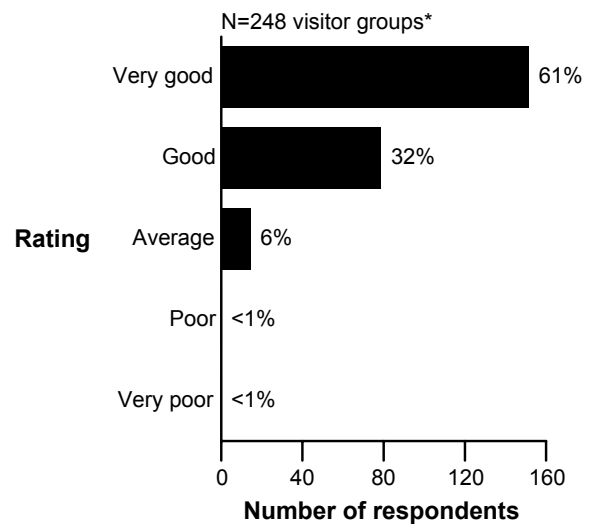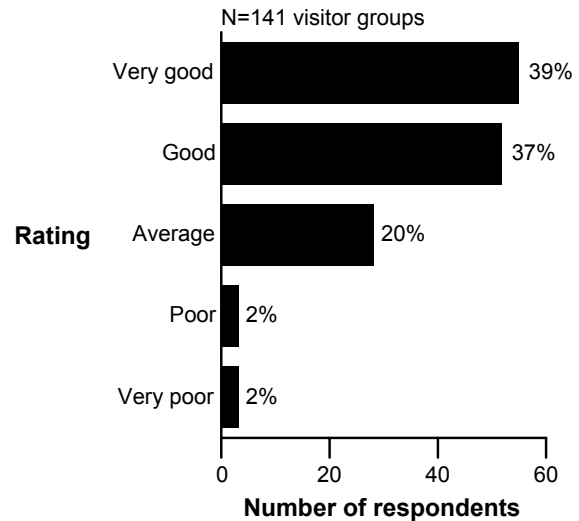
N=355 visitor groups*

Rating	
Very good	67%
Good	27%
Average	4%
Poor	2%
Very poor	<1%

0   50   100   150   200   250
Number of respondents

Figure 68: Quality of cave tour

N=312 visitor groups*

Rating	
Very good	46%
Good	37%
Average	13%
Poor	3%
Very poor	2%

0   50   100   150
Number of respondents

Figure 69: Quality of cave tour ticket sales

N=46 visitor groups*

Rating	
Very good	70%
Good	20%
Average	9%
Poor	2%
Very poor	0%

0   10   20   30   40
Number of respondents
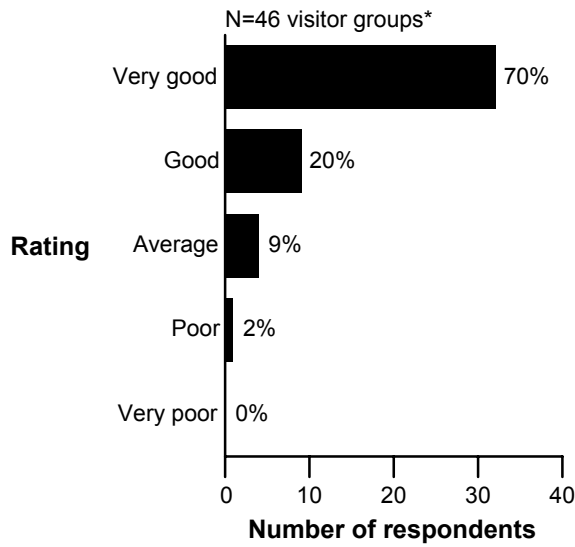
**Figure 70: Quality of ranger-led programs
(other than cave tours)**

N=9 visitor groups

Rating	
Very good	89%
Good	11%
Average	0%
Poor	0% **CAUTION!**
Very poor	0%

0   2   4   6   8
Number of respondents
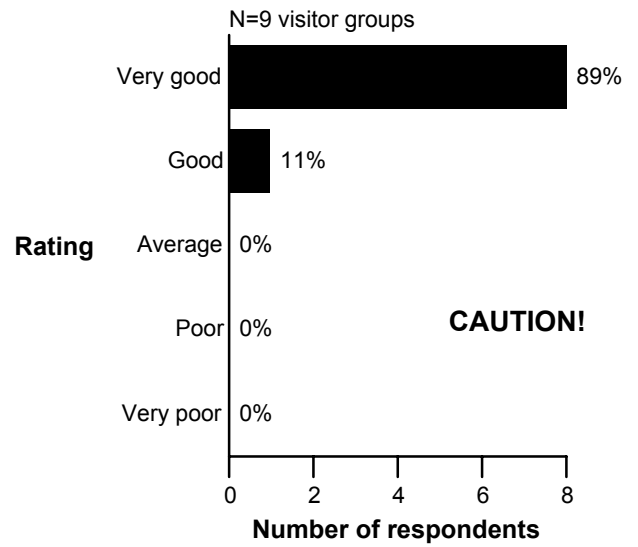
Quality of Junior Ranger program

*total percentages do not equal 100 due to rounding
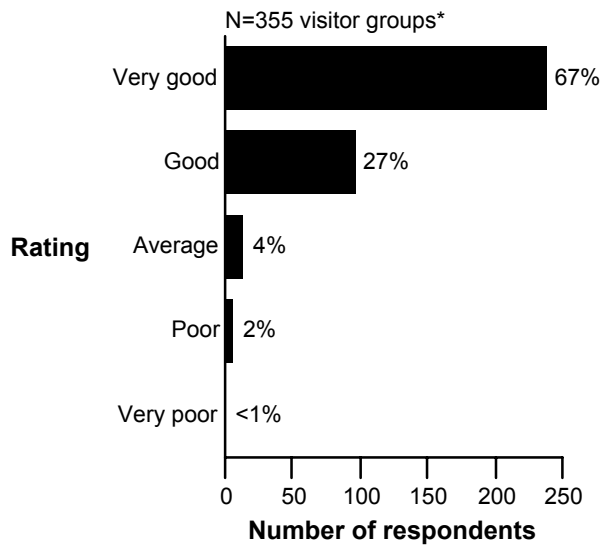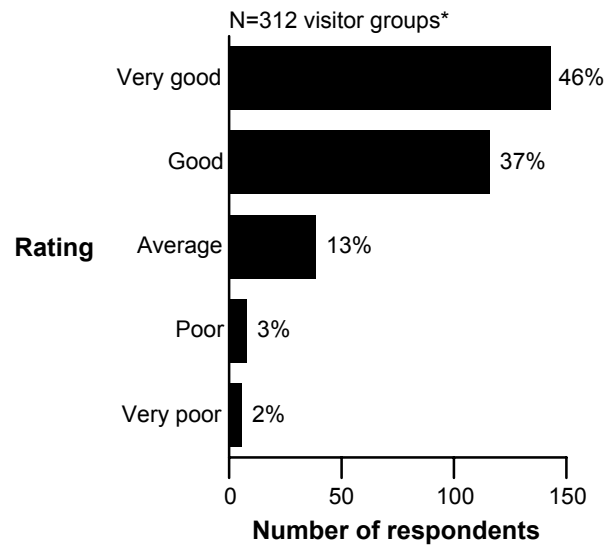**total percentages do not equal 100 because visitors could select more than one answer

N=36 visitor groups*

Rating	
Very good	44%
Good	33%
Average	19%
Poor	3%
Very poor	0%

0   5   10   15   20
Number of respondents

Figure 71: Quality of campground

N=23 visitor groups

Rating	
Very good	70%
Good	13%
Average	17%
Poor	0%
Very poor	0%

CAUTION!

0   5   10   15   20
Number of respondents

Figure 72: Quality of assistance from campground staff

N=330 visitor groups*

Rating	
Very good	41%
Good	44%
Average	12%
Poor	3%
Very poor	<1%

0   40   80   120   160
Number of respondents

Figure 73: Quality of restrooms

N=53 visitor groups*

Rating	
Very good	40%
Good	34%
Average	21%
Poor	2%
Very poor	4%

0   10   20   30
Number of respondents

Figure 74: Quality of picnic areas

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

N=127 visitor groups
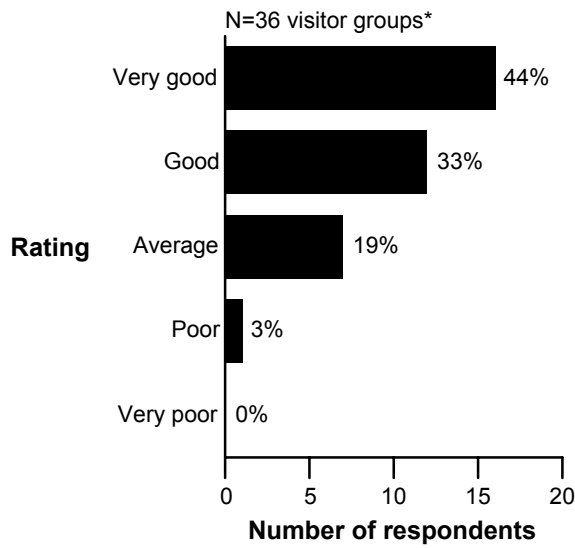

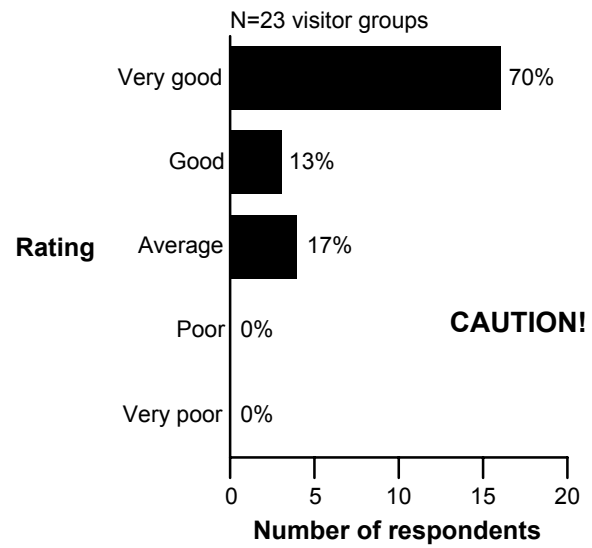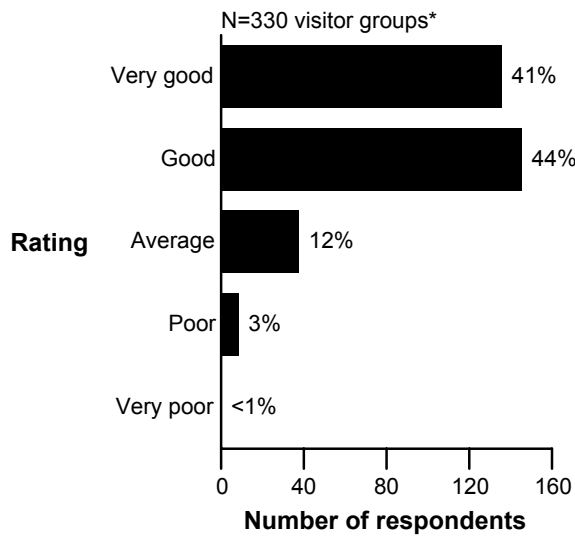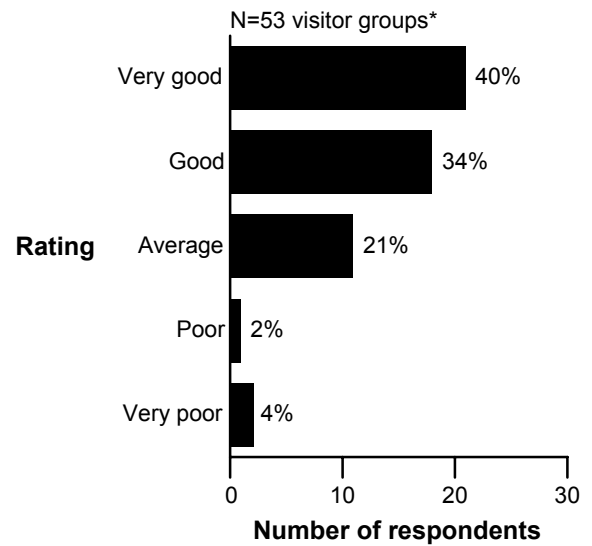Figure 75: Quality of trails in the visitor center area

N=27 visitor groups*
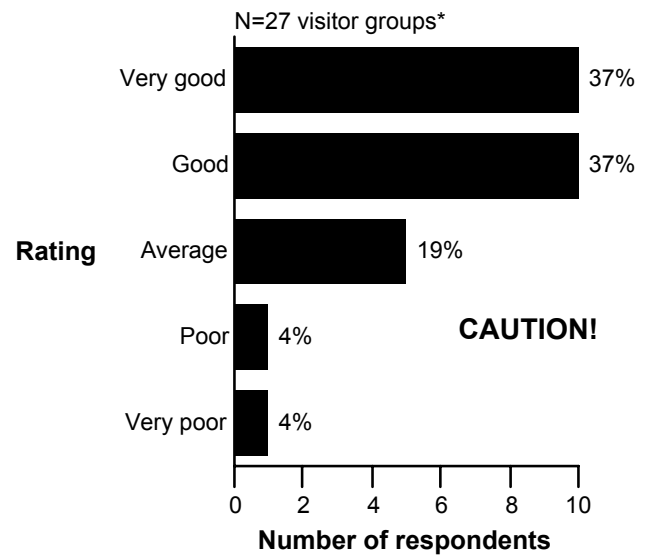
Figure 76: Quality of trails on the north side of the river

N=204 visitor groups*

Figure 77: Quality of park website: www.nps.gov/maca, used before or during visit

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Mean scores of importance and quality ratings for services and facilities

- Figures 78 and 79 show the mean scores of importance and quality ratings for all services and facilities that were rated by 30 or more visitor groups.

- All services and facilities were rated average or above in importance and quality.

Figure 78: Mean scores of importance and quality ratings for visitor services and facilities

Figure 79: Detail of Figure 78

*total percentages do not equal 100 due to rounding
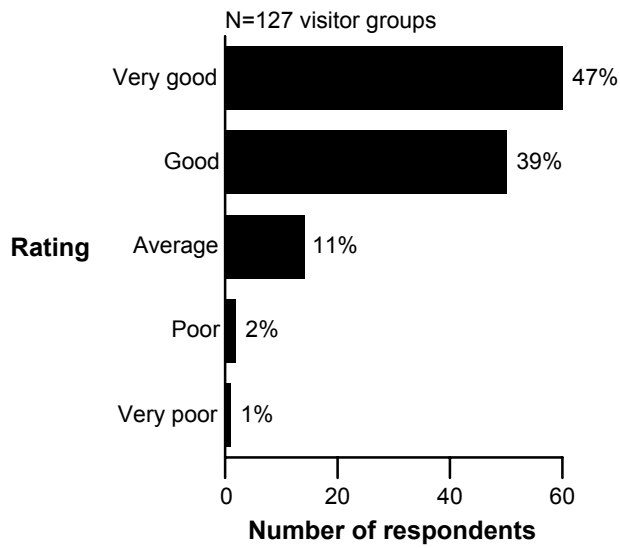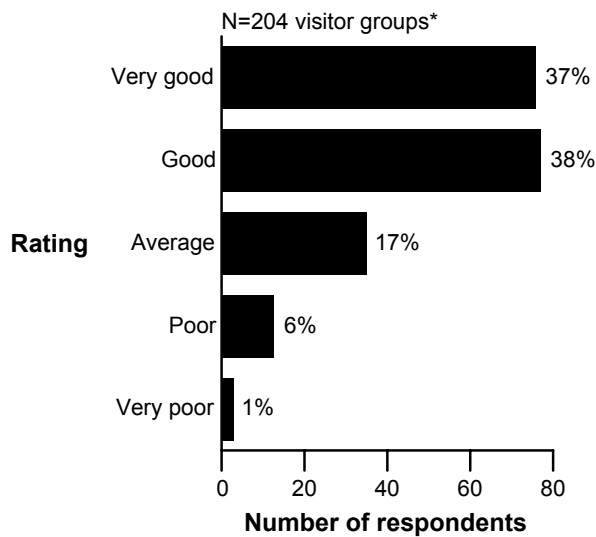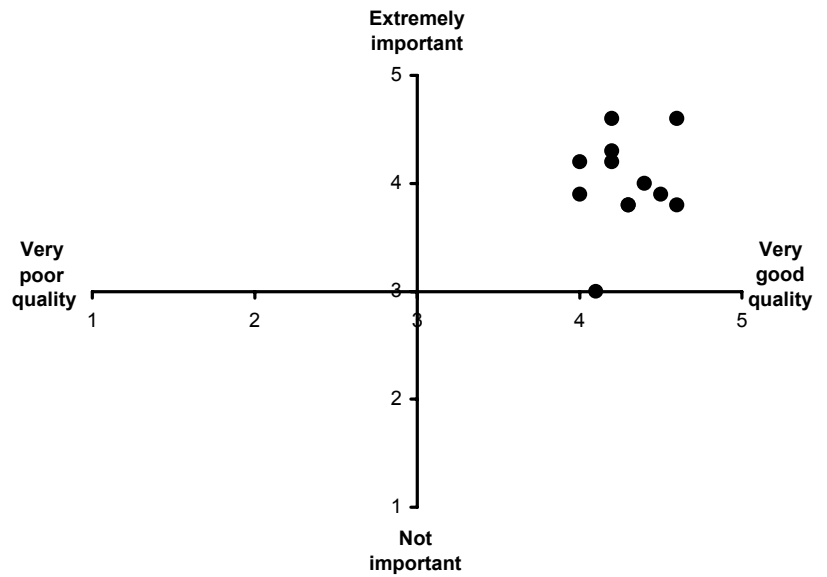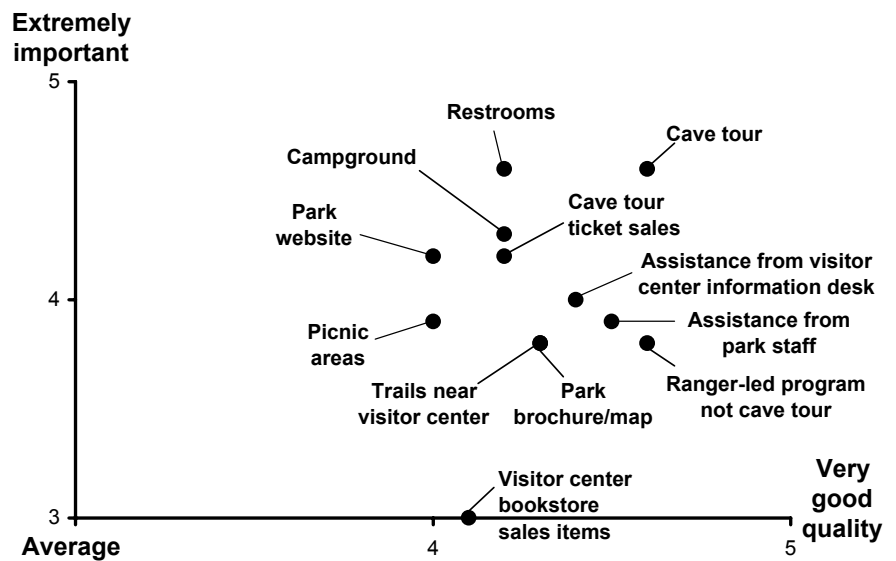**total percentages do not equal 100 because visitors could select more than one answer

Concession services and facilities used

Question 16a
> Please indicate all of the concession services and facilities that you and your group used during this visit to Mammoth Cave National Park.

Results
- As shown in Figure 80, the most used concession services and facilities included:

  73% Mammoth Cave Hotel gift shop
  49% Mammoth Cave Hotel restaurant

- The least used service and facility was:

  3% Laundromat

N=290 visitor groups**

Service/facility

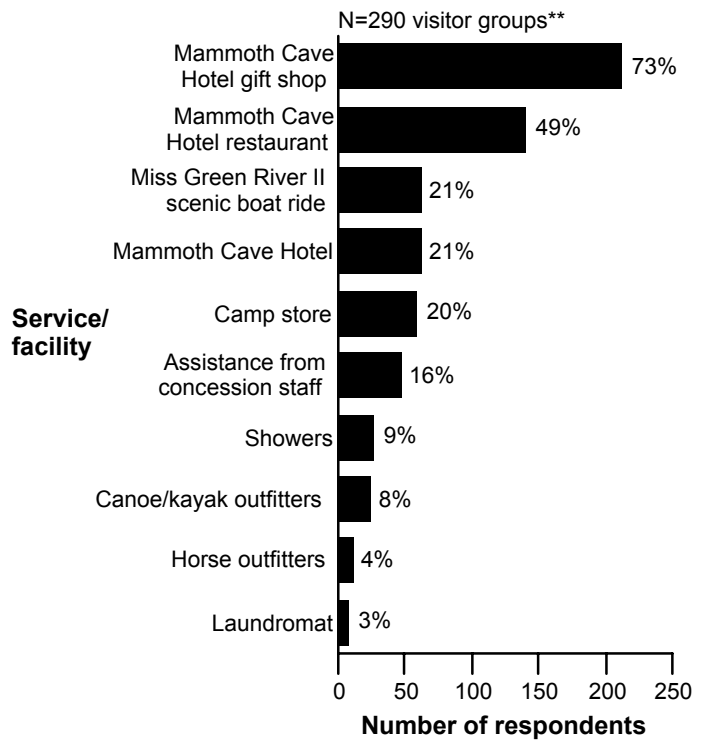| Service/facility	Percentage
Mammoth Cave Hotel gift shop	73%
Mammoth Cave Hotel restaurant	49%
Miss Green River II scenic boat ride	21%
Mammoth Cave Hotel	21%
Camp store	20%
Assistance from concession staff	16%
Showers	9%
Canoe/kayak outfitters	8%
Horse outfitters	4%
Laundromat	3%

Number of respondents

Figure 80: Concession services and facilities used

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

59

Importance ratings of concession services and facilities

Question 16b
>   For only those services that you or
>   your group used, please rate their
>   importance from 1 to 5.

>   1=Not important
>   2=Somewhat important
>   3=Moderately important
>   4=Very important
>   5=Extremely important

Results

- Figure 81 shows the combined
  proportions of "extremely
  important" and "very important"
  ratings for concession services
  and facilities that were rated by
  30 or more visitor groups.

- The services/facilities receiving
  the highest combined
  proportions of "extremely
  important" and "very important"
  ratings were:

>   82% Mammoth Cave Hotel
>   65% Mammoth Cave Hotel
>   restaurant
>   63% Assistance from
>   concession staff

- Figures 82 to 91 show the
  importance ratings for each
  service/facility.

- The service/facility receiving the
  highest "not important" rating
  was:

>   7% *Miss Green River II* scenic
>   boat ride

N=total number of groups who
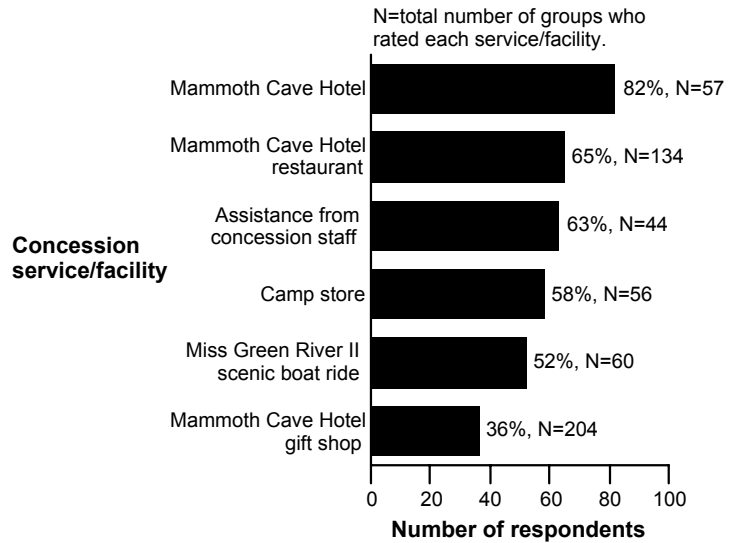rated each service/facility.

Figure 81: Combined proportions of "extremely important" and "very important" ratings for concession services and facilities

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

N=57 visitor groups

Rating	
Extremely important	54%
Very important	28%
Moderately important	14%
Somewhat important	0%
Not important	4%

Number of respondents

Figure 82: Importance of Mammoth Cave Hotel

N=134 visitor groups

Rating	
Extremely important	31%
Very important	34%
Moderately important	30%
Somewhat important	3%
Not important	2%

Number of respondents
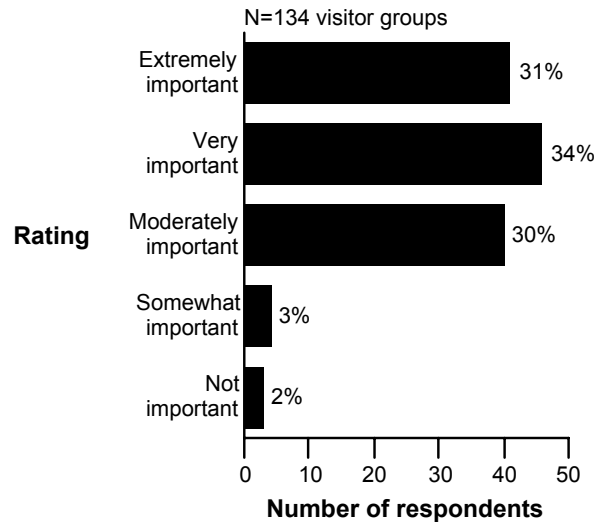
Figure 83: Importance of Mammoth Cave Hotel restaurant

N=204 visitor groups

Rating	
Extremely important	13%
Very important	23%
Moderately important	36%
Somewhat important	23%
Not important	5%

Number of respondents
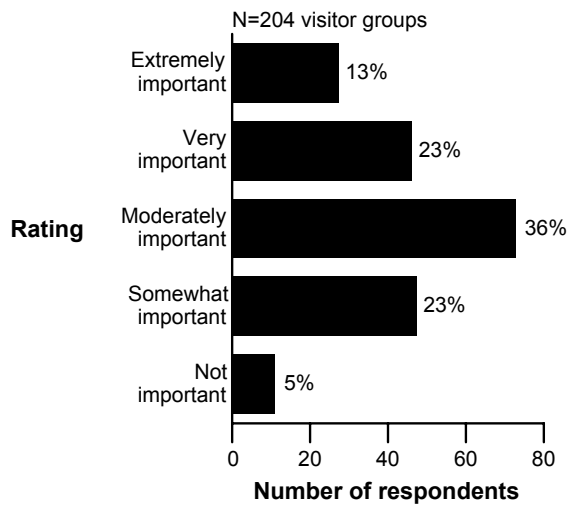
Figure 84: Importance of Mammoth Cave Hotel gift shop

N=44 visitor groups

Rating	
Extremely important	36%
Very important	27%
Moderately important	30%
Somewhat important	5%
Not important	2%

Number of respondents

Figure 85: Importance of assistance from concession staff

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

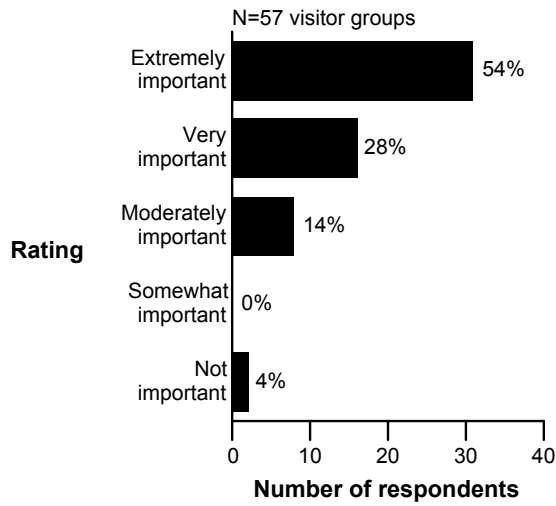N=56 visitor groups*

Rating

Extremely important — 29%
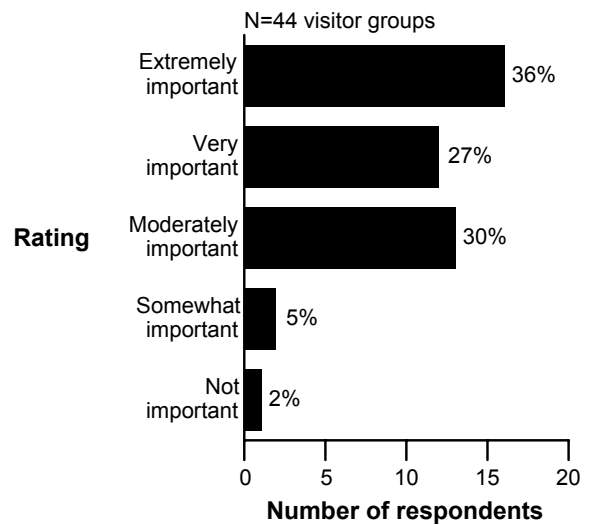Very important — 29%
Moderately important — 29%
Somewhat important — 11%
Not important — 4%

Number of respondents

Figure 86: Importance of camp store

N=27 visitor groups*

Rating

Extremely important — 52%
Very important — 26%
Moderately important — 19%
Somewhat important — 0%   **CAUTION!**
Not important — 4%

Number of respondents

Figure 87: Importance of showers

N=8 visitor groups*

Rating

Extremely important — 25%
Very important — 25%
Moderately important — 13%   **CAUTION!**
Somewhat important — 25%
Not important — 13%

Number of respondents

Figure 88: Importance of laundromat

N=24 visitor groups*

Rating

Extremely important — 38%
Very important — 46%
Moderately important — 13%
Somewhat important — 0%   **CAUTION!**
Not important — 4%

Number of respondents

Figure 89: Importance of canoe/kayak outfitters

*total percentages do not equal 100 due to rounding
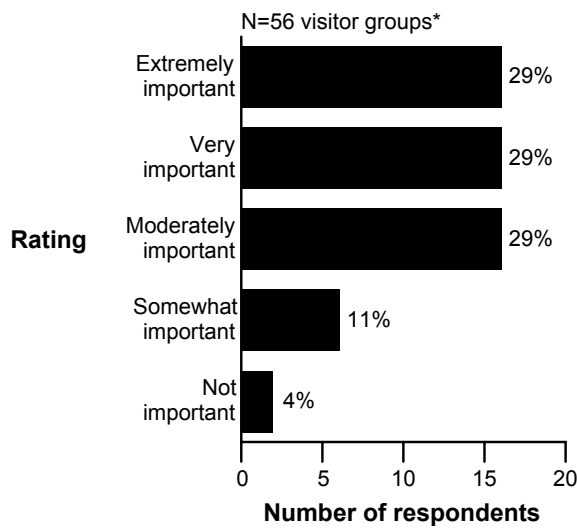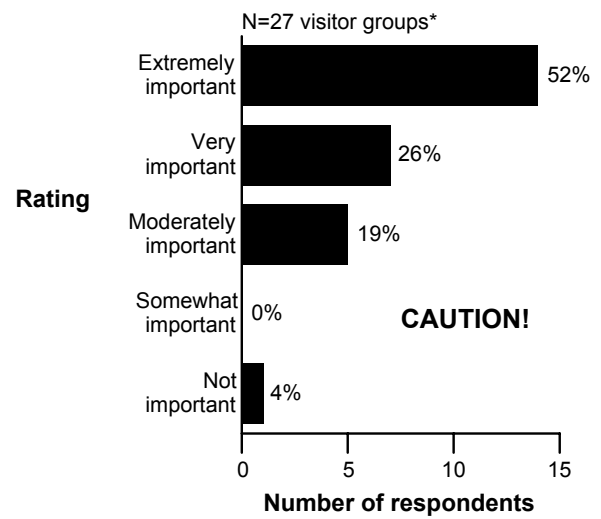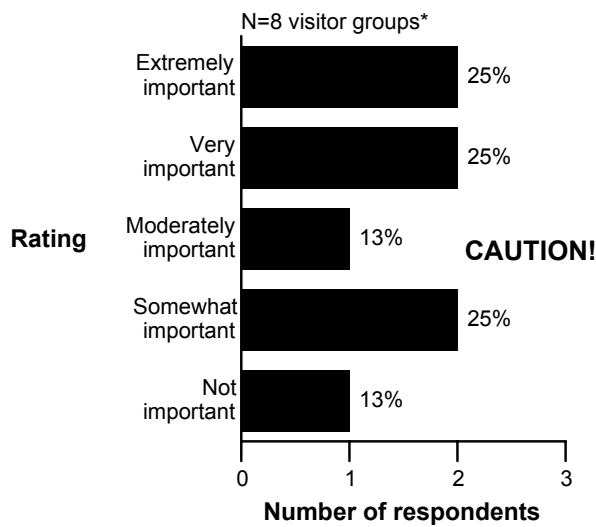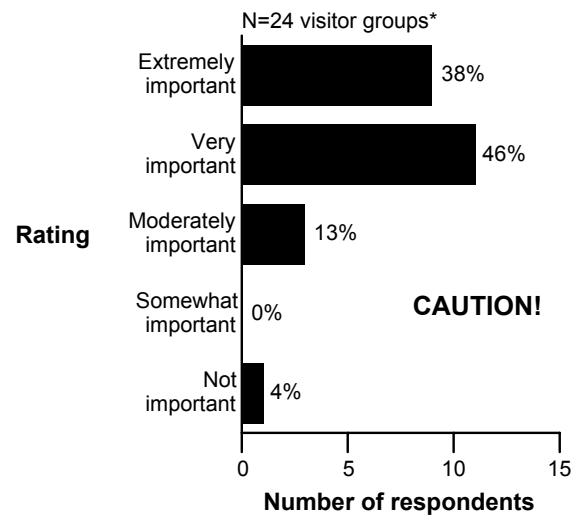**total percentages do not equal 100 because visitors could select more than one answer

N=60 visitor groups*

Rating

Extremely important — 22%
Very important — 30%
Moderately important — 27%
Somewhat important — 15%
Not important — 7%

0   5   10   15   20
Number of respondents

**Figure 90: Importance of *Miss Green River II*
scenic boat ride**

N=10 visitor groups

Rating

Extremely important — 30%
Very important — 10%
Moderately important — 40%
Somewhat important — 0%   **CAUTION!**
Not important — 20%

0   1   2   3   4
Number of respondents

Figure 91: Importance of horse outfitters

*total percentages do not equal 100 due to rounding
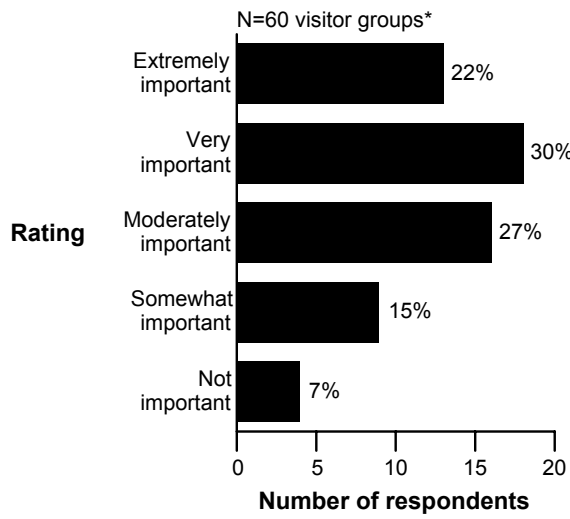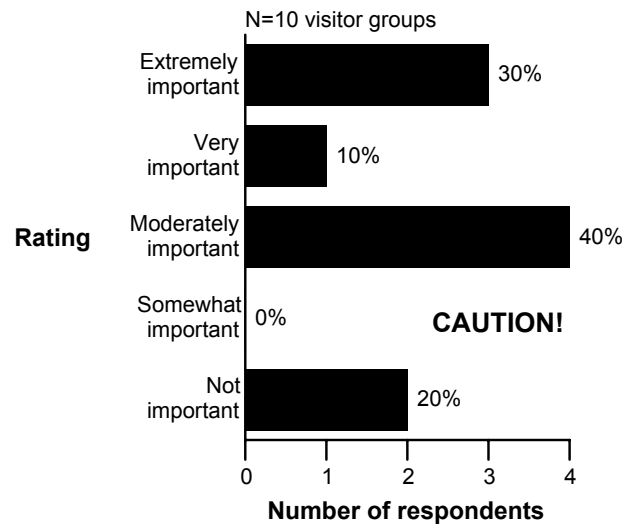**total percentages do not equal 100 because visitors could select more than one answer

Quality ratings of concession services and facilities

Question 16c
> Finally, for only those services and facilities that you and your group used, please rate their quality from 1-5.

> 1=Very poor
> 2=Poor
> 3=Average
> 4=Good
> 5=Very good

Results
- Figure 92 shows the combined proportions of "very good" and "good" quality ratings for concession services and facilities that were rated by 30 or more visitor groups.

- The services/facilities that received the highest combined proportions of "very good" and "good" quality ratings were:

> 74% Mammoth Cave Hotel gift shop
> 74% Miss Green River II scenic boat ride
> 67% Mammoth Cave Hotel restaurant

- Figures 93 to 102 show the quality ratings for each service/facility.

- The services/facilities receiving the highest "very poor" quality ratings were:

> 5% Mammoth Cave Hotel
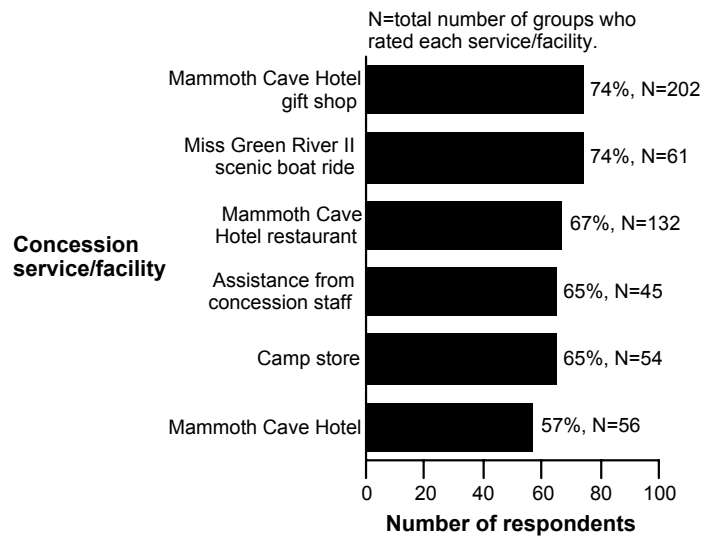> 4% Assistance from concession staff
> 4% Camp store

N=total number of groups who rated each service/facility.

Concession service/facility	
Mammoth Cave Hotel gift shop	74%, N=202
Miss Green River II scenic boat ride	74%, N=61
Mammoth Cave Hotel restaurant	67%, N=132
Assistance from concession staff	65%, N=45
Camp store	65%, N=54
Mammoth Cave Hotel	57%, N=56

Number of respondents

Figure 92: Combined proportions of "very good" and "good" quality ratings for concession services and facilities

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer
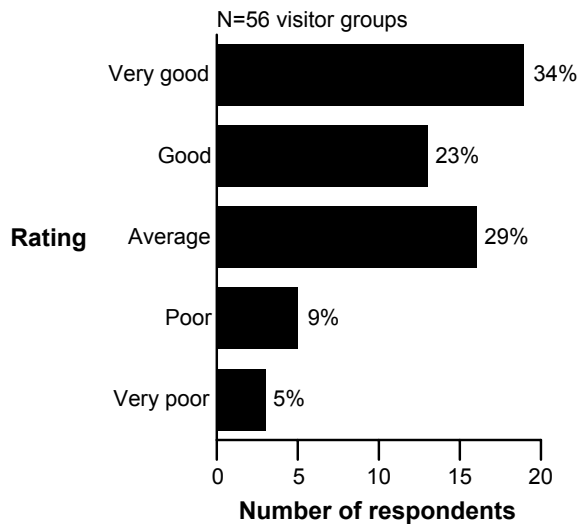
N=56 visitor groups

Rating	
Very good	34%
Good	23%
Average	29%
Poor	9%
Very poor	5%

Number of respondents

Figure 93: Quality of Mammoth Cave Hotel

N=132 visitor groups

Rating	
Very good	36%
Good	31%
Average	24%
Poor	6%
Very poor	3%

Number of respondents
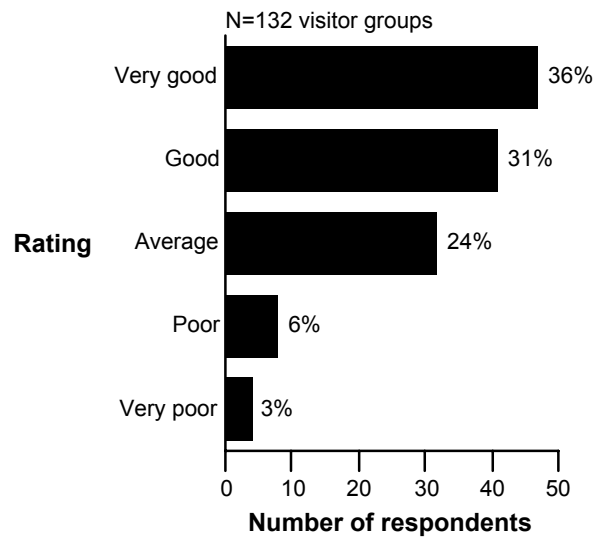
Figure 94: Quality of Mammoth Cave Hotel restaurant

N=202 visitor groups*

Rating	
Very good	29%
Good	45%
Average	23%
Poor	1%
Very poor	1%

Number of respondents
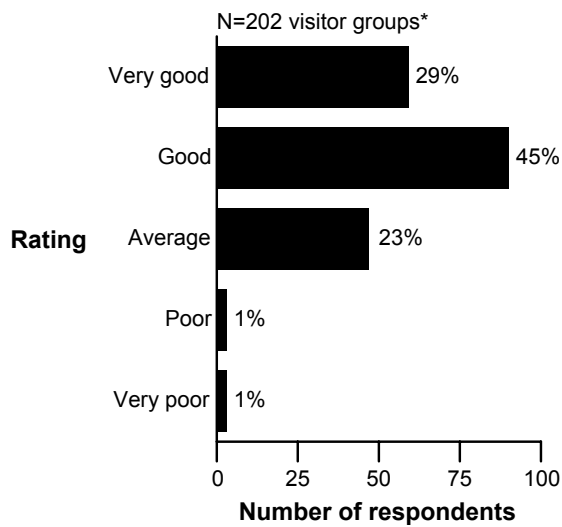
Figure 95: Quality of Mammoth Cave Hotel gift shop

N=45 visitor groups

Rating	
Very good	38%
Good	27%
Average	29%
Poor	2%
Very poor	4%

Number of respondents

Figure 96: Quality of assistance from concession staff

*total percentages do not equal 100 due to rounding
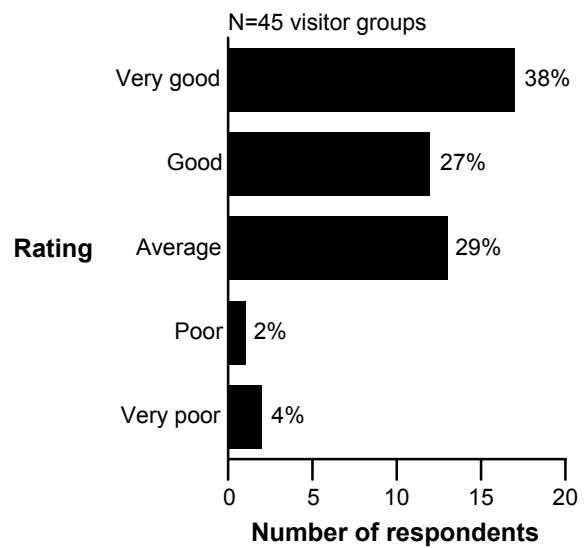**total percentages do not equal 100 because visitors could select more than one answer
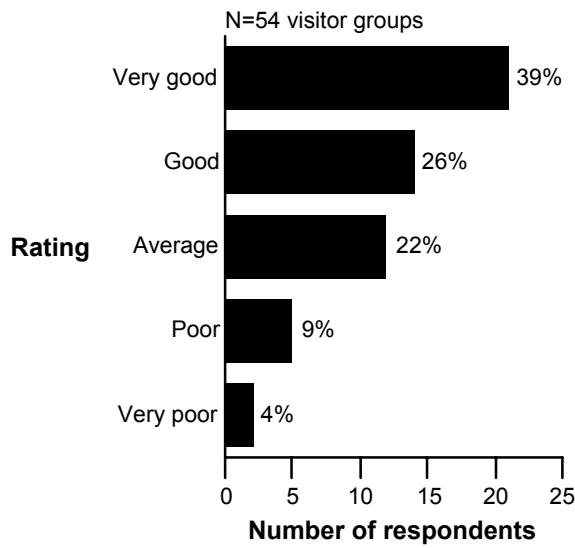
N=54 visitor groups

Rating

Very good	39%
Good	26%
Average	22%
Poor	9%
Very poor	4%

Number of respondents

Figure 97: Quality of camp store

N=25 visitor groups

Rating

Very good	12%
Good	24%
Average	36%
Poor	12% **CAUTION!**
Very poor	16%

Number of respondents

Figure 98: Quality of showers

N=8 visitor groups*

Rating

Very good	38%
Good	13%
Average	13% **CAUTION!**
Poor	25%
Very poor	13%

Number of respondents

Figure 99: Quality of laundromat

N=24 visitor groups

Rating

Very good	29%
Good	50%
Average	17%
Poor	0% **CAUTION!**
Very poor	4%

Number of respondents

Figure 100: Quality of canoe/kayak outfitters

*total percentages do not equal 100 due to rounding
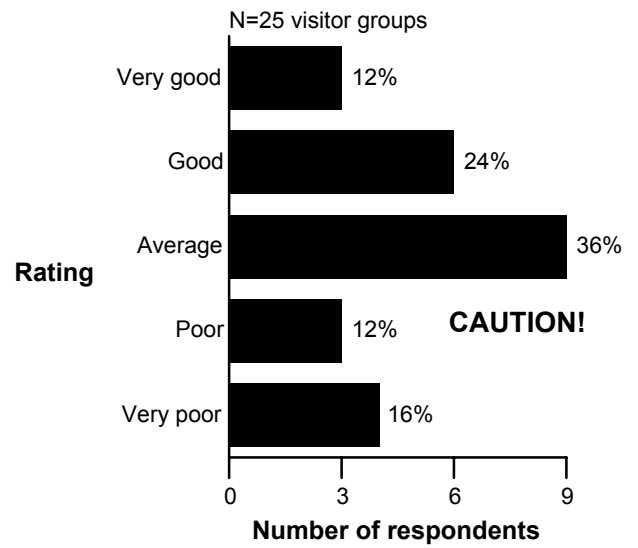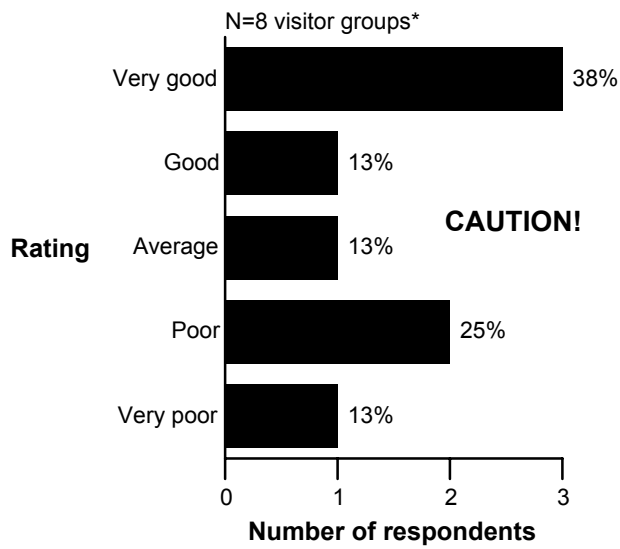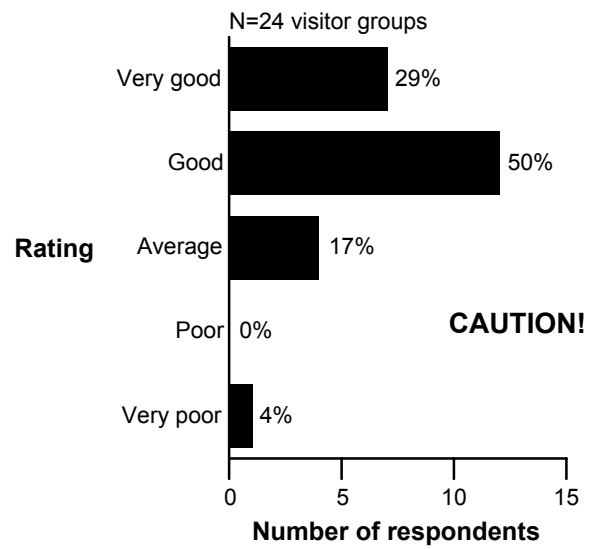**total percentages do not equal 100 because visitors could select more than one answer

N=61 visitor groups

Rating	
Very good	31%
Good	43%
Average	20%
Poor	3%
Very poor	3%

0   10   20   30
Number of respondents

Figure 101: Quality of *Miss Green River II* scenic boat ride

N=10 visitor groups

Rating	
Very good	20%
Good	40%
Average	20%
Poor	10%
Very poor	10%

CAUTION!

0   1   2   3   4
Number of respondents

Figure 102: Quality of horse outfitters

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer
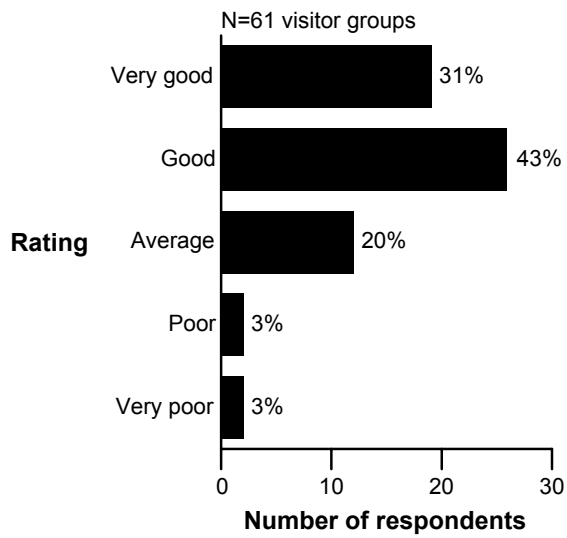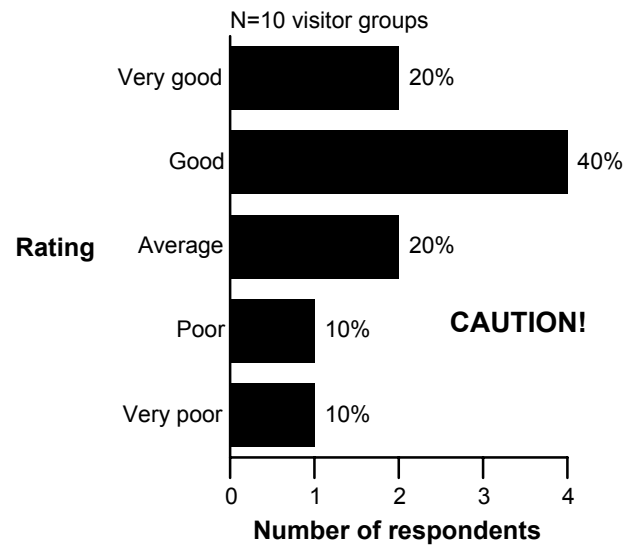
Mean scores of importance and quality ratings

- Figures 103 and 104 show the mean scores of importance and quality ratings for all concession services and facilities that were rated by 30 or more visitor groups.

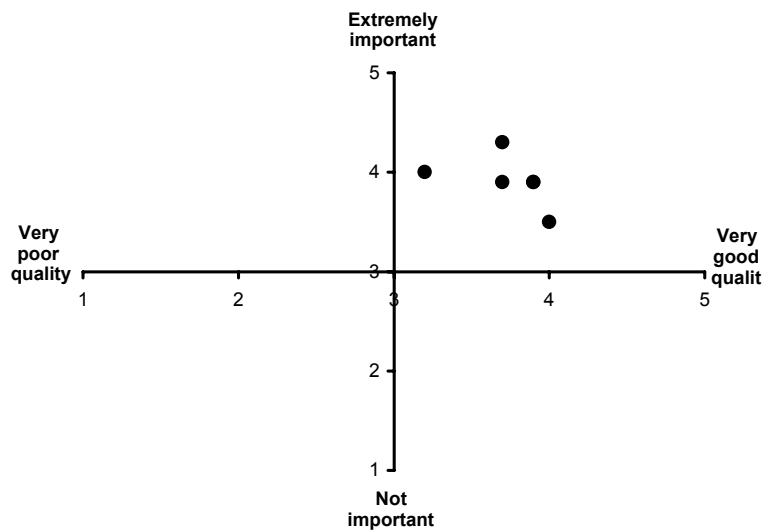- All concession services and facilities were rated above average in importance and quality.

Figure 103: Mean scores of importance and quality ratings for concession services and facilities
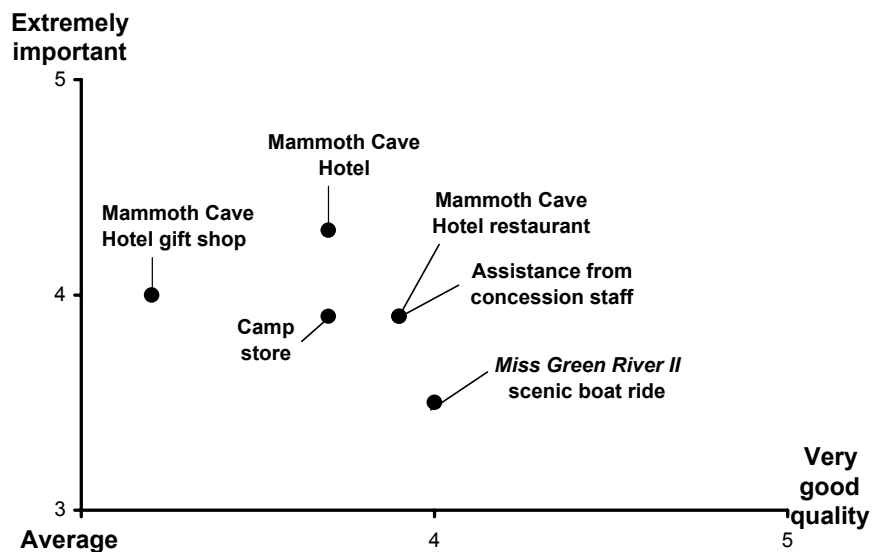
Figure 104: Detail of Figure 103

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Importance of protection of park attributes/resources

Question 25

It is the National Park Service's responsibility to protect Mammoth Cave NP's natural, scenic, and cultural resources and qualities, while at the same time providing for public enjoyment. Please rate the importance of each of the attributes/resources to you and your group.

Results

- As shown in Figure 105, the park attributes and resources that received the highest combined "extremely important" and "very important" ratings included:

> 97% Cave features/environment
> 96% Clean water
> 94% Clean air/visibility

- As shown in Table 13, the attributes and resources that received the highest "not important" rating were:

> 3% Night skies
> 3% Historic buildings/cultural resources
> 3% Recreational opportunities
> 3% Solitude

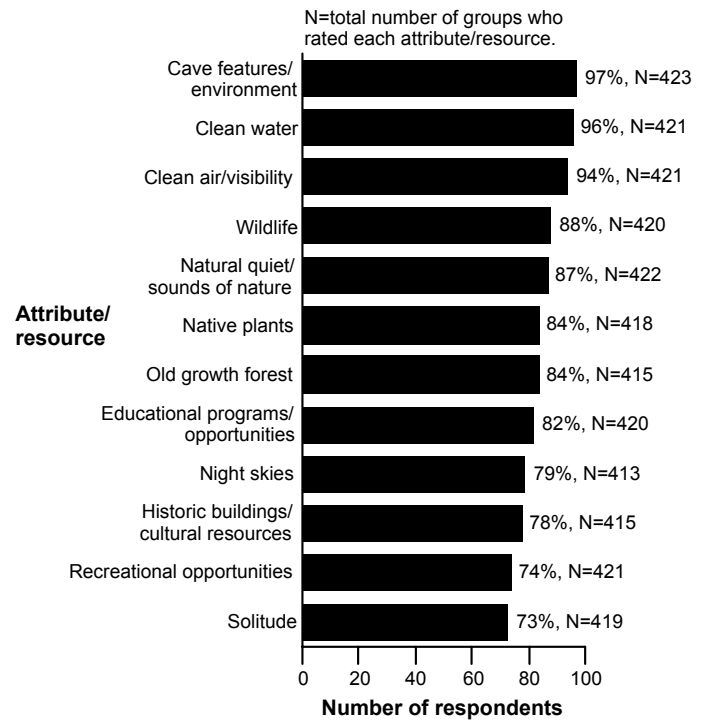N=total number of groups who rated each attribute/resource.

Figure 105: Combined proportions of "extremely important" and "very important" ratings for park attributes/resources

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Table 13: Importance of park attributes/resources
N=number of visitor groups who rated each attribute/resource;
percentages may not equal 100 due to rounding.

Attribute/resource	N	Rating (%)				
		Not important	Somewhat important	Moderately important	Very important	Extremely important
Cave features/environment	423	<1	<1	3	20	77
Native plants	418	1	3	12	34	50
Old growth forest	415	1	3	12	30	54
Wildlife	420	<1	1	10	27	61
Clean water	421	<1	0	3	22	74
Clean air/visibility	421	<1	<1	5	22	72
Night skies	413	3	3	15	30	49
Historic buildings/cultural resources	415	3	4	15	37	41
Recreational opportunities (hiking, camping, etc.)	421	3	4	19	37	37
Educational/programs opportunities	420	2	3	14	39	43
Natural quiet/sounds of nature	422	1	2	10	33	54
Solitude	419	3	6	18	31	42

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

National significance of Mammoth Cave NP

Question 24
Mammoth Cave NP was established because of its significance to the nation. In your opinion, what is the national significance of this park?

Results
- 79% of visitor groups (N=342) responded to this question.

- The most common responses (see Table 14) included:

    Historical significance
    Important to preserve for future generations
    Cave size
    Natural beauty

Table 14: National significance of Mammoth Cave NP
N=468 comments;
some visitor groups made more than one comment.

Comment	Number of times mentioned
Historical significance	81
Important to preserve for future generations	60
Cave size	57
Natural beauty	34
Geological/scientific significance	33
It is a natural wonder	33
Important for the public to experience	22
Cultural/local/national significance	22
Uniqueness of the cave	20
Educational significance	20
The caves	18
Mineral extraction/resource utility	14
Ecological/environmental significance	11
Is generally important	9
Important because it is natural	8
Important for Park Service	5
Important to wildlife	5
Recreational significance	4
Economical significance	3
Unsure of significance	3
No national significance	2
Escape for the public	2
Important to water table	2

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Overall Quality

Question 27

Overall, how would you and your group rate the quality of facilities, services, and recreational opportunities at Mammoth Cave NP during this trip?

Results

- 93% of visitor groups rated the overall quality as "very good" or "good" (see Figure 106).

- Less than 2% rated the overall quality as "very poor" or "poor."

N=428 visitor groups*

Rating

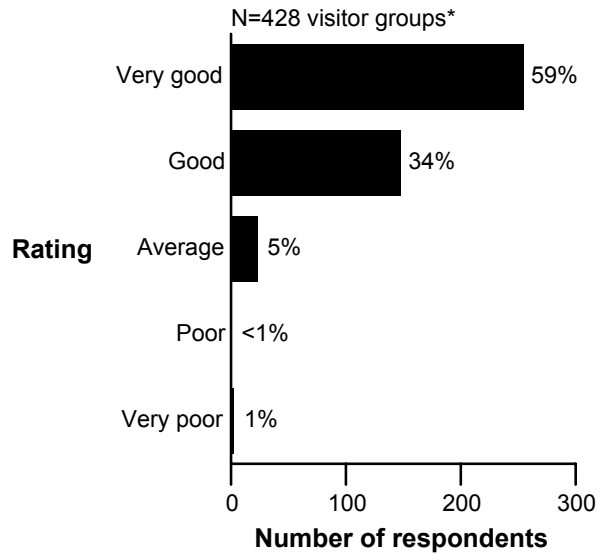|	
Very good	59%
Good	34%
Average	5%
Poor	<1%
Very poor	1%

Number of respondents

Figure 106: Overall quality of visitor facilities, services, and recreational opportunities

*total percentages do not equal 100 due to rounding
**total percentages do not equal 100 because visitors could select more than one answer

Additional comments

Question 26
Is there anything else you and your group would like to tell us about your visit to Mammoth Cave NP?

Results
- 57% of visitor groups (N=250 visitor groups) responded to this question.

- Table 15 shows a summary of visitor comments. A complete copy of hand-written comments is included in the Visitor Comments Appendix.

Table 15: Additional comments
N=372 comments;
some visitor groups made more than one comment.

Comment	Number of times mentioned
PERSONNEL	
Guides/staff were great	28
Guides/staff were knowledgeable/informative	14
Guides/staff were friendly	11
Guides/staff were helpful	5
Guides were not good	4
Guides were interesting	3
Staff was efficient	2
Guides/staff not friendly	2
Guides spoke too softly	2
Other comments	6
INTERPRETIVE SERVICES	
Enjoyed tour	8
Tour was very educational	8
Inform visitors of lunch/water availability on tours	7
Good variety of tours	3
Would like more information on caves/history	3
Need maps of the park	2
Visitor center needs to be better coordinated	2
Website needs improvement	2
Other comments	11
FACILITIES/MAINTENANCE	
Lodge/hotel need to be improved	9
Campgrounds need improvement	6
Park is clean	5
Caves need more/better lighting	4
Need more/better signage	4
More restrooms needed	3
Set traps for yellow jackets	2
Other comments	14

Table 15: Additional comments
(continued)

Comment	Number of times mentioned
POLICIES/MANAGEMENT	
Need more information on tour reservations before visit	8
Concerned with number of small children/babies	4
Need extended hours/days of operation	4
Price is too high	4
Would like handicap accessibility information	3
Showers should be free to paid campers	3
Disappointed with long wait	3
Park access was good	2
Liked policies on dog allowance	2
Park should look into alternative energy sources	2
Suggest tour packages to make more affordable	2
Other comments	12
RESOURCE MANAGEMENT	
Need more/improved hiking trails	2
Hiking trails were great	2
Other comments	3
GENERAL COMMENTS	
Enjoyed visit	38
Will plan return visit	36
Had a good experience	11
Sights were awesome/wonderful	5
Park was beautiful	5
Survey too long and redundant	5
Lack of evening entertainment	4
Keep up the good work	4
Thanks	4
Felt crowded	4
Dissatisfied with food quality	3
Wished had more time to spend	3
Enjoyed ferry	2
Food was good	2
Did not like park	2
Trip was educational	2
Other comments	16

APPENDICES

Appendix 1: The Questionnaire

Appendix 2: Additional Analysis

The Visitor Services Project (VSP) offers the opportunity to learn more from VSP visitor study data. Additional analysis can be done using the park's VSP visitor study data that was collected and entered into the computer. Two-way and three-way cross tabulations can be made of any of the characteristics listed below. Be as specific as possible—you may select a single program/service/facility instead of all that were listed in the questionnaire. Include your name, address, and phone number in the request.

- Sources of information used prior to visit
- Received needed information?
- Awareness of cave tour reservation system prior to visit?
- Make cave tour reservations prior to visit?
- Cave tour reservation made by phone or online?
- Quality of cave tour reservation experience
- Mammoth Cave visit as part of travel plans
- Primary reason for visit to park area (within 30-mile drive)
- Services used in "gateway" communities
- Length of stay (hours/days)
- Overnight stay away from home in park area
- Number of nights stayed inside park
- Number of nights stayed in park area
- Type of lodging in park
- Type of lodging in park area
- Other places visited in area
- Take cave tour?
- Cave tours taken

- Number of people in personal group on cave tour
- Length of wait for cave tour
- Length of cave tour
- Value for fee paid
- Activities while waiting for cave tour
- Number of people on cave tour
- How crowded was cave tour?
- Tour too crowded to be enjoyable?
- Recommend to others?
- Preferred option to protect cave resources
- Effect of price on whether to take a tour
- Effect of price on which tours were taken
- Effect of price on how many tours were taken
- Activities
- Time of first arrival at visitor center
- Visitor services and facilities used
- Importance of visitor services and facilities
- Quality of visitor services and facilities
- Concession services and facilities used

- Importance of concession services and facilities
- Quality of concession services and facilities
- Adequacy of directional signs
- Group size
- Number of entries into park
- Group type
- Visitor age
- Zip code/state of residence
- Country of residence
- Number park visits in last 6 months
- Number of visits in last 5 years
- Respondent ethnicity and race
- Highest level of education
- Any members have difficulty accessing activities/services?
- Activities/services that had difficult access
- What physical conditions did the person have?
- Importance of attributes/ resources
- Overall quality of visitor facilities, services, and recreational opportunities

Appendix 3: Decision Rules for Checking Non-response Bias

There are several methods for checking non-response bias. However, the most common way is to use some demographic indicators to compare between respondents and non-respondents (Dey 1997; Salant and Dillman 1994; Dillman 2000; Stoop 2004). In this study, group size and age of the group member (at least 16 years old) completing the survey were two variables that were used to check for non-response bias.

Two independent-sample T-tests were used to test the differences between respondents and non-respondents. The p-values represent the significance levels of these tests. If p-value is greater than 0.05, the two groups are judged to be insignificantly different.

The hypotheses for checking non-response bias are:

1. Average age of respondents – average age of non-respondents = 0

2. Average group size of respondents – average group size of non-respondents = 0

As shown in Table 2, the p-value for respondent/non-respondent group size and age tests are greater than 0.05, indicating insignificant differences between respondents and non-respondents. Thus, non-response bias is judged to be insignificant.

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Filion F. L. (Winter 1975-Winter 1976) Estimating Bias due to Non-response in Mail Surveys. *Public Opinion Quarterly*, Vol 39 (4): 482-492.
Dey, E.L. (1997) Working with Low Survey Response Rates: The Efficacy of Weighting Adjustment. *Research in Higher Education*, 38 (2): 215-227.
Dillman D. A. (2000) *Mail and Internet Surveys: The Tailored Design Method*, 2nd Edition, New York: John Wiley and Sons, Inc.
Dillman D. A. and Carley-Baxter L. R. (2000) *Structural determinants of survey response rate over a 12-year period*, 1988-1999, Proceedings of the section on survey research methods, 394-399, American Statistical Association, Washington, D.C.
Goudy, W. J. (1976) Non-response Effect on Relationships Between Variables. *Public Opinion Quarterly*. Vol 40 (3): 360-369.
Mayer C. S. and Pratt Jr. R. W. (Winter 1966-Winter 1967) A Note on Non-response in a Mail Survey. *Public Opinion Quarterly*. Vol 30 (4): 637-646.
Salant, P. and Dillman, D. A. (1994) *How to Conduct Your Own Survey*. U.S.: John Wiley and Sons, Inc.
Stoop, I. A. L. (2004) Surveying Non-respondents. *Field Methods*, 16 (1): 23.

Appendix 4: Visitor Services Project Publications

Reports 1-6 (pilot studies) are available from the University of Idaho Park Studies Unit. All other VSP reports listed are available from the parks where the studies were conducted or from the UI PSU. All studies were conducted in summer unless otherwise noted.

1982
 1. Mapping interpretive services: A pilot study at Grand Teton National Park.

1983
 2. Mapping interpretive services: Identifying barriers to adoption and diffusion of the method.
 3. Mapping interpretive services: A follow-up study at Yellowstone National Park and Mt Rushmore National Memorial.
 4. Mapping visitor populations: A pilot study at Yellowstone National Park.

1985
 5. North Cascades National Park Service Complex
 6. Crater Lake National Park

1986
 7. Gettysburg National Military Park
 8. Independence National Historical Park
 9. Valley Forge National Historical Park

1987
10. Colonial National Historical Park (summer & fall)
11. Grand Teton National Park
12. Harpers Ferry National Historical Park
13. Mesa Verde National Park
14. Shenandoah National Park (summer & fall)
15. Yellowstone National Park
16. Independence National Historical Park: Four Seasons Study

1988
17. Glen Canyon National Recreational Area
18. Denali National Park and Preserve
19. Bryce Canyon National Park
20. Craters of the Moon National Monument

1989
21. Everglades National Park (winter)
22. Statue of Liberty National Monument

23. The White House Tours, President's Park

1989 (continued)
24. Lincoln Home National Historic Site
25. Yellowstone National Park
26. Delaware Water Gap National Recreation Area
27. Muir Woods National Monument

1990
28. Canyonlands National Park (spring)
29. White Sands National Monument
30. National Monuments & Memorials, Washington, D.C.
31. Kenai Fjords National Park
32. Gateway National Recreation Area
33. Petersburg National Battlefield
34. Death Valley National Monument
35. Glacier National Park
36. Scott's Bluff National Monument
37. John Day Fossil Beds National Monument

1991
38. Jean Lafitte National Historical Park (spring)
39. Joshua Tree National Monument (spring)
40. The White House Tours, President's Park (spring)
41. Natchez Trace Parkway (spring)
42. Stehekin-North Cascades NP/ Lake Chelan NRA
43. City of Rocks National Reserve
44. The White House Tours, President's Park (fall)

1992
45. Big Bend National Park (spring)
46. Frederick Douglass National Historic Site (spring)
47. Glen Echo Park (spring)
48. Bent's Old Fort National Historic Site
49. Jefferson National Expansion Memorial
50. Zion National Park
51. New River Gorge National River
52. Klondike Gold Rush National Historical Park, AK
53. Arlington House-The Robert E. Lee Memorial

Visitor Services Project Publications (continued)

1993
54. Belle Haven Park/Dyke Marsh Wildlife Preserve (spring)
55. Santa Monica Mountains National Recreation Area (spring)
56. Whitman Mission National Historic Site
57. Sitka National Historical Park
58. Indiana Dunes National Lakeshore
59. Redwood National Park
60. Channel Islands National Park
61. Pecos National Historical Park
62. Canyon de Chelly National Monument
63. Bryce Canyon National Park (fall)

1994
64. Death Valley National Monument Backcountry (winter)
65. San Antonio Missions National Historical Park (spring)
66. Anchorage Alaska Public Lands Information Center
67. Wolf Trap Farm Park for the Performing Arts
68. Nez Perce National Historical Park
69. Edison National Historic Site
70. San Juan Island National Historical Park
71. Canaveral National Seashore
72. Indiana Dunes National Lakeshore (fall)
73. Gettysburg National Military Park (fall)

1995
74. Grand Teton National Park (winter)
75. Yellowstone National Park (winter)
76. Bandelier National Monument
77. Wrangell-St. Elias National Park & Preserve
78. Adams National Historic Site
79. Devils Tower National Monument
80. Manassas National Battlefield Park
81. Booker T. Washington National Monument
82. San Francisco Maritime National Historical Park
83. Dry Tortugas National Park

1996
84. Everglades National Park (spring)
85. Chiricahua National Monument (spring)
86. Fort Bowie National Historic Site (spring)
87. Great Falls Park, Virginia (spring)
88. Great Smoky Mountains National Park
89. Chamizal National Memorial
90. Death Valley National Park (fall)
91. Prince William Forest Park (fall)
92. Great Smoky Mountains National Park (summer & fall)

1997
93. Virgin Islands National Park (winter)
94. Mojave National Preserve (spring)
95. Martin Luther King, Jr., National Historic Site (spring)
96. Lincoln Boyhood National Memorial
97. Grand Teton National Park
98. Bryce Canyon National Park
99. Voyageurs National Park
100. Lowell National Historical Park

1998
101. Jean Lafitte National Historical Park & Preserve (spring)
102. Chattahoochee River National Recreation Area (spring)
103. Cumberland Island National Seashore (spring)
104. Iwo Jima/Netherlands Carillon Memorials
105. National Monuments & Memorials, Washington, D.C.
106. Klondike Gold Rush National Historical Park, AK
107. Whiskeytown National Recreation Area
108. Acadia National Park

1999
109. Big Cypress National Preserve (winter)
110. San Juan National Historic Site, Puerto Rico (winter)
111. St. Croix National Scenic Riverway
112. Rock Creek Park
113. New Bedford Whaling National Historical Park
114. Glacier Bay National Park & Preserve
115. Kenai Fjords National Park
116. Lassen Volcanic National Park
117. Cumberland Gap National Historical Park (fall)

Visitor Services Project Publications (continued)

2000
118. Haleakala National Park (spring)
119. White House Tour and White House Visitor Center (spring)
120. USS Arizona Memorial
121. Olympic National Park
122. Eisenhower National Historic Site
123. Badlands National Park
124. Mount Rainier National Park

2001
125. Biscayne National Park (spring)
126. Colonial National Historical Park (Jamestown)
127. Shenandoah National Park
128. Pictured Rocks National Lakeshore
129. Crater Lake National Park
130. Valley Forge National Historical Park

2002
131. Everglades National Park
132. Dry Tortugas National Park
133. Pinnacles National Monument
134. Great Sand Dunes National Monument & Preserve
135. Pipestone National Monument
136. Outer Banks Group (Cape Hatteras National Seashore, Ft. Raleigh National Historic Site, and Wright Brothers National Memorial)
137. Sequoia & Kings Canyon National Parks and Sequoia National Forest
138. Catoctin Mountain Park
139. Hopewell Furnace National Historic Site
140. Stones River National Battlefield

2003
141. Gateway National Recreation Area: Floyd Bennett Field (spring)
142. Cowpens National Battlefield (spring)
143. Grand Canyon National Park – North Rim
144. Grand Canyon National Park – South Rim
145. C&O Canal National Historical Park

2003 (continued)
146. Capulin Volcano National Monument
147. Oregon Caves National Monument
148. Knife River Indian Villages National Historic Site
149. Fort Stanwix National Monument
150. Arches National Park
151. Mojave National Preserve (fall)

2004
152. Joshua Tree National Park (spring)
153. New River Gorge National River
154. George Washington Birthplace National Monument
155. Craters of the Moon National Monument & Preserve
156. Dayton Aviation Heritage National Historical Park
157. Apostle Islands National Lakeshore
158. Keweenaw National Historical Park
159. Effigy Mounds National Monument
160. Saint-Gaudens National Historic Site
161. Manzanar National Historic Site
162. John Day Fossil Beds National Monument

2005
163. Congaree National Park
164. San Francisco Maritime National Historical Park
165. Lincoln Home National Historic Site
166. Chickasaw National Recreation Area
167. Timpanogos Cave National Monument
168. Yosemite National Park
169. Fort Sumter National Monument
170. Harpers Ferry National Historical Park
171. Cuyahoga Valley National Park
172. Johnstown Flood National Memorial
173. Nicodemus National Historic Site

2006
174. Kings Mountain National Military Park
175. John F. Kennedy National Historic Site
176. Devils Postpile National Monument
177. Mammoth Cave National Park

For more information about the Visitor Services Project, please contact the University of Idaho Park Studies Unit, website: www.psu.uidaho.edu or phone (208) 885-7863.

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