



Biscayne National Park Socioeconomic Monitoring Pilot Implementation

Summer 2016

Natural Resource Report NPS/BISC/NRR—2018/1852



ON THE COVER

Photograph of Boca Chita Key

Photograph courtesy of the National Park Service

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Natural Resource Report NPS/BISC/NRR—2018/1852

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Executive Summary

- This report describes the results of a visitor study at Biscayne National Park (NP) conducted from July 1 through July 10, 2016. During the sampling period, 1,128 visitor groups were contacted to participate in the survey. Of those groups, 755 agreed to participate in the study by accepting a mail-back survey packet. Questionnaires were completed and returned by 248 visitor groups, resulting in a completion rate of 33% among those visitor groups that agreed to participate in the study and an overall response rate of 22% for the study.
- This report profiles a systematic sample of Biscayne NP visitors. The results present a ‘snapshot-in-time’ and do not necessarily apply to visitor groups during other times of the year. Namely, per the experience of park staff, local Miami-Dade County and south Florida residents constitute the majority of visitation to the park in the summer months, compared to increased visitation from national and international visitors during the winter months.
- Most of the results are presented in graphs and frequency tables. Summaries of visitor comments are included in the body of the report. Verbatim comments are included in the Visitor Comment Appendix (bound separately).
- Sixty percent of visitor groups had three or more members and 34% of visitor groups were groups of two. The majority (56%) of visitor groups identified groups of family.
- Only 7% of visitors were 65 years old or older. Fifteen percent of visitors were 55 to 64 years old, 33% of visitors were 35 to 54 years old, 23% of visitors were 18 to 34 years old, and 22% of visitors were under 18 years old.
- Most visitors (95%) were white. More than half (52%) of visitors identified themselves as Hispanic or Latino. Few visitors were Asian (3%), American Indian or Alaska Native (<1%), black or African American (2%), or Native Hawaiian or other Pacific Islander (<1%).
- Most visitor groups preferred to speak (89%) and read (92%) English when visiting an area such as Biscayne NP.
- Individuals from the United States comprised 96% of total visitation during the survey period. At the state level, 74% of visitors were from the state of Florida and less than 10% came from Georgia, Texas, and New Jersey. International visitors comprised 3% of total visitation and less than 30 visitors. Of international visitors, 23% were from Germany, 15% were from Canada, 15% were from Scotland, and 15% were from Venezuela.
- Forty-four percent of visitors indicated that they had visited Biscayne NP five times or more in the last 12 months, while 33% had only visited the park once during the last 12 months. Thirty percent of visitors indicated that they had not visited another National Park Service site within the past 12 months.
- Eighty-seven percent of visitor groups obtained information about Biscayne NP prior to this trip. The most commonly reported information sources used were previous visits (55%), the park website (21%), and friends/relatives/word of mouth (21%). The majority (96%) of visitor groups had the information they needed about Biscayne NP for their trip.

- Ninety-eight percent of visitor groups used a car, truck, or SUV to get from their home to the park, and 14% reported utilizing water-based transportation (note, respondents could have checked more than one form of transportation). Sixty-nine percent of visitor groups spent up to 1 hour traveling from their home to the park. About half of visitor groups (47%) traveled up to 10 miles from their home to get to the park, while 20% of visitor groups traveled more than 50 miles from their home to get to the park.
- Sixty-four percent of visitor groups indicated that visiting Biscayne NP was the primary or sole purpose of their trip away from home. About one-quarter of visitor groups (26%) indicated that visiting Biscayne NP was one of several equally important destinations.
- The most important reasons for a visit to Biscayne NP included to spend time with friends and family (35% of visitor groups), go boating and/or fishing (16% of visitor groups), and view wildlife or natural scenery (13% of visitor groups),
- Twenty percent of visitor groups reported that viewing wildlife, natural features, scenery, wildflowers, or other aspects of natural scenery was their primary activity. Twenty percent of visitor groups reported that visiting a cultural or historical site was their primary activity. Ten percent of visitor groups reported having no primary activity.
- Twenty-one percent of visitor groups stayed overnight inside Biscayne NP or within the nearby area. The majority (62%) of visitor groups who stayed overnight stayed in lodging outside Biscayne NP. Nineteen percent of visitor groups visited another NPS site on their trip away from home. The most commonly reported NPS sites visited other than Biscayne NP were Everglades NP and Dry Tortugas NP.
- Ninety-nine percent of visitor groups indicated that no one in their group had a physical condition that made it difficult to access or participate in activities or services during their visit. Moreover, about half (53%) of visitor groups disagreed that Biscayne NP is not accessible to persons with physical disabilities.
- Forty-four percent of visitor groups reported going to the Visitor Center, 39% of visitor groups viewed outdoor exhibits, 36% of visitor groups viewed indoor exhibits, and 35% of visitor groups talked informally with a park ranger. About one-quarter (25%) of visitor groups reported that they learned something from park staff, programs, and/or exhibits about American history, nature, and/or culture.
- Only 1% of visitor groups reported that someone within their group purchased a package tour that included meals, lodging, and/or transportation while on their trip to Biscayne NP.
- Sixty-seven percent of visitor groups spent up to \$250 on expenditures inside the park and nearby area, excluding package tour expenses, and 15% spent \$251 to \$500. The expenditure sectors where visitor groups spent the largest proportions of money included hotels, motels, and resorts (19% of expenditures), gas/oil (17% of expenditures), and restaurants/bars (14% of expenditures).
- The majority (92%) of visitor groups (92%) reported that their visit to Biscayne NP met their expectations.

- The majority (96%) of visitor groups agreed that Biscayne NP is a safe place to visit. Sixty-eight percent of visitor groups agreed that vandalism and crime are not a problem in Biscayne NP.
- Sixty-six percent of visitor groups indicated that the natural resources in Biscayne NP are in pristine condition. Sixty-eight percent of visitor groups agreed that the historical and cultural features in Biscayne NP are well maintained/preserved. About one-quarter (26%) of visitor groups agreed that development of adjacent areas detracts from visitors' experiences at Biscayne NP. About half (50%) of visitor groups disagreed that Biscayne NP is too crowded.
- Only 3% of visitor groups agreed that the entrance fee to Biscayne NP is too high (it should be noted that while Biscayne NP does not have an overall entrance fee, county marinas that provide access to the protected waters do).
- Overall, visitor groups rated the quality of facilities, services, and recreation opportunities in Biscayne NP highly. Eighty-seven percent of visitor groups rated the overall quality as good or very good.

Acknowledgments

We thank the staff of Biscayne National Park and the National Park Service's Social Science Program for their assistance and support with this visitor use study.

List of Terms

NP:National Park

NPS:National Park Service

RSG:Resource Systems Group, Inc.

SEM:Socioeconomic Monitoring

SSP:Social Science Program

VSP:Visitor Services Project

Introduction

During 2015 through 2016, the National Park Service (NPS) Social Science Program (SSP) conducted pilot implementation of an in-park Socioeconomic Monitoring (SEM) visitor survey in several units of the National Park System. This report describes the results of pilot implementation of the SEM visitor survey at Biscayne National Park (NP) from July 1 through July 10, 2016. The study was conducted by RSG, under a contract with the NPS SSP.

Organization of Report

This report is organized into three sections

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

Section 2: **Results** This section provides summary information for each question in the questionnaire and includes a summary of visitor comments. The results are organized by topic areas, starting with visitor and visitor group characteristics, followed by results of questions related to pre-arrival, onsite, and post-trip stages of park visits.

Section 3: **Appendices**

Appendix 1. *Descriptive Statistics*. Descriptive statistics for those variables for which measures of central tendency can be computed.

Appendix 2. *The Questionnaire*. A copy of the questionnaire distributed to visitor groups.

Appendix 3. *The Thank You/Reminder Postcard*. A copy of the thank you/reminder postcard mailed to visitor groups.

Appendix 4. *The Replacement Mailing Cover Letter*. A copy of the replacement mailing cover letter mailed to visitor groups.

Appendix 5. *Detailed Sampling Procedures*. A detailed description of sampling locations and procedures.

Appendix 6. *Non-response Bias Analysis - Effects on Survey Responses due to State or Country of Residence*. Results of statistical tests of initial contact gender effects on key questions in the SEM survey instrument.

Visitor Comments Appendix (separate document). Visitor responses to open-ended questions. Bound separately due to appendix length.

Presentation of the Results

Results are represented in the form of graphs (see Figure 1), 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. The phrase **"CAUTION: Number of respondents less than 30 visitor groups"** is shown on the graph to indicate the results are unreliable due to low sample size.
 - * 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 (y-axis) describes the response categories.
4. Horizontal information (x-axis) shows the number or proportion of responses in each category.
5. The proportion of visitor groups/visitors who responded to each category.

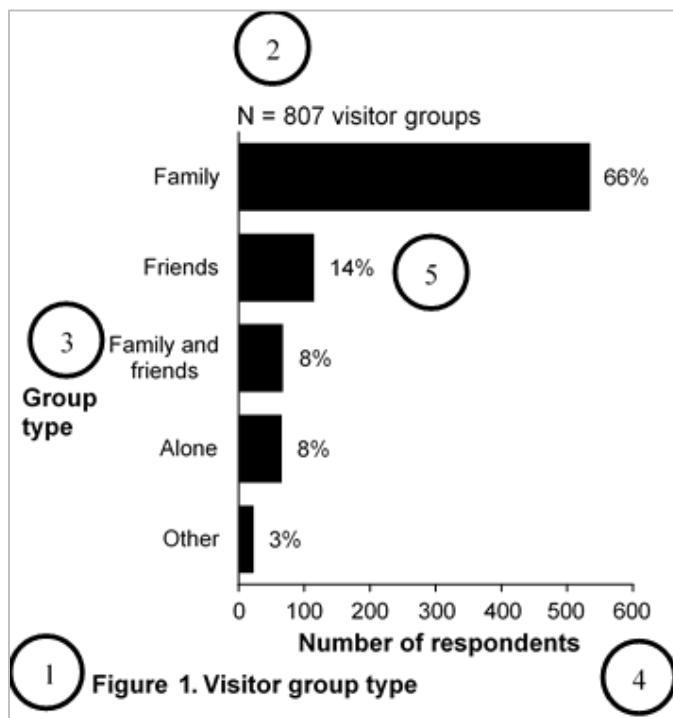


Figure 1. Example figure.

Methods

Survey Method

The SEM visitor survey was administered at Biscayne NP as a personally delivered self-administered mail-back survey, following the principles outlined in Don A. Dillman's book *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method* (2014). The survey method included three phases: 1) onsite distribution of a booklet-sized questionnaire, 2) a color-picture reminder postcard mailing, and 3) one replacement mailing of a booklet-sized questionnaire for those participants that had not yet returned a completed questionnaire. The study population included visitor groups with at least one group member 18 years of age or older in Biscayne NP during the study period. The target margin of error for summary statistics of no greater than +/- 5% (Fowler 1993) was used to establish the target sample size at 400 completed questionnaires.

Sampling Effort

The SEM visitor survey was administered at Biscayne NP from July 1 through July 10, 2016. The survey administration dates were selected to target peak use at the park. The peak use month was identified using the five-year average of monthly visitation data for Biscayne NP available from the NPS Public Use Statistics Office. Within the peak use month, the survey administration dates were selected to include both weekdays and weekend days.

The list of sampling locations was selected through an iterative, data-driven process. A list of potential sampling locations was compiled using three primary information sources. First, previously conducted visitor use studies and/or survey research were consulted for locations that had been sampled previously. Second, the sampling locations for collection of NPS Public Use Statistics Office visitation data were consulted for potential additional sampling locations. Third, the park's website and other popular trip planning resources for Biscayne NP were consulted to ensure that popular visitor locations were not inadvertently excluded from the list of potential sampling locations. The list of potential sampling locations was reduced through consideration of feasibility for survey administration and coverage of the range of user types at Biscayne National Park. The refined list of sampling locations was finalized through consultation with the NPS SSP and Biscayne NP staff. The SEM visitor survey was administered at three locations in the park and 3 locations outside of the park. Locations in the park included the Dante Fascell Visitor Center, Boca Chita Key, and Elliot Key. Outside the park, the survey was administered at three mainland marinas owned and operated by Miami-Dade County, where many visitors launch boats in order to access the waters: Homestead Bayfront Marina, Black Point Marina, and Matheson Hammock Marina.

The SEM visitor survey was administered for a select range of hours on each sampling day. The hours of survey administration at the Dante Fascell Visitor Center coincided with its hours of operation. The hours of survey administration at Boca Chita and Eliot Keys were dependent on park staff availability to transport the survey administrator to the keys on an NPS-staff boat. The hours of survey administration at the county marinas were selected to maximize sampling efficiency. The final sampling effort is presented in Table 1 and Table 2.

Table 1. Sampling effort: Locations in the park.

Date	Dante Fascell Visitor Center	Boca Chita Key	Elliot Key
Friday, July 1	9:00AM-5:00PM	11:00AM-11:30AM	—
Saturday, July 2	9:00AM-5:00PM	11:15AM-12:15PM	—
Sunday, July 3	9:00AM-5:00PM	11:45AM-12:00PM	11:00AM-11:15AM
Monday, July 4	9:00AM-5:00PM	11:45AM-12:00PM	10:45AM-11:00AM
Tuesday, July 5	9:00AM-5:00PM	—	—
Wednesday, July 6	9:00AM-5:00PM	—	—
Thursday, July 7	9:00AM-5:00PM	—	—
Friday, July 8	9:00AM-5:00PM	12:00PM-1:15PM	—
Saturday, July 9	9:00AM-5:00PM	2:15PM-3:45PM	4:00PM-4:15PM
Saturday, July 10	9:00AM-5:00PM	11:45PM-12:45PM	11:00AM-11:30AM

Table 2. Sampling effort: Locations outside of the park.

Date	Homestead Bayfront Marina	Black Point Marina	Matheson Hammock Marina
Friday, July 1	8:00AM-12:00 PM 12:15PM-4:15PM	8:00AM-12:00 PM 12:15PM-4:15PM	8:00AM-12:00 PM 12:15PM-4:15PM
Saturday, July 2	6:00AM-10:00AM 10:15AM-2:15PM	6:00AM-10:00AM 10:15AM-2:15PM	6:00AM-10:00AM 10:45AM-2:45PM
Sunday, July 3	6:00AM-2:00PM	6:00AM-1:15PM	6:00AM-2:00PM
Monday, July 4	6:00AM-2:00PM	6:00AM-2:00PM	6:00AM-2:00PM
Tuesday, July 5	8:00AM-4:00PM	8:00AM-4:00PM	8:00AM-4:00PM
Wednesday, July 6	8:00AM-4:00PM	8:00AM-4:00PM	8:00AM-4:00PM
Thursday, July 7	8:00AM-4:00PM	8:00AM-4:00PM	8:00AM-4:00PM
Friday, July 8	8:00AM-4:00PM	8:00AM-4:00PM	8:00AM-4:00PM
Saturday, July 9	6:00AM-2:00PM	6:00AM-2:00PM	6:00AM-2:00PM
Saturday, July 10	6:00AM-2:00PM	6:00AM-2:00PM	6:00AM-2:00PM

Questionnaire Design

The SEM questionnaire is a standardized survey instrument designed to gather system-wide information at NPS units about visitor and trip characteristics, visitor spending in gateway communities, visitor perceptions of park experiences, visitor attitudes toward park management, and

visitor satisfaction with park services and facilities. The questionnaire was developed through a collaborative process between the NPS SSP and RSG. All of the questions included in the SEM questionnaire were selected from the NPS Programmatic Information Collection Review Pool of Known Questions. The majority of the questions included in the SEM survey instrument ask visitors to choose answers from a list of response options, providing an open-ended option, where appropriate, to ensure that question prompts allowed for inclusive answers. A few questions were completely open-ended to collect unprompted responses from visitors in their own words. The questionnaire was reviewed and approved by the Office of Management and Budget (OMB), and correspondingly conforms to OMB standards and guidelines for questionnaire design. Biscayne NP staff were asked to review the SEM questionnaire to provide guidance on park-specific tailoring of question prompts to ensure consistency of the survey instrument with park policies, programs, services, and activities. The questionnaire was administered to visitors in English (Appendix 2).

Sampling Procedures

Mail-back survey packets were administered to visitor groups in Biscayne NP using onsite intercept methods (see Appendix 5 for detailed descriptions of how visitors were selected at each sample location). Each contacted visitor group was greeted, introduced to the purpose of the study, and asked to participate. If a visitor group agreed to participate, they were asked which member of the group (at least 18 years old) had the next birthday; the individual with the next birthday was asked to complete the questionnaire for the group. This was done in order to randomize selection of the individual within the group to complete the questionnaire.

Individuals who agreed to complete the questionnaire were asked to provide their name and mailing address. This information was used to send follow-up mailings according to Dillman's (2014) mail-back survey methods. Participating visitors were then administered a mail-back survey packet, which included a booklet-sized questionnaire placed inside of a pre-addressed envelope affixed with a U.S. first class postage stamp. Visitors were asked to complete the questionnaire after completing their trip to the park and to return the questionnaire by mail using the self-addressed postage-paid envelope provided. International visitors were asked to mail their completed questionnaires before leaving the country due to the U.S. first class postage affixed to the return envelope. Table 3 summarizes the survey effort by sampling location.

Two weeks after field survey administration concluded, all survey participants were sent a color-picture postcard (Appendix 3) thanking them for participating in the study and/or reminding them to complete and return the questionnaire (Table 4). Approximately two weeks after mailing the postcards, a replacement mail-back survey packet was sent to each individual who agreed to participate in the study but had not yet returned his or her questionnaire (Appendix 4). Two distinct replacement mail-back survey packets were sent, depending on whether the provided address was a U.S. address or an international address. U.S. addresses were sent a packet that included a pre-addressed return envelope affixed with a U.S. first class postage stamp. International addresses were sent a packet that included a pre-addressed return envelope printed with international business reply mail postage.

Table 3. Number of questionnaires distributed, by sampling location.

Sampling site	Sampling date										Total questionnaires distributed	
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	N	%
Dante Fascell Visitor Center	19	23	30	24	20	23	22	20	31	34	246	33%
Homestead Bayfront Marina	9	17	28	22	9	12	10	11	24	33	175	23%
Black Point Marina	8	14	13	15	7	8	7	9	22	15	118	16%
Matheson Hammock Marina	10	12	26	21	5	11	14	14	31	22	166	22%
Boca Chita Key	3	7	9	8	0	0	0	3	12	7	49	6%
Elliot Key	–	–	0	0	0	0	0	0	0	1	1	0%
All sites	49	73	106	90	41	54	53	57	120	112	755	100%

Table 4. Follow-up mailing distribution.

Mailing	Date	U.S.	International	Total
Postcards	7/25/2016	747	7	754
Replacement Mailing	8/8/2016	620	5	625

Sampling Results¹

During the sampling period, 1,128 visitor groups were contacted to participate in the survey. Of these groups, 755 agreed to participate in the study by accepting a mail-back survey packet (67% cooperation rate) (Table 3). Questionnaires were completed and returned by 248 visitor groups (Table 5), resulting in a completion rate of 33% among those visitor groups that agreed to participate in the study and an overall response rate of 22% for the study.

¹ Sampling results are reported using three metrics: cooperation rate, completion rate, and overall response rate. Cooperation rate is the proportion of onsite acceptances to total onsite contacts. Response rate is the proportion of completed survey questionnaires to total onsite contacts. Calculation of cooperation rate and response rate follow American Association for Public Opinion Research definitions. Completion rate is the proportion of completed survey questionnaires to onsite acceptances — completion rate is the metric in this study that is directly comparable to response rates reported in the Visitor Services Project (VSP) and is therefore included for reference. See Rookey et al. (2012) for a complete description of VSP response rate calculation.

Table 5. Number of completed questionnaires, by sampling location.

Sampling site	N	Percent
Dante Fascell Visitor Center	98	40%
Homestead Bayfront Marina	51	21%
Black Point Marina	27	11%
Matheson Hammock Marina	62	25%
Boca Chita	10	4%
Elliot Key	0	0%
Total	248	100%

Data Entry and Cleaning

Data from returned questionnaires were entered into a database using Teleform, an optical recognition data coding software application. Each questionnaire was scanned and loaded into Teleform, which automatically coded responses and highlighted potential coding errors. Potential coding errors were reviewed and corrected by research staff. Corrected data were subjected to additional cleaning and proofing using Microsoft Excel and SPSS statistical software. Data cleaning and proofing included identification and correction of invalid values, and complete manual verification of data entry for a randomly selected subset (n=40) of the completed questionnaires for quality assurance.

Non-Response Bias

Non-response bias is the bias that results when respondents differ in meaningful ways from non-respondents. Non-response bias affects the ability to generalize survey results, to some degree and in some ways, from the sample to the study's target population (Salant and Dillman, 1994; Dillman, 2014; Stoop, 2004; Fillion, 1976; Dey, 1997). If non-respondents are found to differ from respondents in meaningful ways, care should be taken when interpreting survey responses, as they may over-represent some segments of the target population to some degree, and may under-represent other segments of the population to some degree.

To check for non-response bias and help inform the interpretation of results that may be affected by non-response bias, this study used answers to five, pre-selected non-response bias questions and one observable characteristic of the contacted visitor to compare respondents with non-respondents. After being contacted to participate in the survey, an interview, lasting approximately two minutes, was conducted with all contacted visitor groups regardless of whether or not they agreed to participate in the study. The interview included the following five questions used for evaluation of non-response bias:

1. How many adults, 18 years and older, are in your group?
2. How many children (under 18 years) are in your group?

3. What type of group are you with? Friends, family, friends and family, or some other type of group?
4. How long is this trip to Biscayne NP in total, from beginning to end?
5. What is your state of residence (if you live in the U.S.) or country of residence (if do not live in the U.S.)?

In addition to the five, pre-selected non-response bias questions, the gender of the person in the group who was first contacted by the survey administrator was observed and recorded.

An effort was made to obtain answers to the non-response bias questions from all visitor groups contacted, including those that declined to participate in the survey. Responses were obtained from most of the participating visitor groups and from many, but not all, of those that declined to participate in the study. When the survey administrator was unable to obtain responses to the non-response bias questions, it was because the approached contact refused all further contact from the administrator after the initial refusal, usually with no reason provided. These instances were defined as “hard refusals”.

Ideally, responses or observed estimates for non-response bias variables should be collected from all respondents and non-respondents. The collection of information from all contacted individuals provides the best comparison of characteristics between the respondent and non-respondent populations. More practically, a majority of responses or observed estimates must be present to adequately characterize both the respondent and non-respondent populations. In this study, 70% was identified as the minimum percentage of valid values for non-response variables needed for both respondent and non-respondent populations in order to adequately characterize the populations on a given non-response variable.² All non-response variables met the minimum for 70% valid values among respondents and/or non-respondents (Table 6). Correspondingly, all variables were used for non-response bias analysis.

Chi-square tests of independence were used to test for differences between respondents and non-respondents. Values for the number of adults in the visitor group were collapsed into the following four categories: groups with one adult, groups with two adults, groups with three or four adults, and groups with five or more adults. Values for the number of children in the visitor group were collapsed into three categories: no children, one child, and two or more children. Values for visit length were collapsed into four categories: one to six hours, seven to 16 hours, and 24 hours or more. Responses for state or country of residence were collapsed into three categories: in state visitor, out of state visitor, and international visitor.

²The Office of Management and Budget Standards and Guidelines for Statistics Surveys (2006) suggest that any survey item with at least 70% non-missing data can be presumed to reflect the entire data set (i.e., for such items, any differences between the subjects with data and those without data are negligible).

Table 6. Number and percentage of respondents and non-respondents with valid values for non-response variables.

Variable	Respondents (N = 248)		Non-Respondents (N = 674)	
	Valid N	Valid Percent	Valid N	Valid Percent
Initial contact gender	248	100%	674	100%
Number of adults	248	100%	621	92%
Number of children	248	100%	674	100%
Group type	248	100%	674	100%
Visit length	243	98%	612	91%
State or country of residence	246	99%	619	92%

A Bonferroni correction was applied to account for the fact that six simultaneous statistical tests were conducted with the same data set. The Bonferroni correction minimizes the likelihood of concluding from the results of the statistical tests that there are differences between respondents and non-respondents, when there actually are no differences (i.e., minimizes the probability of making a Type I error). With the Bonferroni correction applied in this analysis, statistical test results with p-values of less than 0.008 are assumed to be statistically significant.

Results of the chi-square tests in Table 7 through Table 11 suggest that respondents and non-respondents did not differ significantly, with respect to initial contact gender ($p = 0.341$), number of adults in their groups ($p = 0.324$), number of children in their group ($p = 0.648$), group type ($p = 0.980$), or visit length ($p = 0.009$). These results provide no compelling evidence of non-response bias related to the initial contact gender, the number of adults in visitor groups, number of children in visitor groups, visitor group type, or visit length within the survey sample.

Table 7. Initial contact gender comparison between respondents and non-respondents, p-value (Chi-square) ¹ = 0.341.

Response	Respondents (N = 248)		Non-Respondents (N = 657)	
	N	Percent	N	Percent
Female	178	72%	492	75%
Male	70	28%	165	25%

¹ $\alpha = 0.05$, $p \leq 0.008$ indicates significant result following Bonferroni correction to account for multiple non-response bias statistical tests.

Table 8. Number of adult group members comparison between respondents and non-respondents, p-value (Chi-square)¹ = 0.324.

Response	Respondents (N = 248)		Non-Respondents (N = 621)	
	N	Percent	N	Percent
1 Adult	30	12%	83	13%
2 Adults	109	44%	266	43%
3 or 4 Adults	82	33%	179	29%
5 or more Adults	27	11%	93	15%

¹ $\alpha = 0.05$, $p \leq 0.008$ indicates significant result following Bonferroni correction to account for multiple non-response bias statistical tests.

Table 9. Number of children in group comparison between respondents and non-respondents, p-value (Chi-square)¹ = 0.648.

Response	Respondents (N = 248)		Non-Respondents (N = 621)	
	N	Percent	N	Percent
No Children	146	59%	348	56%
1 Child	35	14%	102	16%
2 or more children	67	27%	171	28%

¹ $\alpha = 0.05$, $p \leq 0.008$ indicates significant result following Bonferroni correction to account for multiple non-response bias statistical tests.

Table 10. Group type comparison between respondents and non-respondents, p-value (Chi-square)¹ = 0.980.

Response	Respondents (N = 248)		Non-Respondents (N = 623)	
	N	Percent	N	Percent
Alone	18	7%	42	7%
Family	152	61%	377	61%
Friends	34	14%	90	14%
Family and friends	44	18%	114	18%

¹ $\alpha = 0.05$, $p \leq 0.008$ indicates significant result following Bonferroni correction to account for multiple non-response bias statistical tests.

Table 11. Visit length comparison between respondents and non-respondents, p-value (Chi-square) ¹ = 0.009.

Response	Respondents (N = 248)		Non-Respondents (N = 657)	
	N	Percent	N	Percent
1 to 6 hours	201	83%	457	75%
7 to 16 hours	27	11%	122	20%
24 hours or more	15	6%	33	5%

¹ $\alpha = 0.05$, $p \leq 0.008$ indicates significant result following Bonferroni correction to account for multiple non-response bias statistical tests.

The results of the chi-square test in Table 12 suggest respondents and non-respondents differed significantly, with respect to state or country of residence ($p < 0.001$); thus, there is evidence of potential non-response bias related to the state or country of residence within the survey's sample. Specifically, groups who were visiting from in state were less likely to respond to the survey than those visiting from out of state or internationally.

The potential impact of non-response bias, with respect to state or country of residence, on the results of the survey were further explored (Appendix 6). In particular, statistical tests of state or country of residence effects on key questions in the SEM survey instrument were performed, with differences found for 14 of 66 questions ($\alpha = 0.05$, $p \leq 0.0008$) indicates significant result following Bonferroni adjustment). Where statistical differences were found between respondent subgroups, results by subgroup are reported in Appendix 6.

Table 12. State or country of residence comparison between respondents and non-respondents, p-value (Chi-square) ¹ <0.001.

Response	Respondents (N = 246)		Non-Respondents (N = 619)	
	N	%	N	%
In State Visitor	195	79%	576	93%
Out of State Visitor	47	19%	36	6%
International Visitor	4	2%	7	1%

¹ $\alpha = 0.05$, $p \leq 0.008$ indicates significant result following Bonferroni adjustment to account for multiple non-response bias statistical tests. .

In summary, no significant differences were found between respondents and non-respondents, with respect to initial contact gender, number of adults in group, number of children in group, visitor group type, or length of visit. Non-response bias analysis results suggest that, for a small number of questions in the survey, the survey results may over-represent opinions, evaluations, or behaviors

from visitor groups who were visiting from out of state. Effects of state or country of residence on results were analyzed further, and the results of this analysis are reported in Appendix 6.

Data Analysis

SPSS statistical software was used for data analysis. For all questions where pre-defined response options were provided, frequencies are reported. For all questions with open-ended response options, verbatim visitor comments are reported in the stand-alone *Visitor Comments Appendix*. For the majority of questions with open-ended response options, thematic codes were applied to the responses to categorize the data. The categorized data are reported in tabular format providing the frequency of occurrence for each theme. In cases where the number of open-ended responses is low, the data are reported in summary bullets rather than in tabular format of categorical results. Descriptive statistics for those variables for which measures of central tendency can be computed are presented in Appendix 1.

Limitations

This study has limitations that should be considered when interpreting the results.

1. The survey was self-administered. Respondents completed the questionnaire after an unknown amount of time after the visit, which may have affected recall to some degree. To the extent respondents' recall was affected, it is possible some of their responses may not fully reflect actual behavior.
2. The data reflect visitor use patterns as collected during the study period of July 1 through July 10, 2016. The results present a 'snapshot-in-time' and do not necessarily apply to visitor groups during other times of the year. Namely, per the experience of park staff, local Miami-Dade County and south Florida residents constitute the majority of visitation to the park in the summer months, compared to increased visitation from national and international visitors during the winter months.
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. Sample size may vary for some questions, due to item non-response (i.e., one or more question left blank by a respondent). Therefore, refer to both the percentage and sample values when interpreting the results.
5. Results of statistical tests comparing respondents to non-respondents (i.e., non-response bias analysis) suggest that, for select questions, the survey results may over-represent to some degree opinions, evaluations, and behaviors from out of state visitors. Effects of state or country of residence on results for a select set of key questions from the survey were analyzed, and the results of this analysis are reported in Appendix 6.

Special Conditions

The weather during the survey period was generally sunny, hot, and humid with high temperatures typically in the low 90s. Skies were clear except for a series of passing thunderstorms on July 1

through July 3. Survey administrators also reported a large number of mosquitos and/or other biting flies to be present during survey administration.

In order to access Boca Chita Key and Elliot Key for sampling, survey administrators were transported by NPS staff using NPS watercraft. NPS staff were unable to transport survey administrators to Elliot Key on July 1 due to severe weather, and again on July 2 due to a lack of staff availability.

Results

Group and Visitor Characteristics

Visitor group size

Question 1

Including yourself, how many people were in your personal group during your visit to Biscayne NP on the day you were contacted for this survey?

Results (Figure 2)

- 34% of visitor groups consisted of two members.
- 60% of visitor groups consisted of three or more members.

See Appendix 1 for more details.

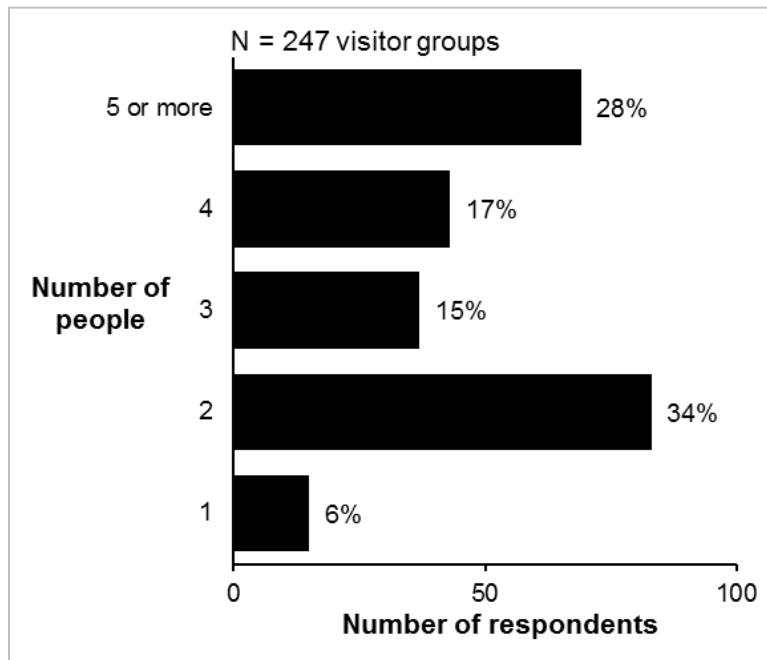


Figure 2. Visitor group size.

Number of adults within group

Question 1

Including yourself, how many people were in your personal group during your visit to Biscayne NP on the day you were contacted for this survey?

Number of adults (18 years and older).

Results (Figure 3)

- 47% of visitor groups consisted of two adults.
- 41% of groups consisted of three or more adults.

See Appendix 1 for more details.

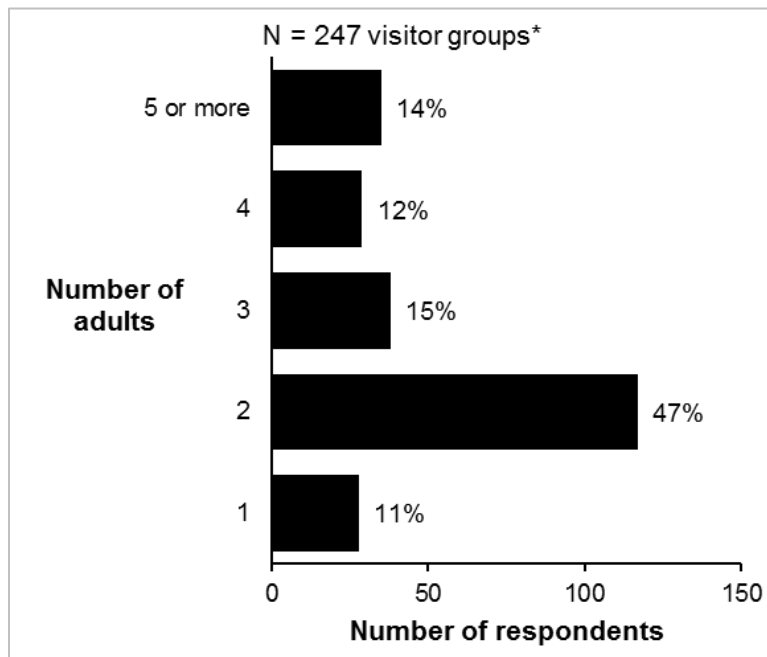


Figure 3. Number of adults within group.

Number of children within group

Question 1

Including yourself, how many people were in your personal group during your visit to Biscayne NP on the day you were contacted for this survey?

Number of children (under 18 years).

Results (Figure 4)

- 57% of visitor groups did not have children.
- Of visitor groups that had children, 37% consisted of two children.
- Of visitor groups that had children, 35% consisted of only one child.

See Appendix 1 for more details.

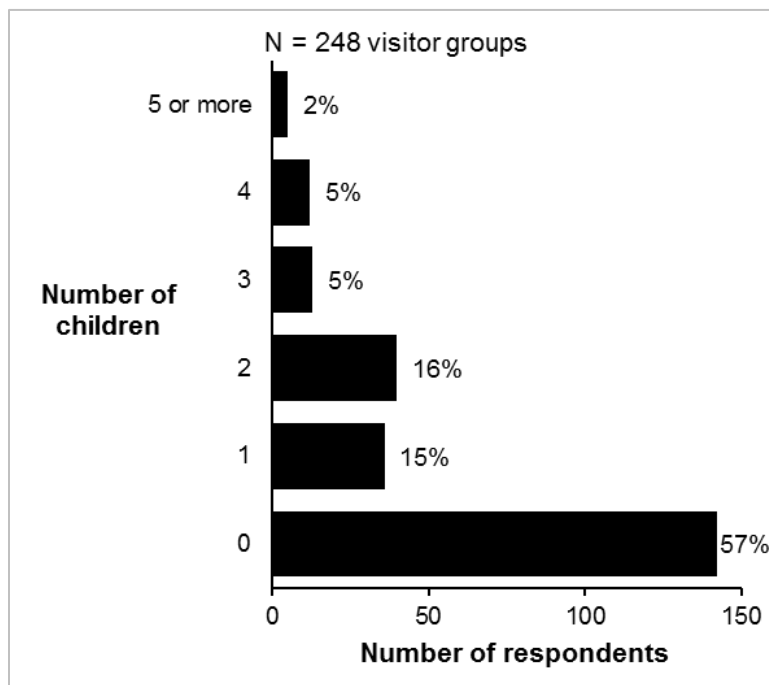


Figure 4. Number of children within group.

Visitor group type

Question 2

What type of group were you with, during your visit to Biscayne NP on the day you were contacted for this survey?

Results (Figure 5)

- 56% of visitor groups were made up of family.
- 19% of visitors were alone.
- Of those groups who responded “Other” (2%), group types included:
 - “Documentary Crew”
 - “Camp; YMCA of South Florida”

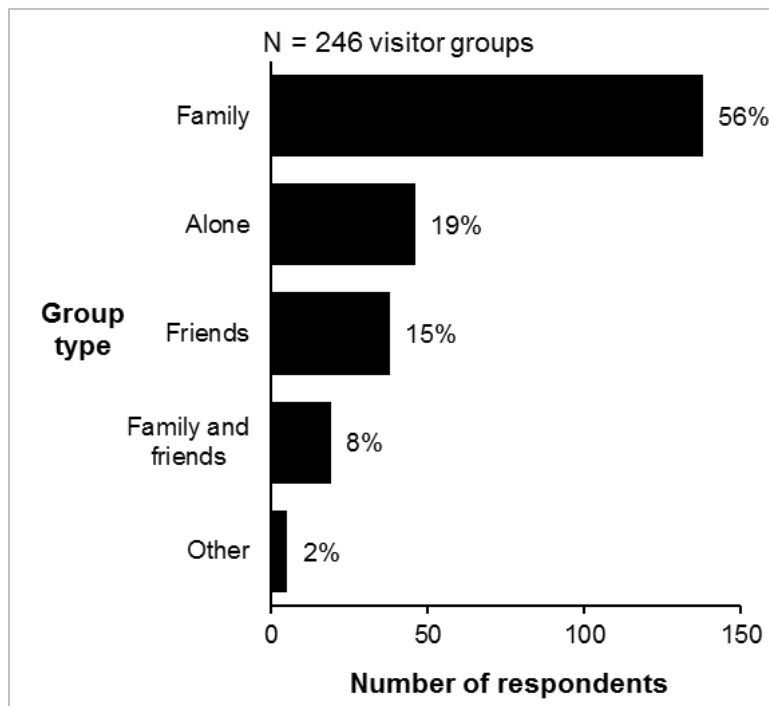


Figure 5. Visitor group type.

Visitor age

Question 33

For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide your current age.

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

Results (Figure 6)

- Visitor ages ranged from less than one year old to 92 years old.
- 7% of visitor were 65 years old or older.
- 15% of visitors were 55 to 64 years old.
- 33% of visitor were 35 to 54 years old.
- 23% of visitors were 18 to 34 years old.
- 22% of visitors were under 18 years old.

See Appendix 1 for more details.

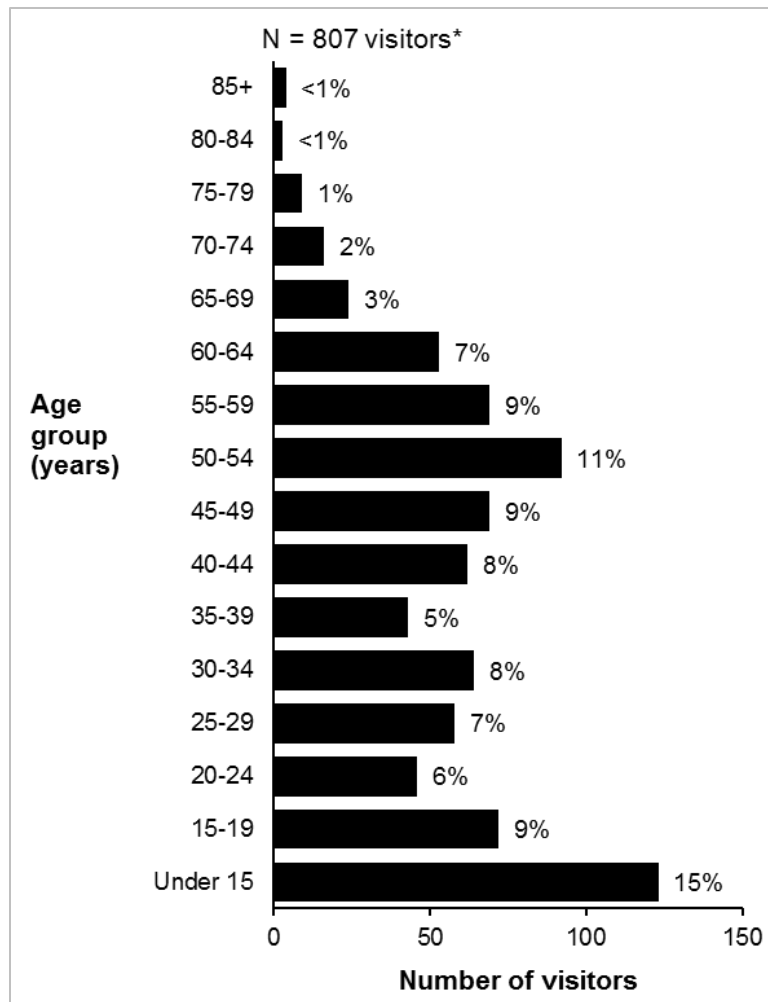


Figure 6. Visitor age.

Visitor gender

Question 34

For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide your gender.

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

Results (Figure 7)

- 57% of visitors were male.
- 43% of visitors were female.

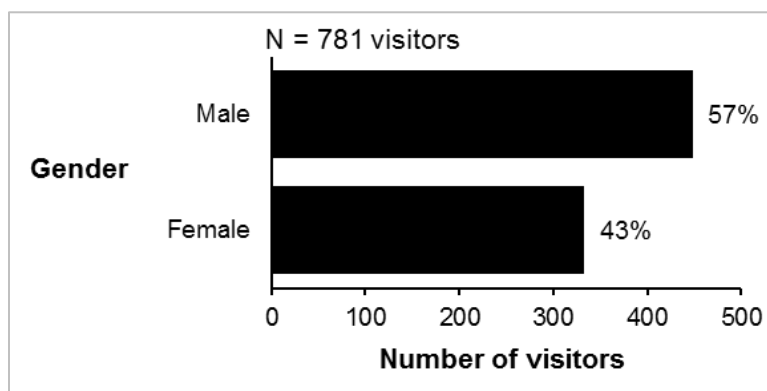


Figure 7. Visitor gender.

Visitor ethnicity

Question 34

For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide your ethnicity.

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

Results (Figure 8)

- A slight majority (52%) of visitors identified as Hispanic or Latino.

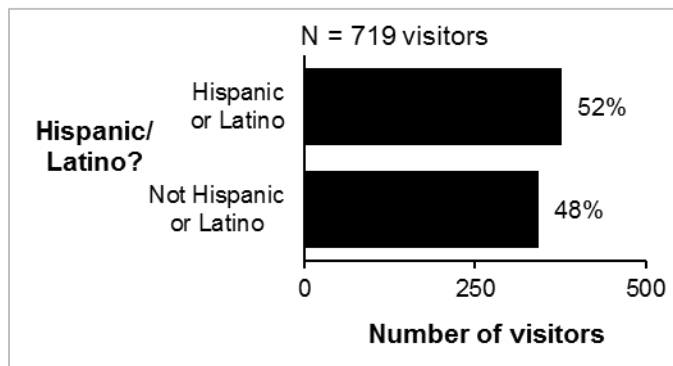


Figure 8. Visitor ethnicity.

Visitor race

Question 35

For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide your race.

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

Results (Figure 9)

- 95% of visitors were white.
- Very few visitors were Asian (3%), American Indian or Alaska Native (<1%), black or African American (2%), or Native Hawaiian or other Pacific Islander (<1%).

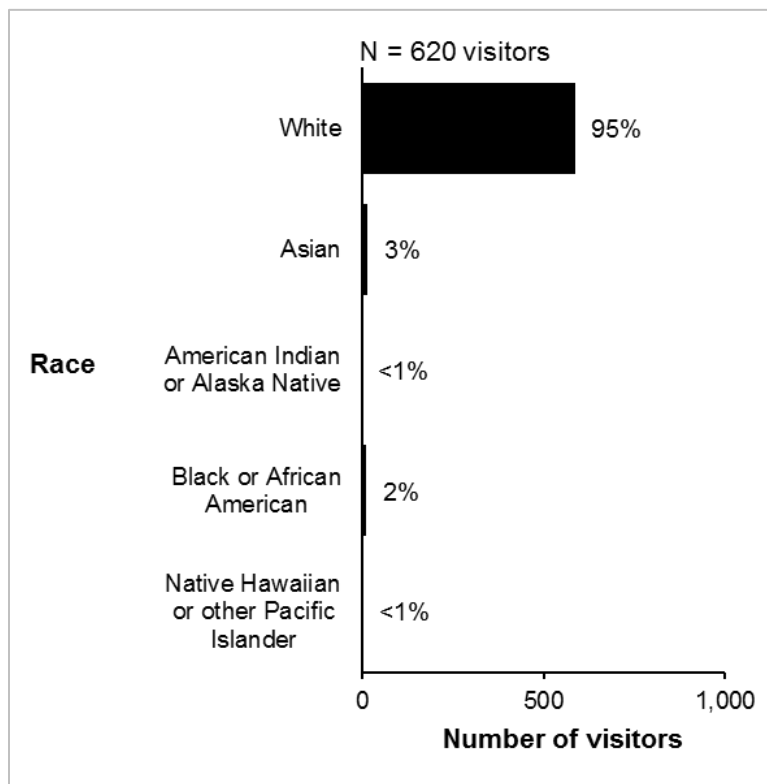


Figure 9. Visitor race.

Visitor speaking language

Question 39

When visiting an area such as Biscayne NP, what language do you personally prefer to use for speaking?

Results (Figure 10)

- 89% of visitor groups reported English as their preferred language for speaking.
- 10% of visitor groups reported Spanish as their preferred language for speaking.
- Of those who responded “Other” (1%) languages specified included:
 - Chinese
 - German
 - Portuguese

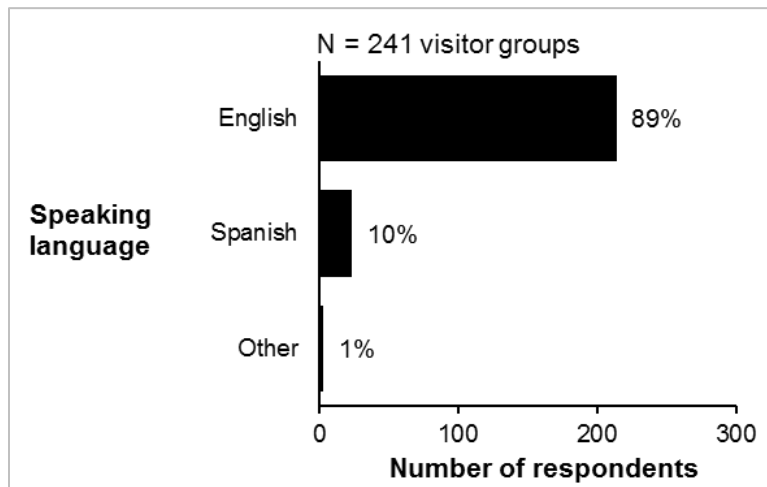


Figure 10. Preferred speaking language.

Visitor reading language

Question 39

When visiting an area such as Biscayne NP, what language do you personally prefer to use for reading?

Results (Figure 11)

- 92% of visitor groups reported English as their preferred language for reading.
- 7% of visitor groups reported Spanish as their preferred language for reading.
- Of those who responded “Other” (<1%) languages specified included:
 - Chinese
 - German
 - Portuguese

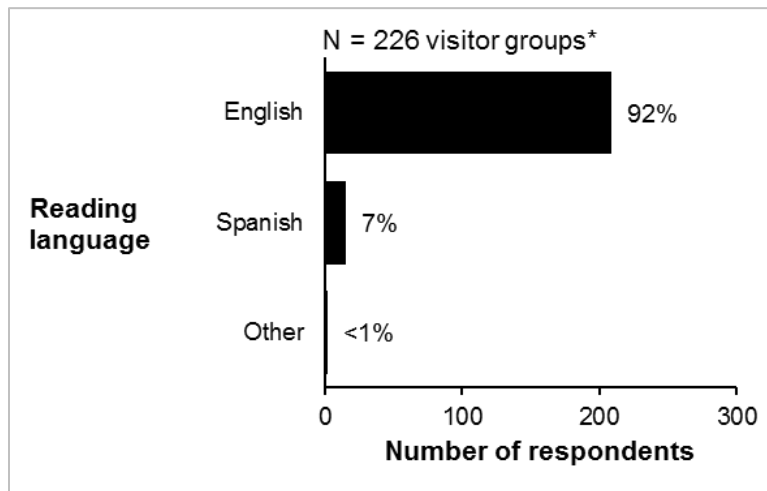


Figure 11. Preferred reading language.

U.S. visitors' state of residence

Question 33

For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide your U.S. ZIP code.

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

Results (Table 13 and Figure 12)

- U.S. visitors came from 23 states and comprised 96% of total visitation to the park during the survey period.
- 77% of U.S. visitors came from Florida.
- Smaller proportions came from other U.S. states.

Table 13. United States visitors by state of residence.

State	Number of visitors	Percent of U.S. visitors N = 702 visitors*	Percent of all visitors N = 728 visitors
Florida	541	77	74
Georgia	19	3	3
Texas	14	2	2
New Jersey	12	2	2
Pennsylvania	12	2	2
Alabama	9	1	1
Kentucky	9	1	1
Missouri	8	1	1
North Carolina	8	1	1
South Carolina	8	1	1
Illinois	7	<1	<1
Louisiana	6	<1	<1
California	5	<1	<1
Colorado	5	<1	<1
Virginia	5	<1	<1
Massachusetts	4	<1	<1
Minnesota	3	<1	<1

Table 13 (continued). United States visitors by state of residence.

State	Number of visitors	Percent of U.S. visitors N = 702 visitors*	Percent of all visitors N = 728 visitors
Tennessee	3	<1	<1
15 other states	24	3	3

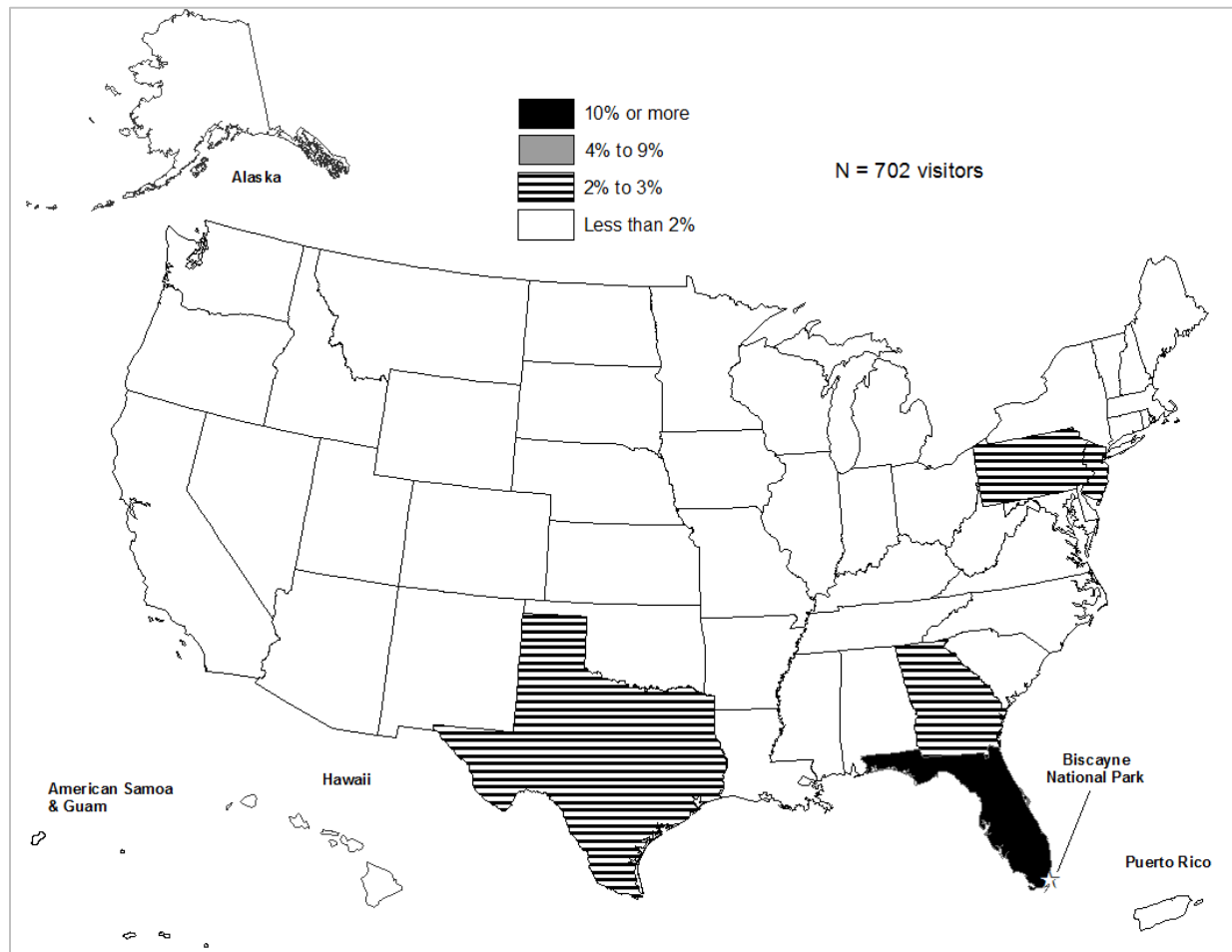


Figure 12. Proportion of U.S. visitors by state of residence.

International visitors' country of residence

Question 33

For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide your country of residence, if other than U.S.

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

Results (Table 14)

- International visitors were from eight countries and comprised 3% of total visitation to the park during the survey period.
- 23% of international visitors came from Germany.
- Smaller proportions came from other countries.

Table 14. International visitors by country of residence.

Country	Number of visitors	Percent of international visitors N = 26 visitors*	Percent of all visitors N = 728 visitors
Germany	6	23	<1
Canada	4	15	<1
Scotland	4	15	<1
Venezuela	4	15	<1
7 other countries	8	31	1

Live in nearby area

Question 26

Do you live within the nearby area (within the shaded area shown on the map)?

See Figure 14 on the next page or Appendix 2 for map.

Results (Figure 13)

- 78% of visitor groups lived within the shaded area on the map (i.e., nearby area).
- 16% of visitor groups did not live within the shaded area (i.e., nearby area).

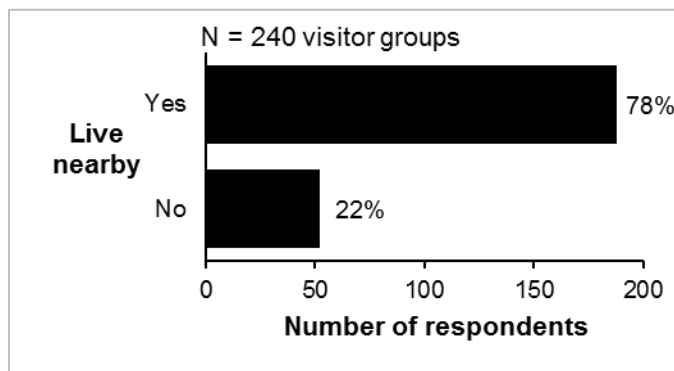


Figure 13. Visitors who live in nearby area.

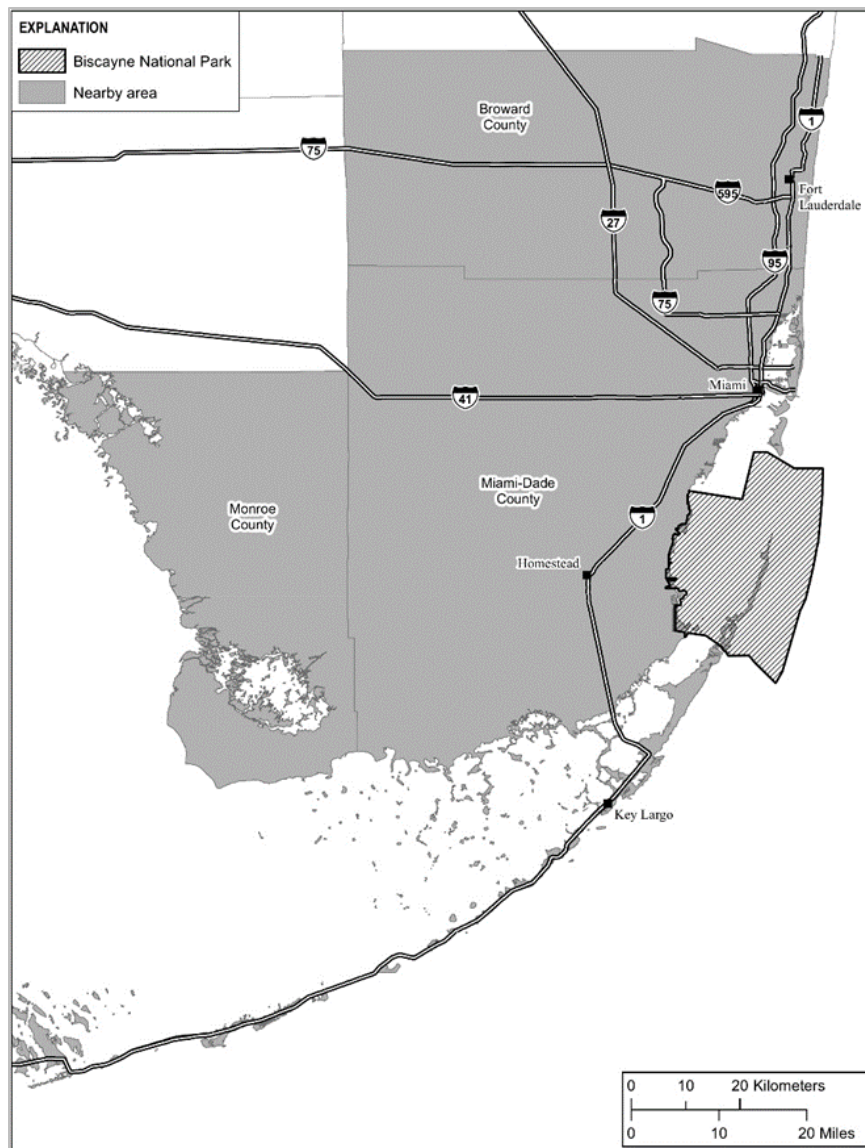


Figure 14. Map of Biscayne NP and nearby area.

Visitor level of education

Question 36

For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, what is the highest level of formal education completed by each member of your group?

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

Results (Figure 15)

- 31% of visitors' highest level of formal education completed was high school graduate or GED.
- 12% of visitors' highest level of formal education completed was college, business, or trade school.
- 15% of visitors' highest level of formal education completed was a master's, doctoral, or professional degree.

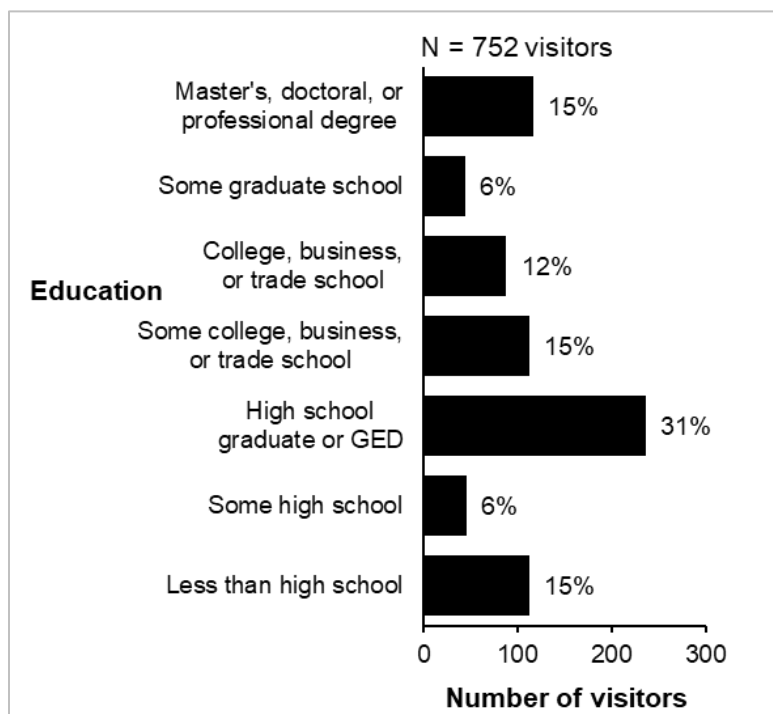


Figure 15. Visitor level of education.

Household income

Question 37

Which category best represents your annual household income?

Results (Figure 16)

- 20% of visitor groups had an annual household income between \$35,000 and \$49,999.
- 19% of visitor groups had an annual household income between \$50,000 and \$74,999.
- 17% of visitor groups had an annual household income less than \$24,999.

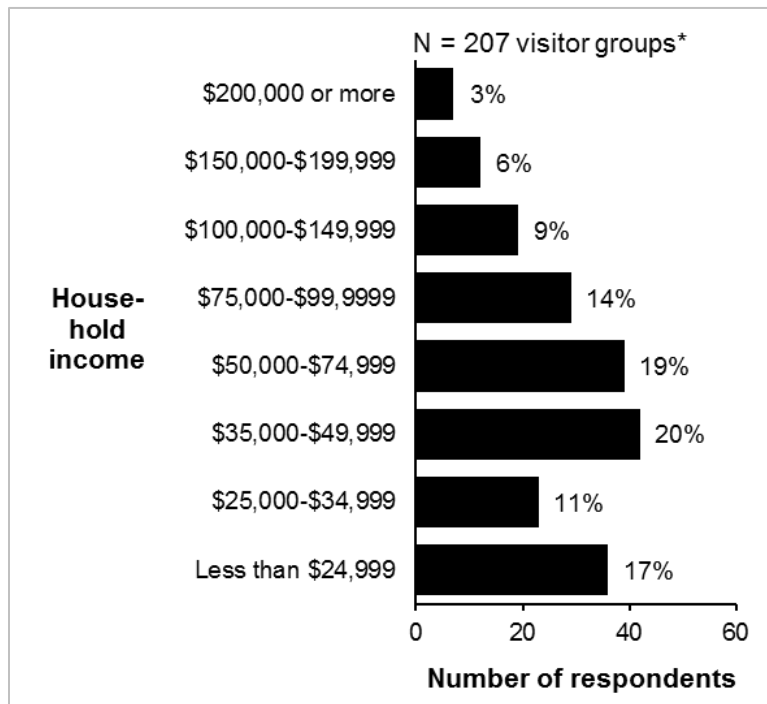


Figure 16. Annual household income.

Household size

Question 37

Including yourself, how many people are in your household?

Results (Figure 17)

- 32% of visitor groups had a household of two people.
- 24% of visitor groups had a household of three people.
- 39% of visitor groups had a household of four or more people.

See Appendix 1 for more details.

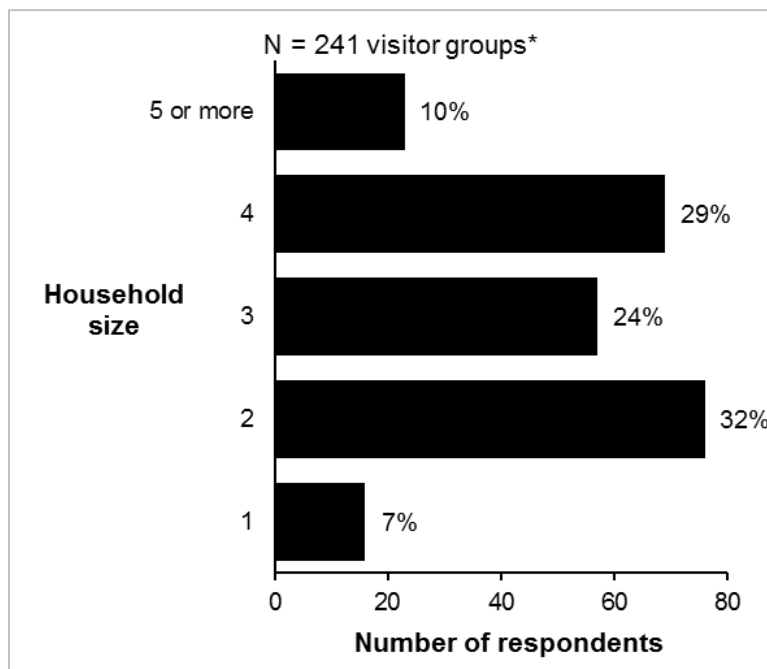


Figure 17. Size of household.

Frequency of visits to park

Question 33

For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide the number of visits to Biscayne NP in the last 12 months, including this trip.

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

Results (Figure 18).

- 44% of visitors visited the park five or more times in the last 12 months.
- 33% of visitors visited the park only once in the last 12 months.

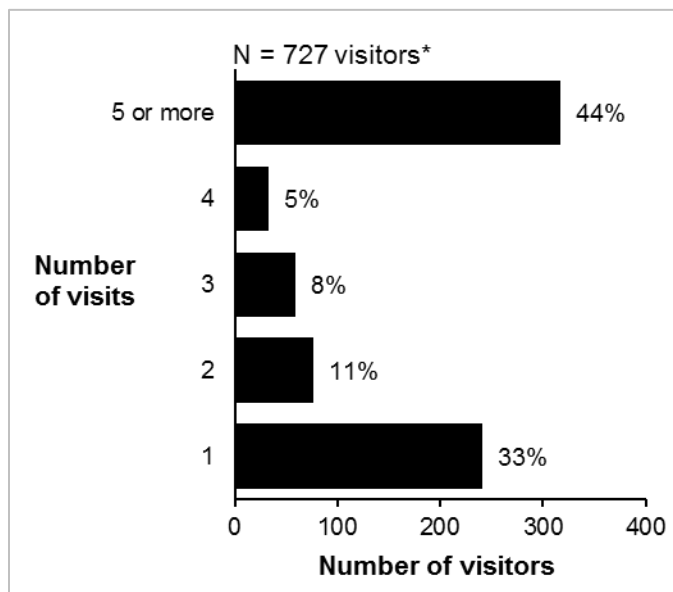


Figure 18. Park visits in last 12 months.

Frequency of visits to other National Park Service sites

Question 33

For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide the number of visits to other NPS sites in the last 12 months.

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

Results (Figure 19)

- 30% of visitors did not visit any other NPS sites in the last 12 months.
- 24% of visitors visited other NPS sites five or more times in the last 12 months.

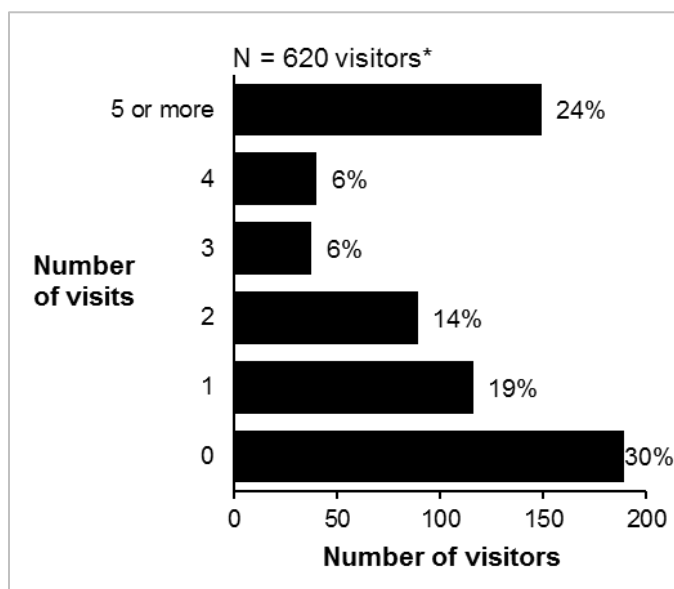


Figure 19. Other NPS site visits in last 12 months.

Pre-Trip Planning and Experience

Information sources prior to visit

Question 7

Prior to this trip, how did you obtain information about Biscayne NP?

Results (Figure 20 and Figure 21)

- 87% of visitor groups obtained some form of information prior to their visit.
- As shown in Figure 21, among those visitor groups who obtained information about Biscayne NP prior to their visit, the most common information sources were:
 - 55% Previous visits
 - 21% Park website
 - 21% Friends/relatives/word of mouth
 - 10% Maps/brochures
- “Other websites” used by visitor groups (3%) included:
 - “Google”
 - “Trip Advisor”
 - “YouTube”
- “Other information sources” used by visitor groups (8%) included:
 - “Local knowledge”
 - “Lets Move! Outside Initiative”

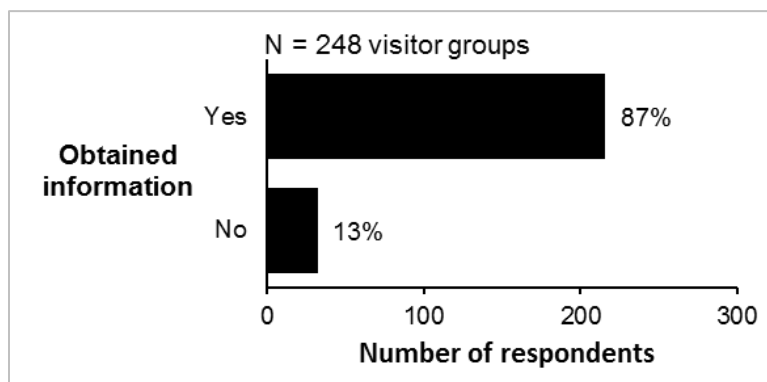


Figure 20. Visitor groups that obtained information about the park prior to visit.

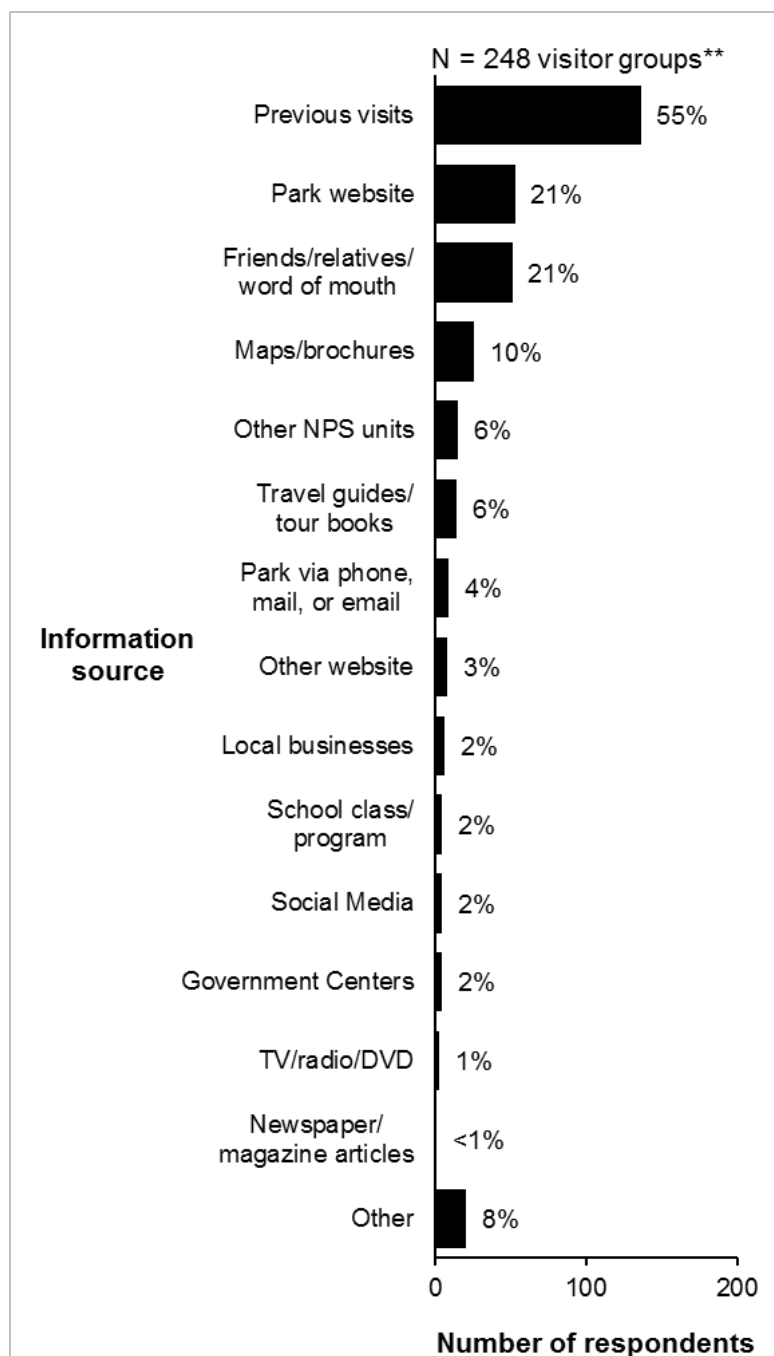


Figure 21. Information sources used prior to trip.

Information needed

Question 8

Did you have the information about Biscayne NP you needed on this trip?

Results (Figure 22)

- 96% of visitor groups had the information they needed prior to their visit.

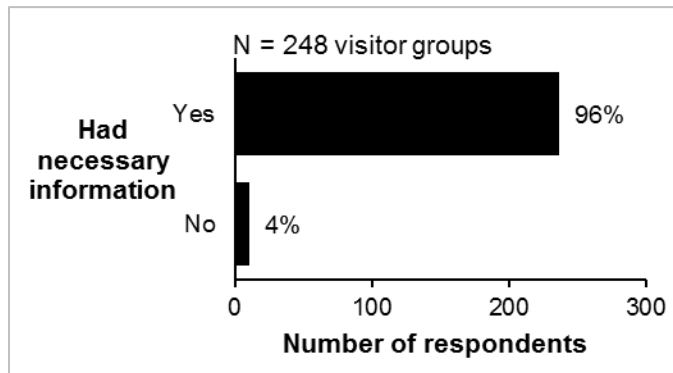


Figure 22. Had information needed on this trip.

Question 8

If NO, please specify the information you needed but didn't have on this trip (open-ended).

Results (Table 15)

- Of those groups who did not have the information they needed, types of information needed included “boat rental information,” “general information,” “road signs,” “scuba diving information,” and “wayfinding information.”

Table 15. Information needed. N = 5 comments. Some visitor groups may have made more than one comment.

Information	Frequency of times mentioned
Boat rental information	1
General information	1
Road signs	1
Scuba diving information	1
Wayfinding information	1

Forms of transportation

Question 3

Please indicate all of the forms of transportation you personally used to travel from your home to Biscayne NP on this trip.

Results (Figure 23)

- 98% of visitor groups used a car, truck or SUV.
- Of those who responded “Other” (<1%), forms of transportation specified included:
 - “Motorcycle”

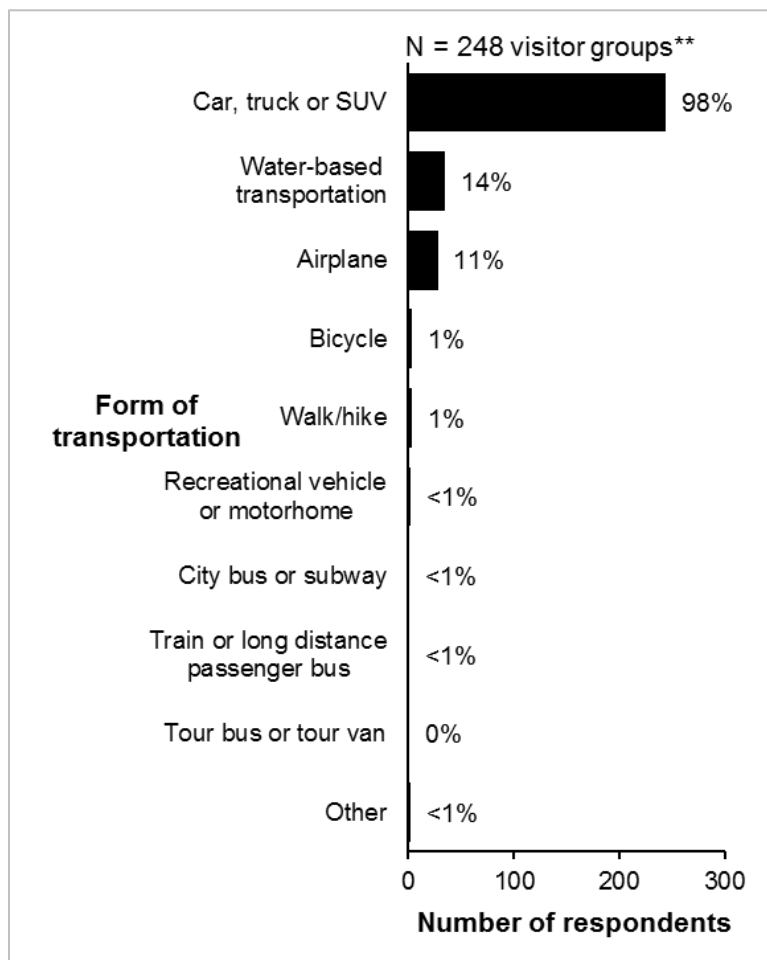


Figure 23. Transportation used to travel to park.

Number of people in vehicle

Question 3

Please indicate the number of people in the car, truck, or SUV, including you.

Results (Figure 24)

- 28% of visitor groups traveled to the park in a vehicle with two people.
- 24% of visitor groups traveled in a vehicle with four people.

See Appendix 1 for more details.

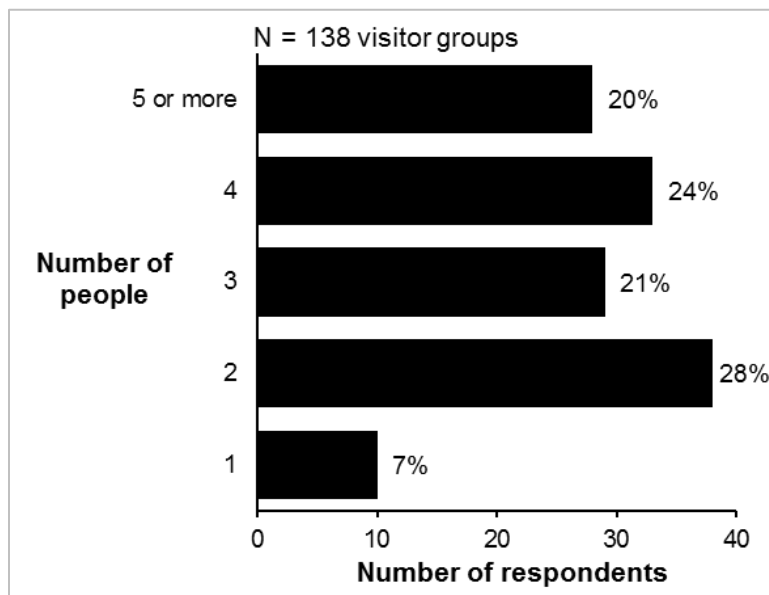


Figure 24. Number of passengers in car, truck or SUV.

Water-based transportation

Question 3

Please indicate all of the forms of water-based transportation you personally used to travel from your home to Biscayne NP on this trip.

Results (Figure 25)

- 69% of visitor groups who traveled by water traveled in a personal boat.
- Of those who responded “Other” (20%), forms of transportation specified included:
 - Charter Boat
 - Sailboat
 - Kayak

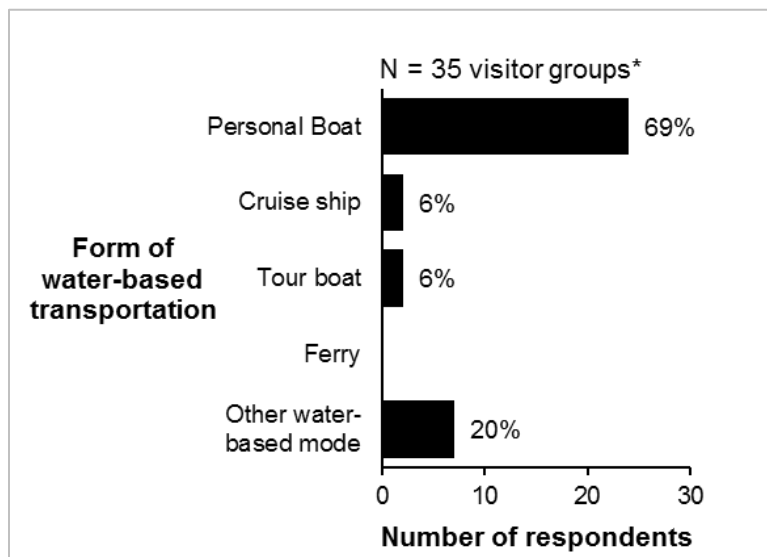


Figure 25. Water-based transportation used to travel to park.

Hours traveled to park

Question 4

Approximately how many hours from home did you travel one-way to get to Biscayne NP on this trip?

Results (Figure 26)

- 69% of visitor groups traveled up to one hour one-way to get to Biscayne NP.
- 19% of visitor groups traveled five or more hours one-way.

See Appendix 1 for more details.

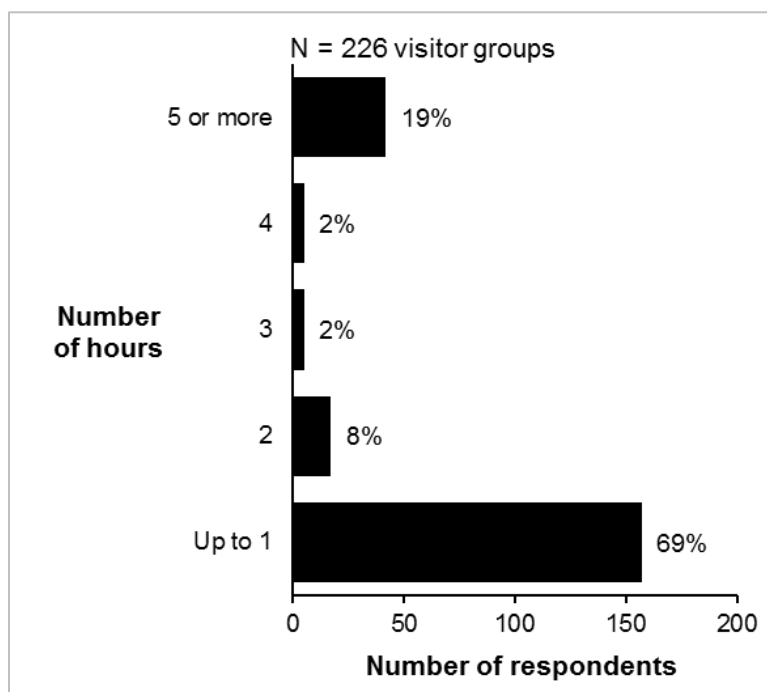


Figure 26. Hours traveled one-way to park.

Miles traveled to park

Question 4

Approximately how many miles from home did you travel one-way to get to Biscayne NP on this trip?

Results (Figure 27)

- 47% of visitor groups traveled up to 10 miles one-way to Biscayne NP.
- 20% of visitor groups traveled 51 or more miles one-way.

See Appendix 1 for more details.

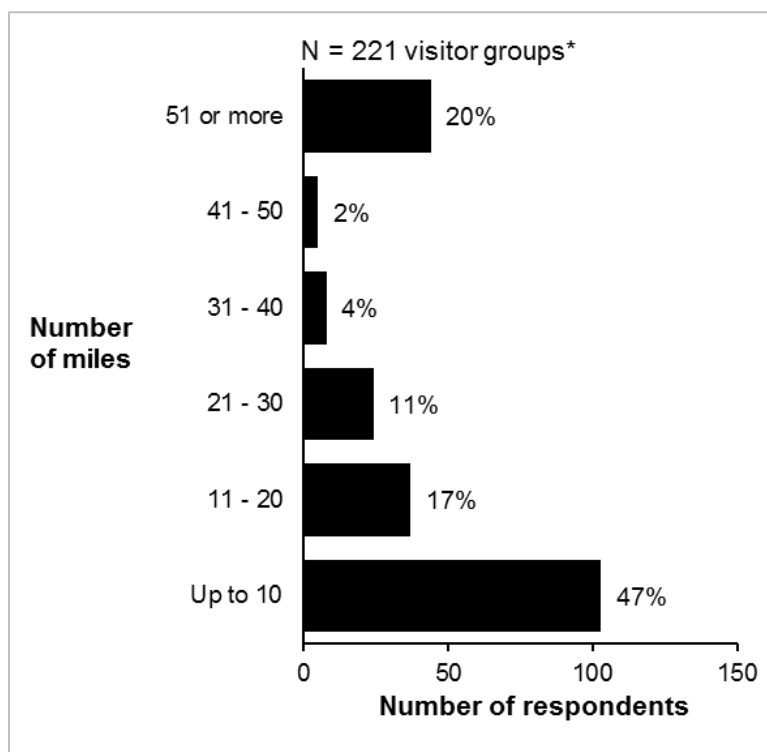


Figure 27. Miles traveled one-way to park.

Role of park visit in trip away from home

Question 27

Was this trip to Biscayne NP your primary or sole purpose for your trip away from home, one of several equally important destinations on your trip away from home, or just an incidental or spur of the moment stop on your trip away from home?

Results (Figure 28)

- 64% of visitor groups reported that visiting the park was the primary or sole purpose of their trip.
- 26% of visitor groups reported that their visit to the park was one of several equally important destinations.

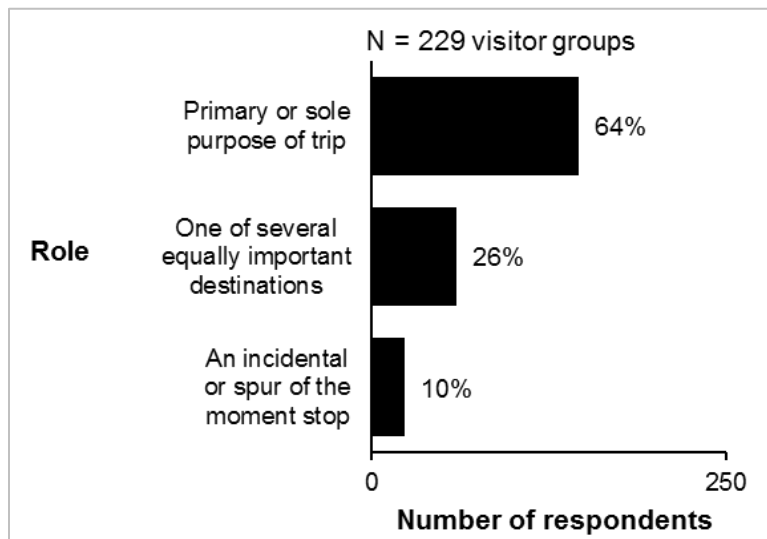


Figure 28. Role of park visit in trip away from home.

Role of park visit in trip away from home, if not primary or sole purpose for trip

Question 27

If this was one of several equally important destinations on your trip away from home, was one or more of the other equally important destinations located within the nearby area (within the shaded area of the map)?

See Figure 14 or Appendix 2 for map.

Results (Figure 29)

- For those visitor groups that reported visiting Biscayne NP as one of several equally important destinations, 32% reported that one or more equally important destinations were within the nearby area.

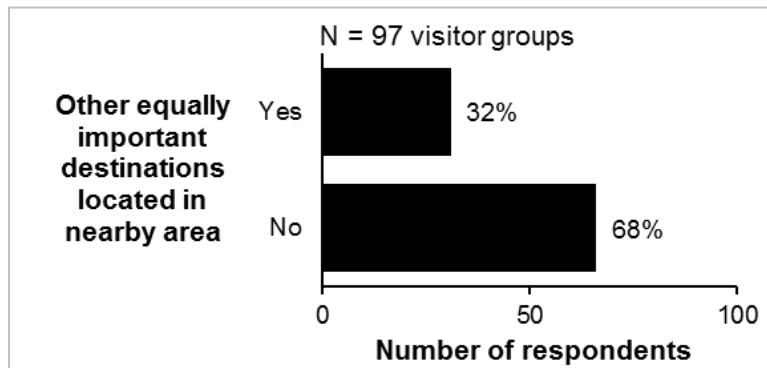


Figure 29. Location of other equally important destinations.

Question 27

If this was just an incidental or spur of the moment stop on your trip away from home, was your primary destination located within the nearby area (within the shaded area of the map)?

See Figure 14 or Appendix 2 for map.

Results (Figure 30)

- For those visitor groups that reported visiting Biscayne NP as just an incidental stop, 29% reported that their primary destination was within the shaded area of the map.

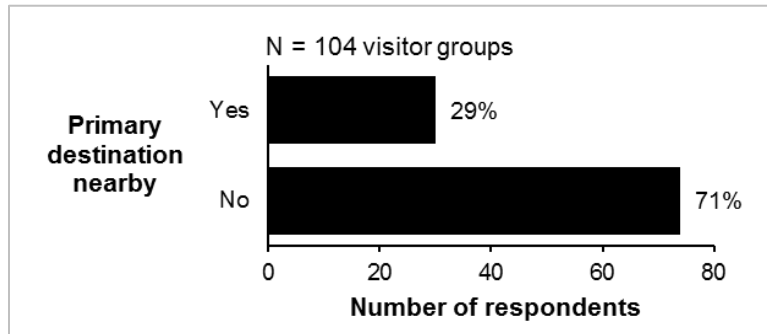


Figure 30. Location of primary destination if spur of the moment trip.

Reasons for visiting the park on this trip

Question 9

How important to you was each of the following reasons for visiting Biscayne NP on this trip?

Rating choices:

- 1 = Extremely important
- 2 = Very important
- 3 = Moderately important
- 4 = Slightly important
- 5 = Not at all important

Results (Figure 31)

- Figure 31 shows the combined proportions of “extremely important” and “very important” ratings for reasons for visiting the park.
- The reasons that received the highest combined proportions of “extremely important” and “very important” ratings were:
 - 89% View wildlife or natural scenery
 - 85% Relax
 - 83% Be outdoors
- The reasons that received the lowest proportion combined proportions of “extremely important” and “very important” ratings were:
 - 26% Learn more about American history/culture
 - 22% View dark night sky/stars
 - 9% Attend a special event
 - Of those who rated “Attend a special event” (N = 200), events specified included:
 - “Wedding”
 - “Animal Show”
 - “Youth Mentoring”
- Of those who rated “Other” (N = 63), reasons specified included:
 - “Boating”
 - “Fishing”
 - “Junior Ranger Program”

Figure 32 through Figure 43 show ratings for each reason.

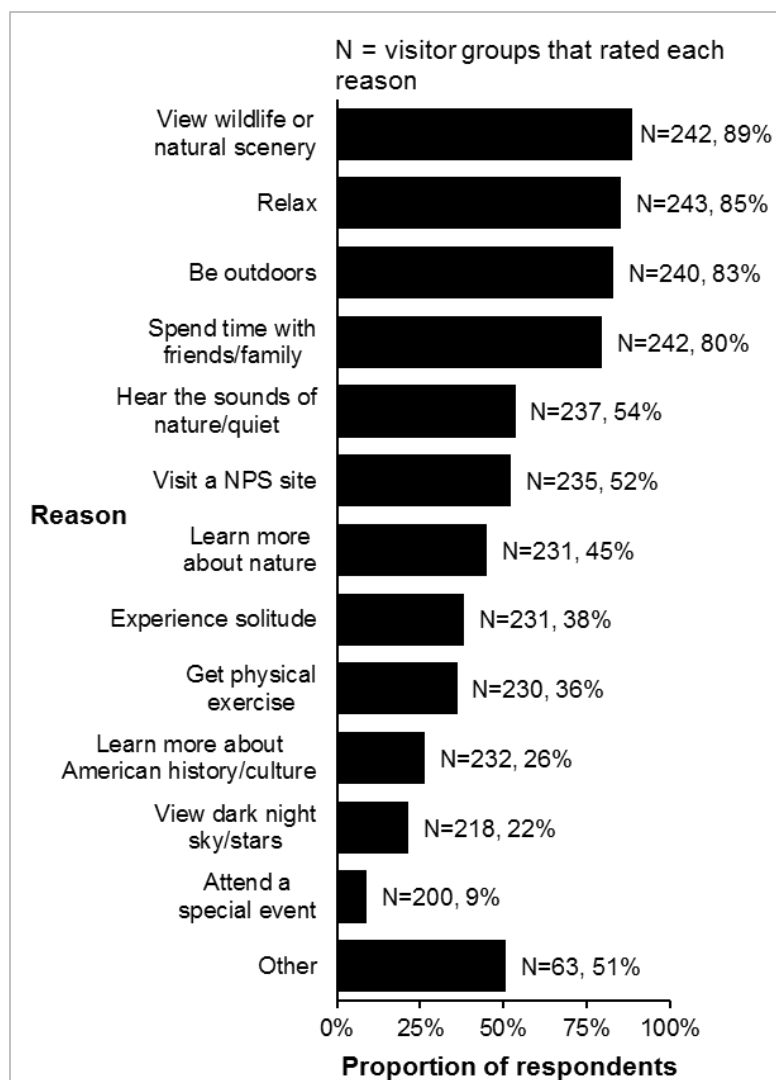


Figure 31. Reasons for visiting the park this trip.

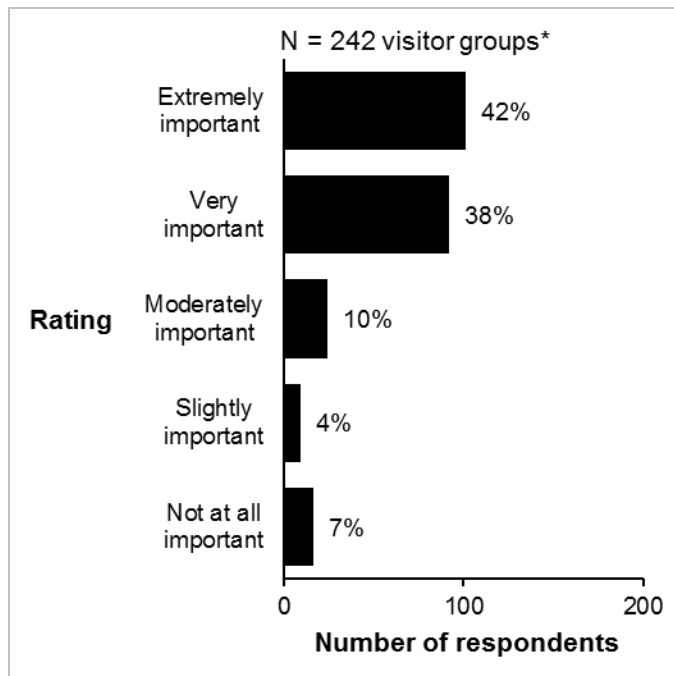


Figure 32. Importance of viewing wildlife or natural scenery.

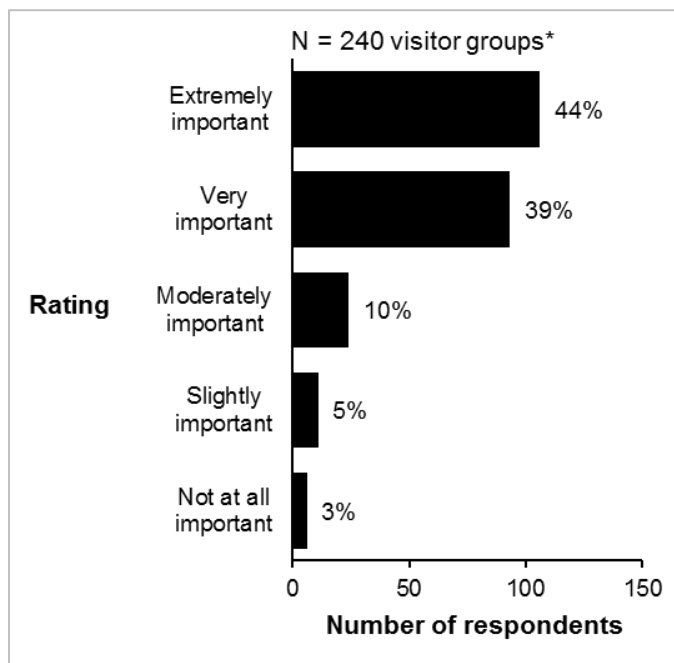


Figure 33. Importance of relaxing.

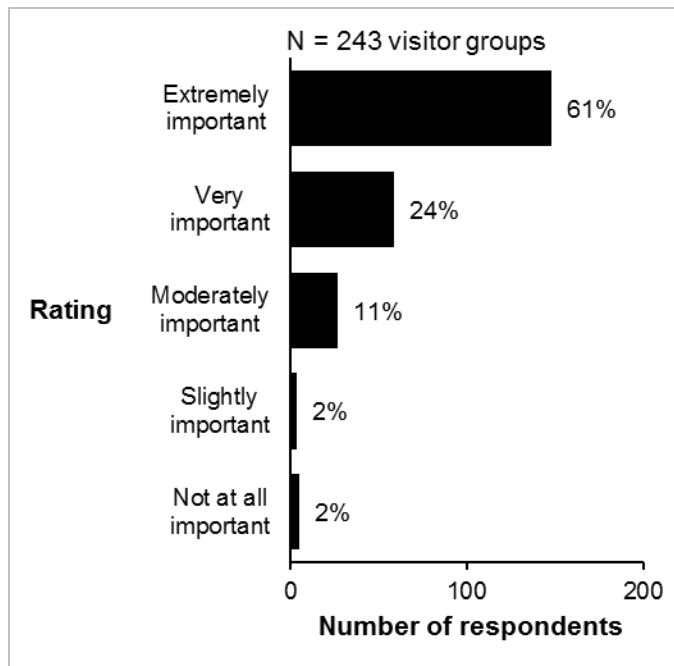


Figure 34. Importance of being outdoors.

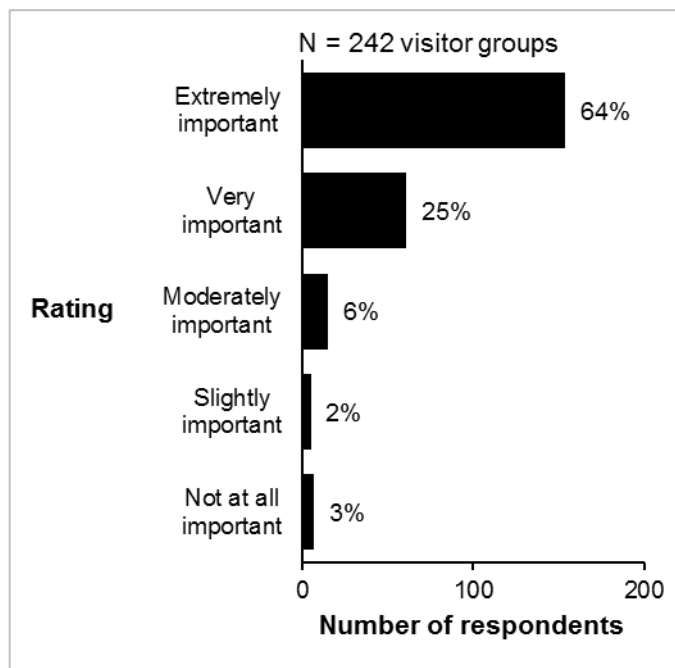


Figure 35. Importance of spending time with friends/family.

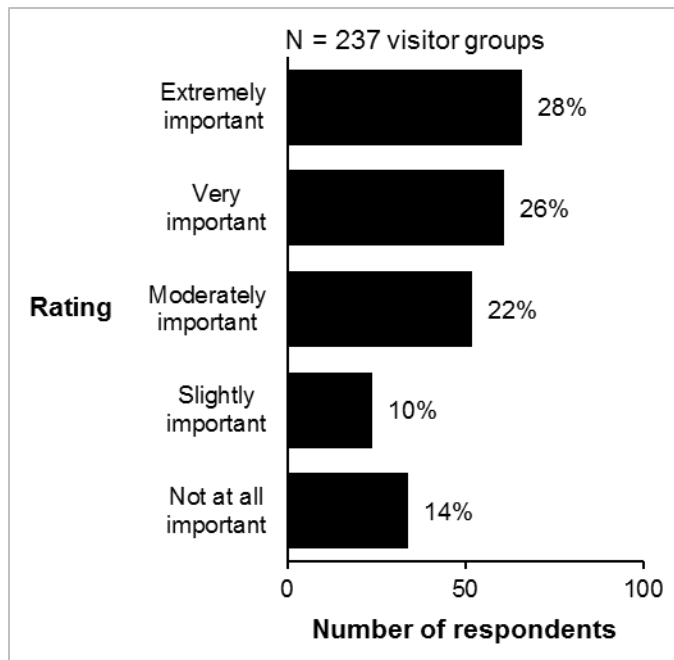


Figure 36. Importance of hearing the sounds of nature/quiet.

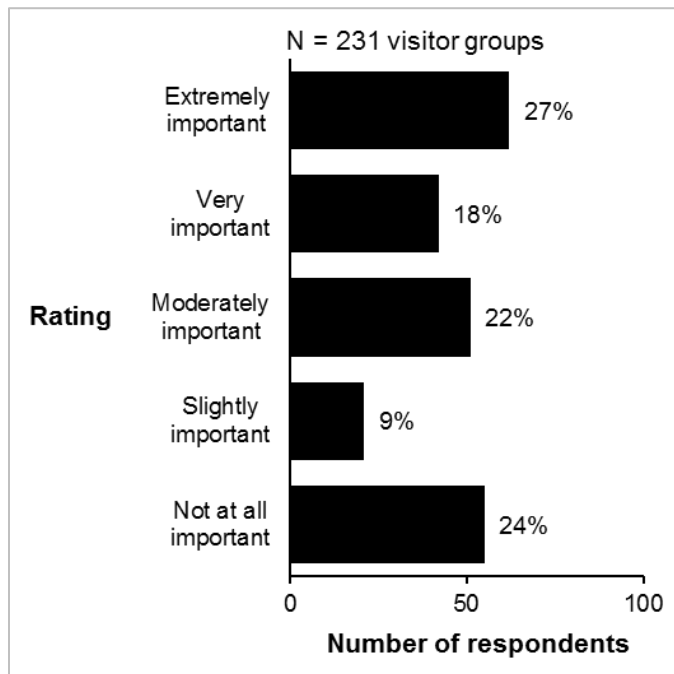


Figure 37. Importance of visiting an NPS site.

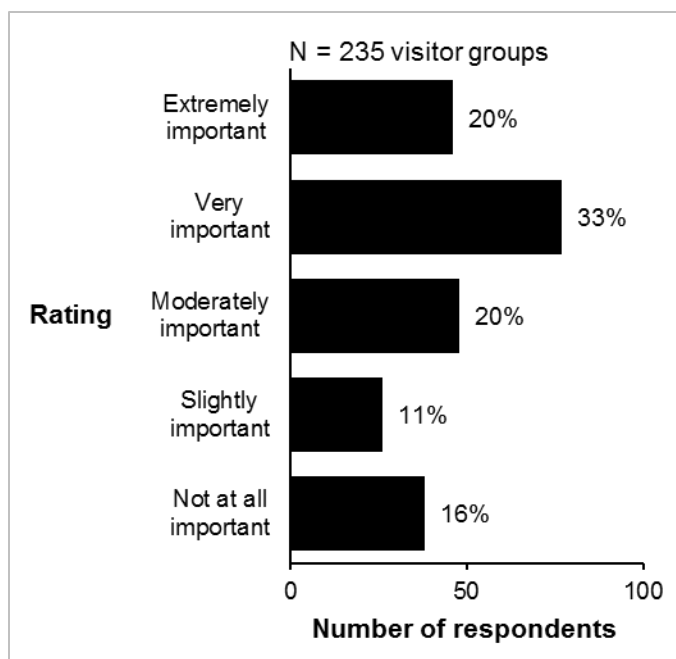


Figure 38. Importance of learning more about nature.

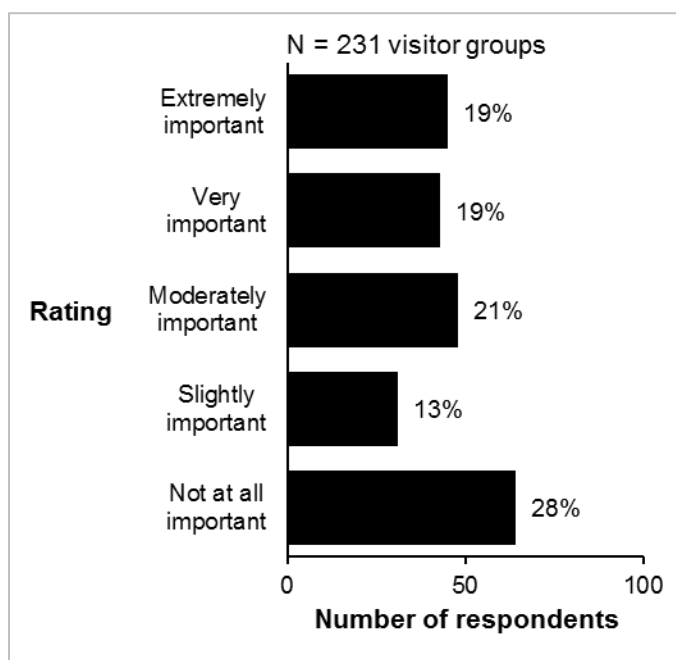


Figure 39. Importance of experience solitude.

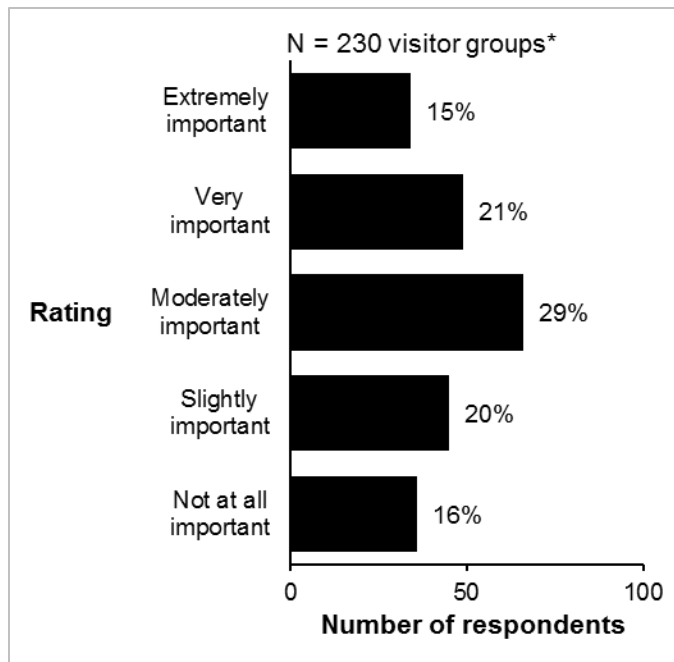


Figure 40. Importance of getting physical exercise.

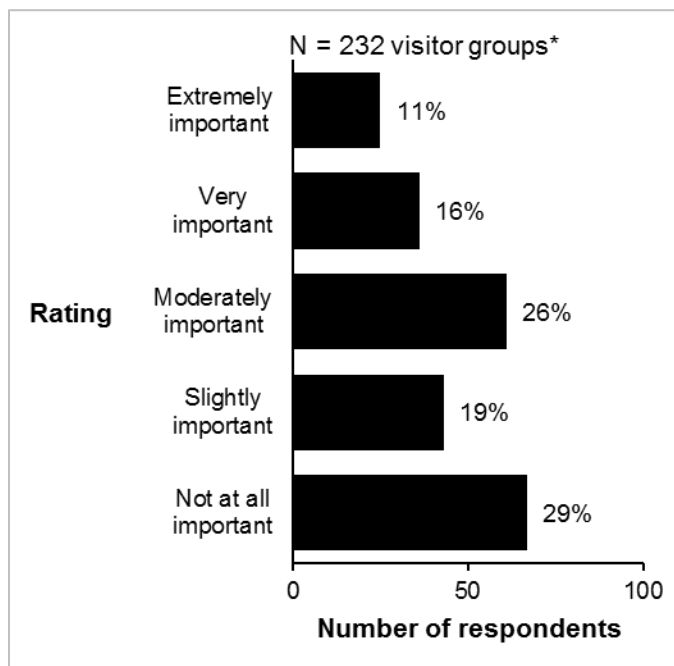


Figure 41. Importance of learning more about American history/culture.

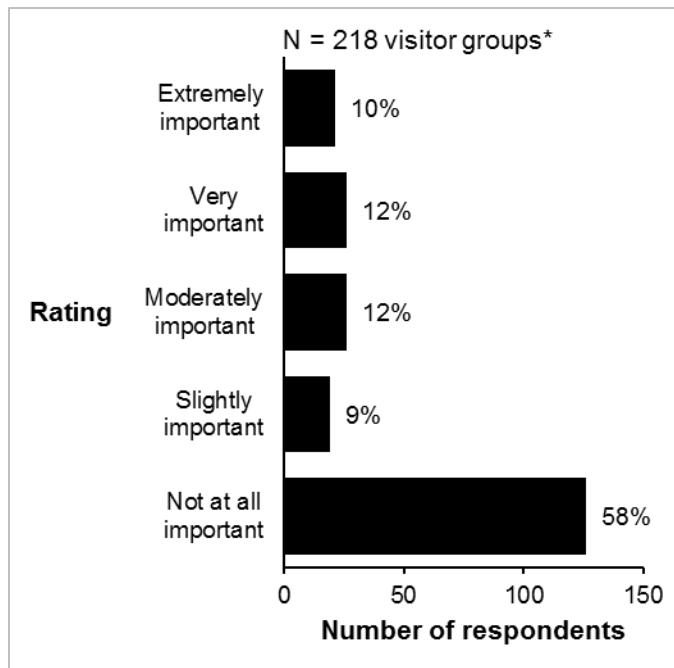


Figure 42. Importance of viewing dark night sky/stars.

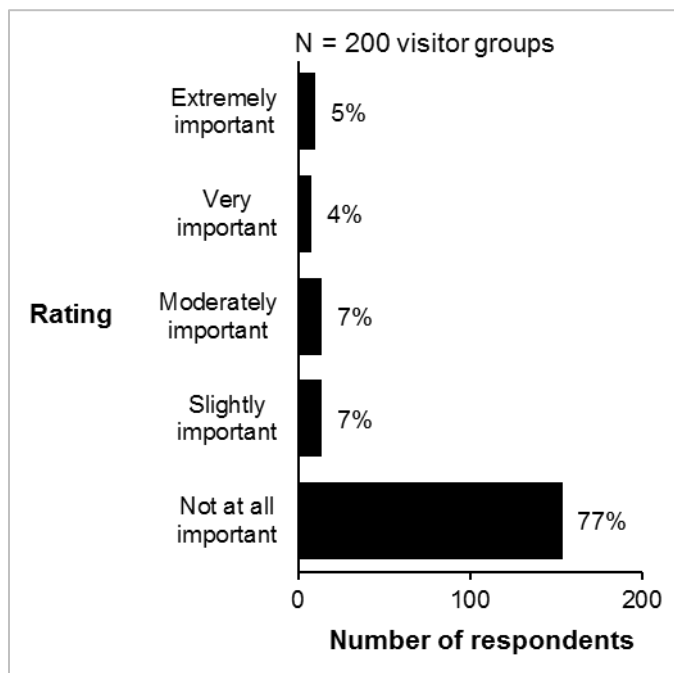


Figure 43. Importance of attending a special event.

Most important reason for visiting on this trip

Question 10

Of the reasons listed in Question 9, which was the most important reason for your visit to Biscayne NP on this trip?

Results

- As shown in Figure 44, the most common most important reasons for visiting Biscayne NP were:
 - 35% Spend time with friends and family
 - 16% To go boating and/or fishing
 - 13% To view wildlife or natural scenery
- The least common most important reasons were:
 - 2% Hearing the sounds of nature/quiet
 - 1% Learning more about American history and culture
 - <1% Learning more about nature
 - <1% Getting physical exercise
- Of those who responded “Other” (6%), reasons specified included:
 - “Stiltsville”
 - “Water sports”
 - “Sandbar”
 - “Catch bait”

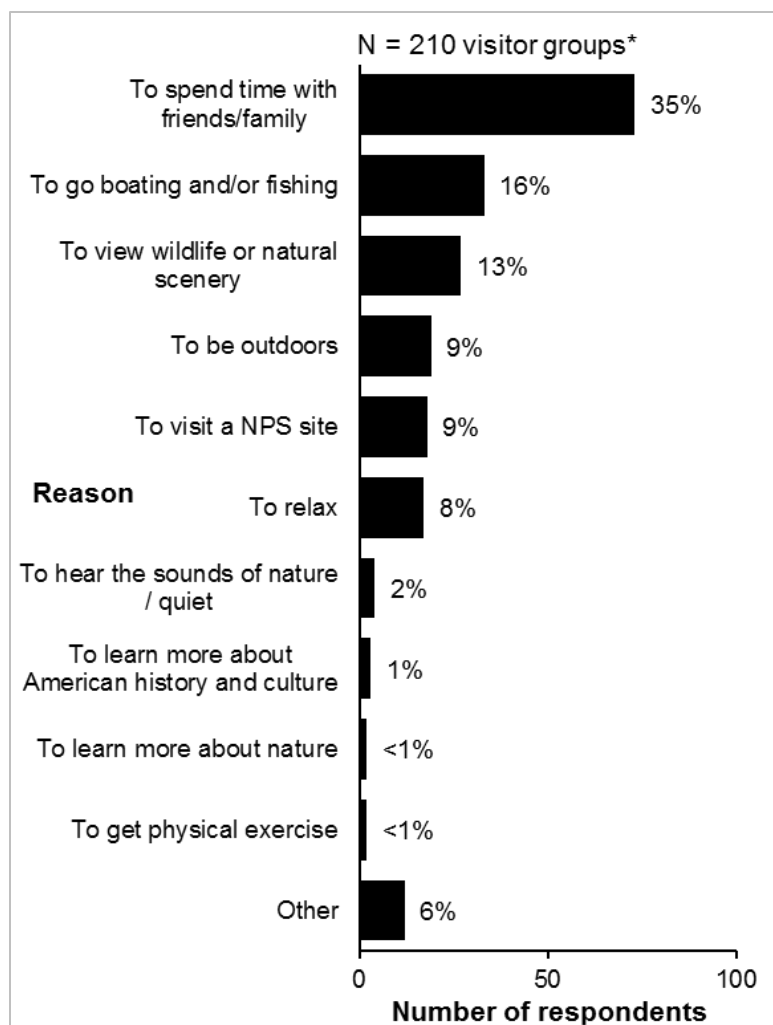


Figure 44. Most important reason for visiting the park on this trip.

Park Experience and Activities

Length of stay in Biscayne NP

Question 6

On this trip, how much total time did you spend within Biscayne NP?

Number of hours, if day trip

Results (Figure 45)

- 28% of visitor groups who spent less than 24 hours in the park visited for up to one to two hours.
- 28% of visitor groups who spent less than 24 hours in the park visited for five to six hours.

See Appendix 1 for more details.

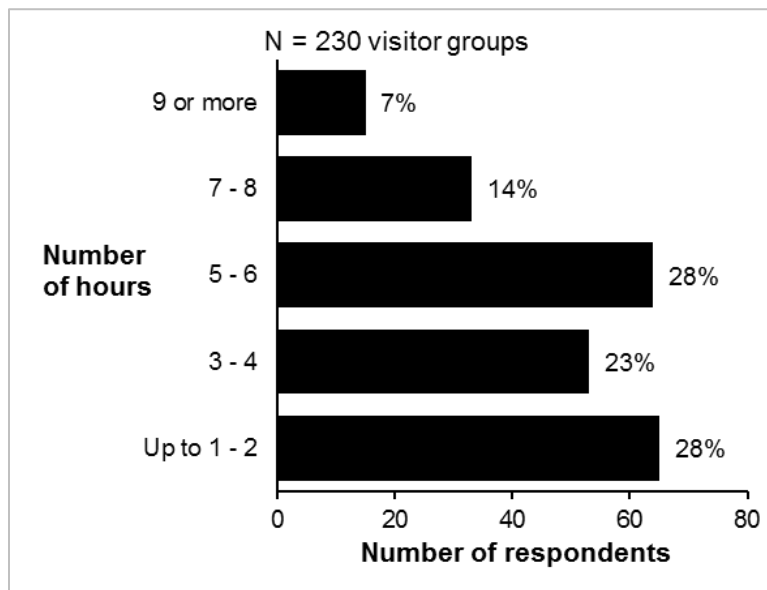


Figure 45. Number of hours visiting the park by groups who spent less than 24 hours in the park.

Number of days, if greater than 1 day

Results (Figure 46)

- 69% of visitor groups who reported spending 24 hours or more in the park visited for two days.
- 25% of visitor groups who reported spending 24 hours or more in the park visited for three or more days.

See Appendix 1 for more details.

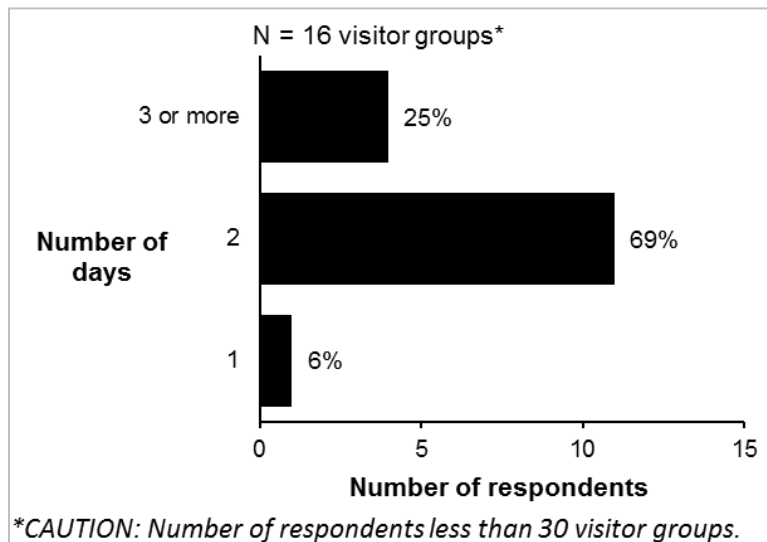


Figure 46. Number of days visiting the park by groups who spent 24 hours or more in the park.

Days entered or re-entered park

Question 5

On how many days during this trip did you enter or re-enter Biscayne NP? If you were on a day trip or if you camped or lodged inside the park and did not leave the park boundaries for the entire length of your stay, then answer 1 day.

Results (Figure 47)

- 92% of visitor groups entered or re-entered the park on only one day.

See Appendix 1 for more details.

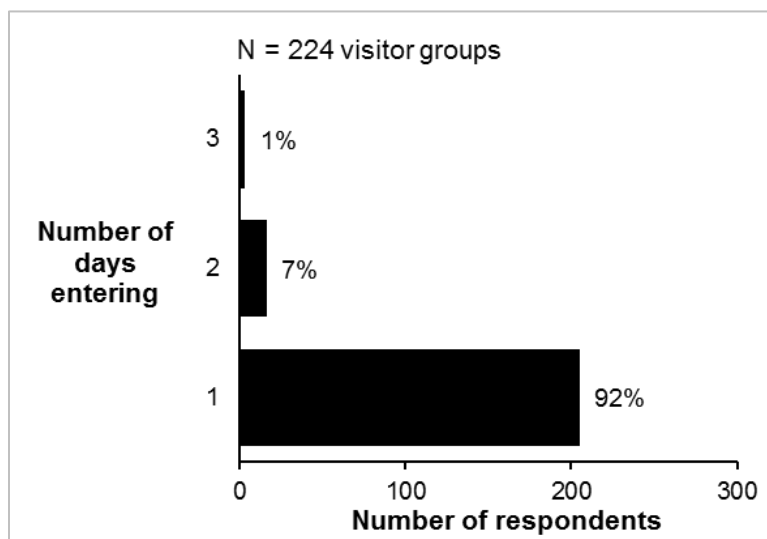


Figure 47. Number of days entered or re-entered park.

Overnight stay

Question 26a

On this trip to Biscayne NP and the nearby area, did you stay overnight away from your permanent residence either inside Biscayne or within the nearby area (within the shaded area of the map)?

See Figure 14 or Appendix 2 for map.

Results (Figure 48)

- 21% of visitor groups stayed overnight inside Biscayne NP or within the nearby area on this trip.

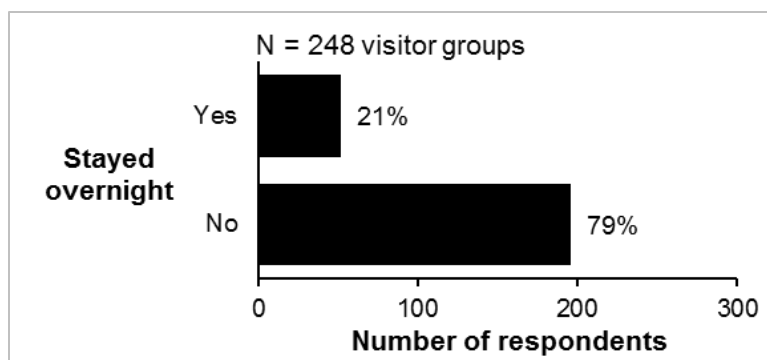


Figure 48. Visitors who stayed overnight in/near Biscayne NP.

Nights spent in overnight accommodations

Question 26b

If YES, please list the number of nights you stayed in Biscayne NP and/or in the nearby area (within the shaded area of the map) on this trip.

Results (Figure 49)

- Figure 49 shows the proportions of visitor groups that reported staying one or more nights in overnight accommodations outside of their permanent residence.
- 62% of visitor groups who stayed overnight one or more nights stayed in lodging outside of Biscayne NP.
- 14% of visitor groups who stayed overnight one or more nights stayed in Biscayne NP.

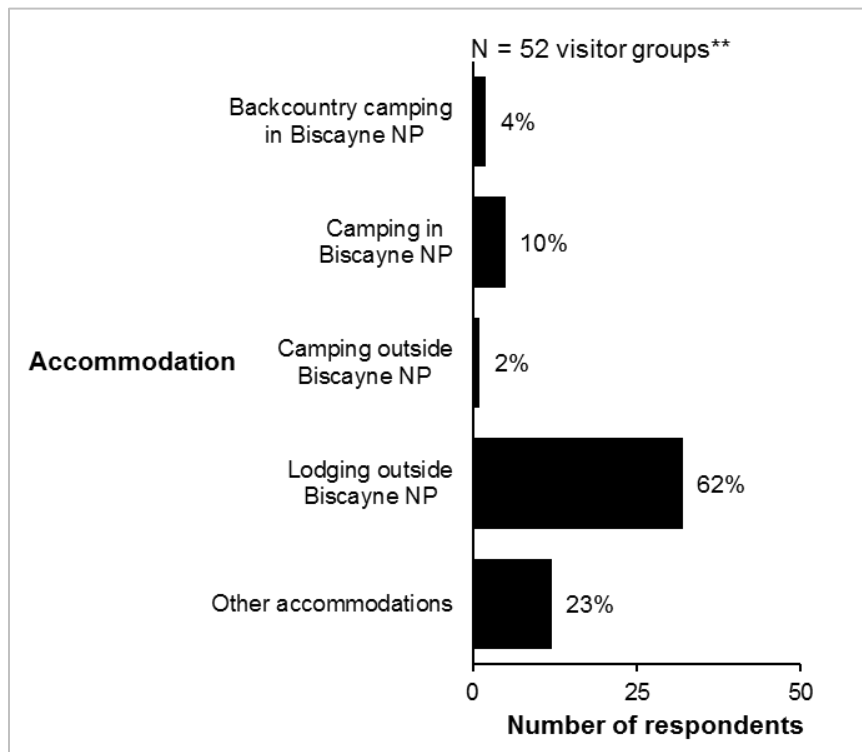


Figure 49. Accommodations for nights spent in Biscayne NP or the nearby area.

Backcountry Camping in Biscayne NP

Results (Figure 50)

- 50% of visitor groups who camped in the backcountry of Biscayne NP camped for one night.
- 50% of visitor groups who camped in the backcountry of Biscayne NP camped for three nights.

See Appendix 1 for more details.

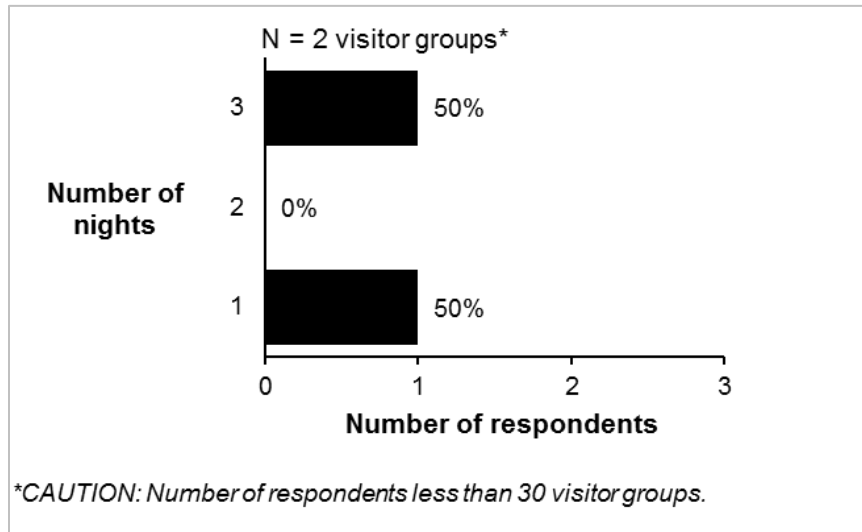


Figure 50. Nights spent in backcountry in Biscayne NP.

Camping in Biscayne NP

Results (Figure 51)

- 60% of visitor groups who camped in Biscayne NP camped for one night.
- 40% of visitor groups who camped in Biscayne NP camped for three nights.

See Appendix 1 for more details.

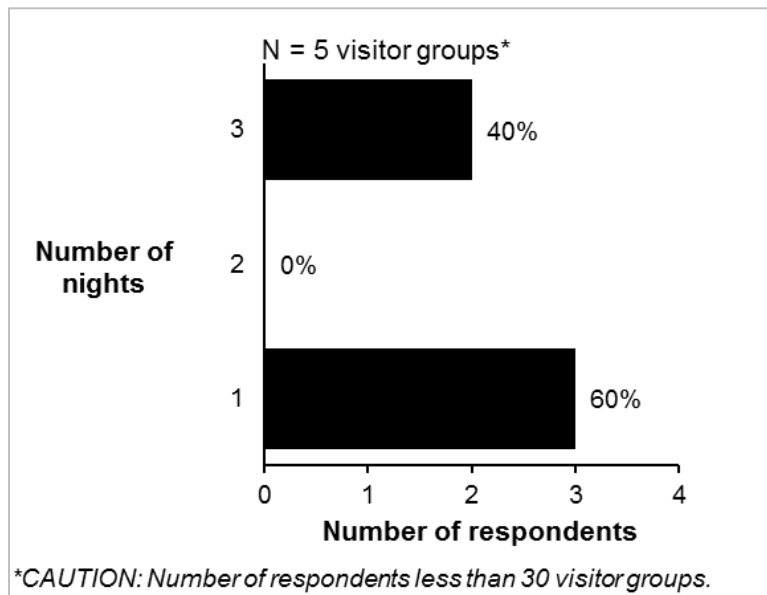


Figure 51. Nights spent camping in Biscayne NP.

Camping outside Biscayne NP

Results (Figure 52)

- 100% of visitor groups who camped outside Biscayne NP camped for one night.

See Appendix 1 for more details.

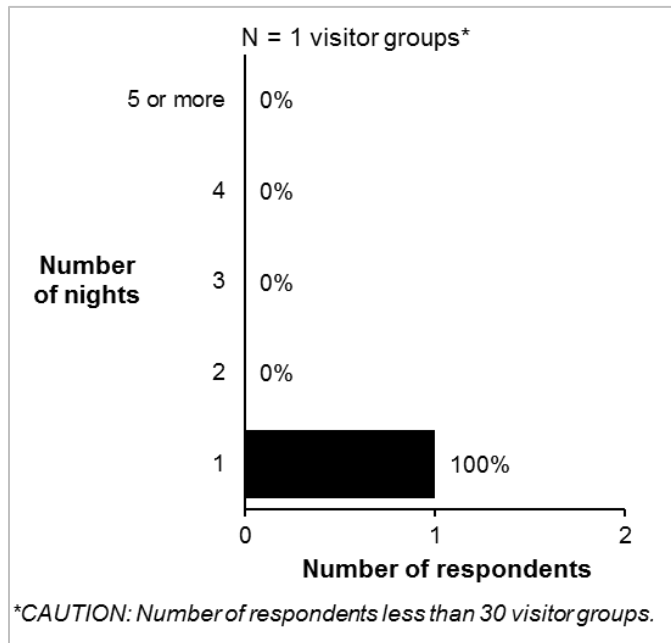


Figure 52. Nights spent camping outside Biscayne NP.

Lodging Outside Biscayne NP

Results (Figure 53)

- 31% of visitor groups who stayed at lodging outside Biscayne NP stayed for five or more nights.
- 28% of visitor groups who stayed at lodging outside Biscayne NP stayed for two nights.
- 19% of visitor groups who stayed at lodging outside Biscayne NP stayed for three nights.

See Appendix 1 for more details.

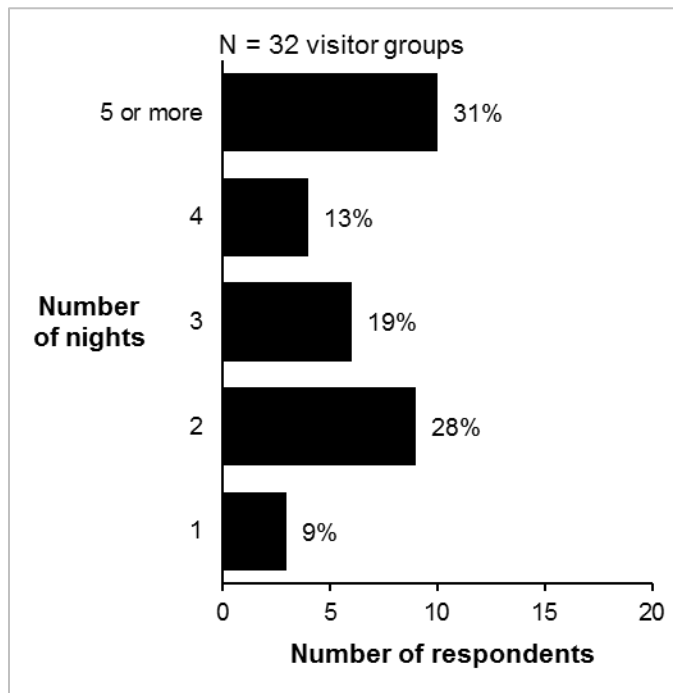


Figure 53. Nights spent in lodging outside Biscayne NP.

Other accommodations (e.g., friends/relatives)

Results (Figure 54)

- 17% of visitor groups who stayed overnight in other accommodations stayed for two nights.
- 33% of visitor groups who stayed overnight in other accommodations stayed for five or more nights.

See Appendix 1 for more details.

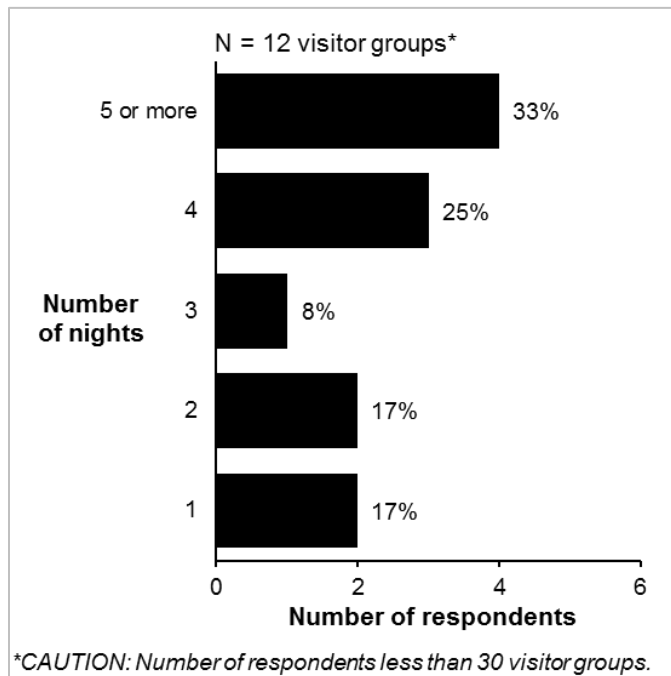


Figure 54. Nights in other accommodations (e.g., friends/relatives).

Visits to other National Park Service sites

Question 28

Did you visit any other National Park Service sites on your trip away from home?

Results (Figure 55)

- 81% of visitor groups did not visit other NPS units on their trip away from home.

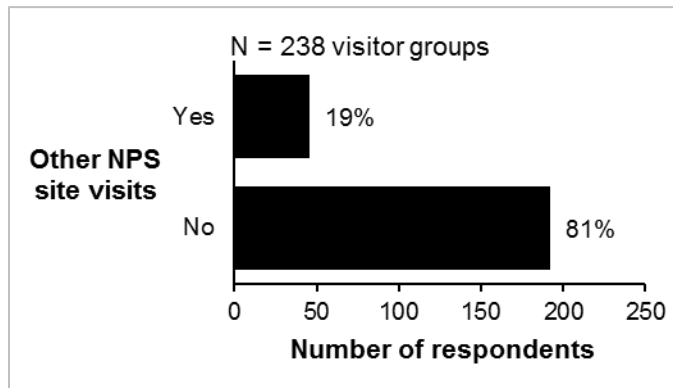


Figure 55. Visited other NPS sites on trip away from home.

Other National Park Service sites visited

Question 28

If YES, please specify other National Park Services sites you visited.

Results (Table 16)

- Of those visitor groups that did visit other NPS units on their trip (19%), the most common other NPS units included:
 - Everglades National Park (mentioned 36 times)
 - Dry Tortugas National Park (mentioned 12 times).

Table 16. Other National Park Service sites visited. N = 128 comments. Some visitor groups may have visited more than one other NPS site.

Site	Frequency of times mentioned
Everglades National Park	36
Dry Tortugas National Park	12
Big Cypress National Preserve	7
Great Smoky Mountains National Park	3
Shenandoah National Park	3
Castillo de San Marcos National Monument	2
Congaree National Park	2
De Soto National Memorial	2
Grand Canyon National Park	2
Kennesaw Mountain National Battlefield Park	2
Martin Luther King Jr. Memorial	2
Vicksburg National Military Park	2
Andersonville National Historic Site	1
Canaveral National Seashore	1
Chickamauga & Chattanooga National Military Park	1
Jimmy Carter National Historic Site	1
New River Gorge National River	1

Activity participation

Question 12

On this trip, in which of the following activities did you personally participate within Biscayne NP?

Results

- As shown in Figure 56, the most common activities in which visitor groups participated were:
 - 67% Viewing wildlife, natural features, scenery, wildflowers, etc.
 - 47% Motorized water activities
 - 37% Water play
- Of those who responded “Motorized water activities” (47%), activities in which groups participated included:
 - “Boating”
 - “Water Skiing”
- Of those who responded “Water Play” (37%), activities in which groups participated included:
 - “Swimming”
 - “Snorkeling”
 - “Scuba Diving”
- Of those who responded “Non-motorized water activities” (12%), activities in which groups participated included:
 - “Kayak”
 - “Sailboat”
 - “Canoe”

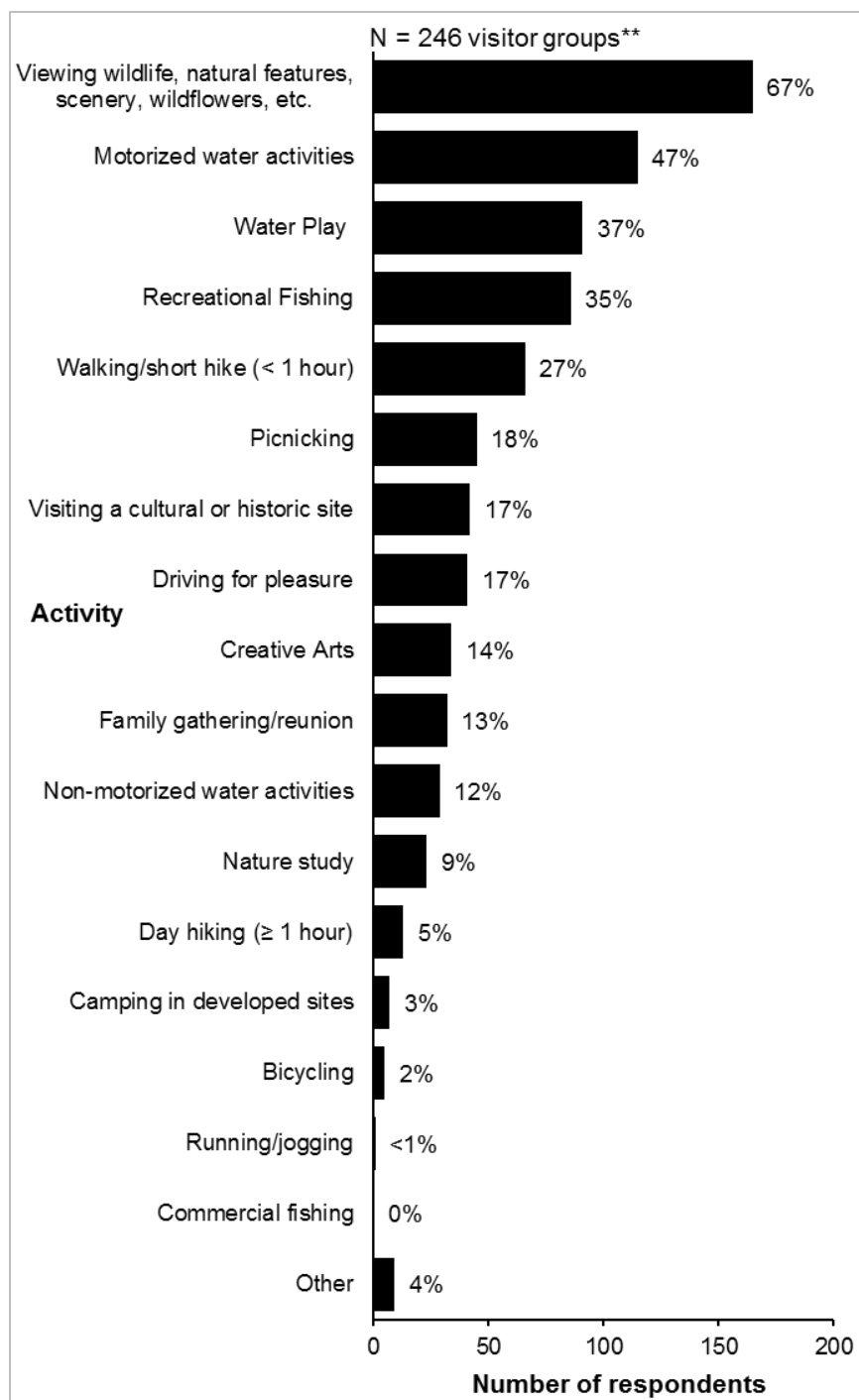


Figure 56. Participation in activities on this trip.

Primary activity on this trip

Question 13

Of the activities listed in Question 12, which was your primary activity during your visit to Biscayne NP on the day you were contacted for this survey?

Results

- As shown in Figure 57, the most common primary activities listed by visitor groups were:
 - 20% Viewing wildlife, natural features, scenery, wildflowers, etc.
 - 20% Visiting a cultural or historic site
- Of those who responded “Other” (5%), activities specified included:
 - “Boat Tour”
 - “Snorkeling”
 - “Visit to Sandbar”
- 10% of visitor groups did not have a primary activity.

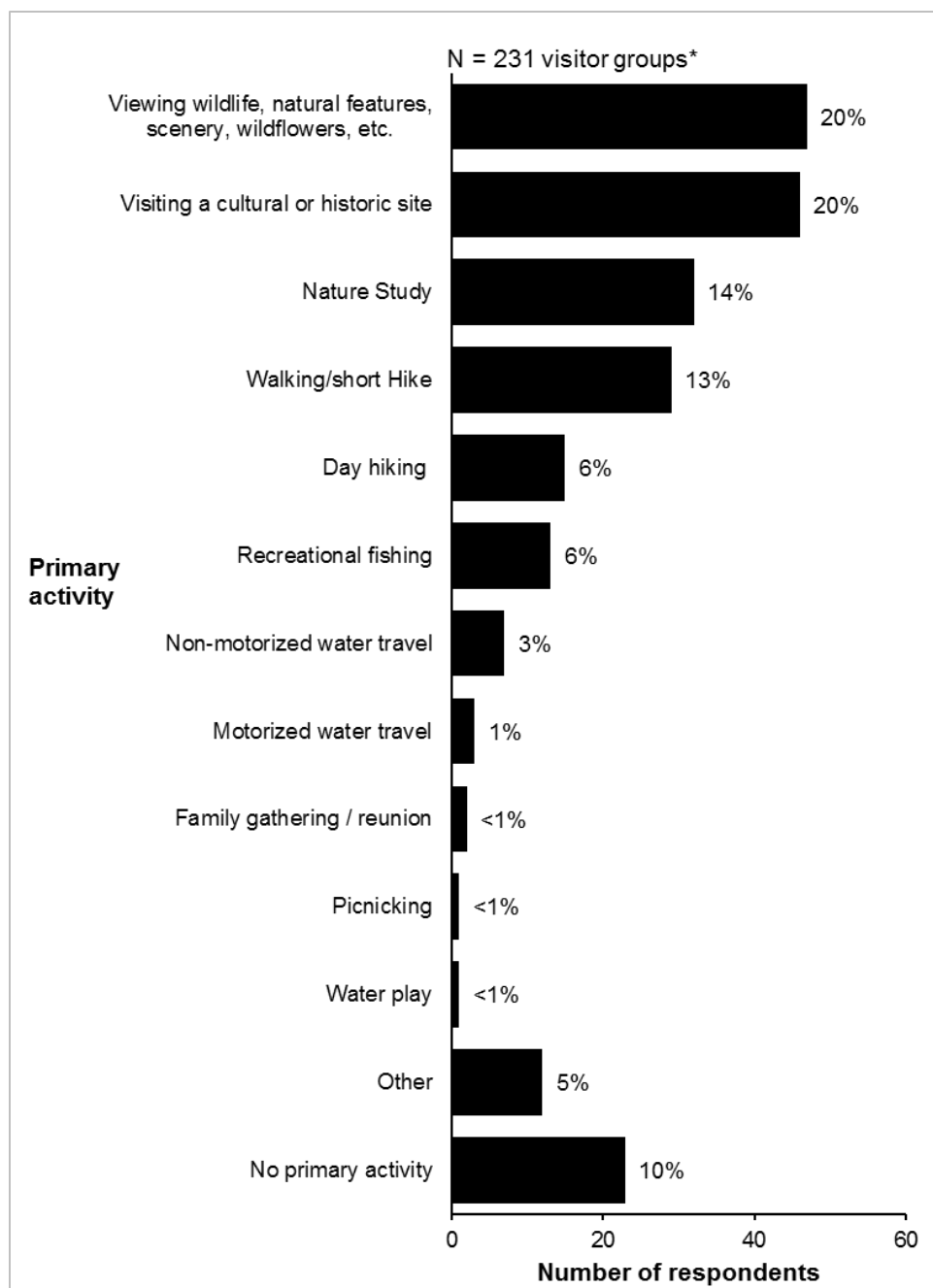


Figure 57. Primary activity on this trip to Biscayne National Park.

Visitors with physical conditions

Question 17a

Did anyone in your personal group have a physical condition that made it difficult to access or participate in park activities or services, during your visit to Biscayne NP?

Results (Figure 58)

- <1% of visitor groups had members with physical conditions that made it difficult to access or participate in park activities or services.

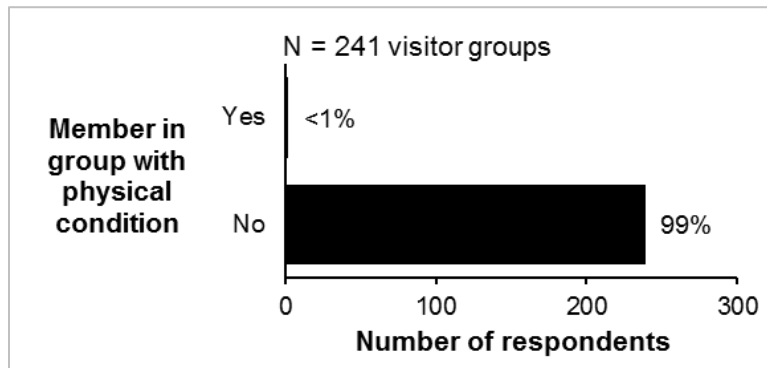


Figure 58. Visitors with physical conditions.

Question 18b

If YES, what activities, services, or facilities did the person(s) have difficulty participating in or accessing? (open-ended)

Results (Table 17)

- “Walking” and “wheelchair on boardwalk” were each mentioned as activities in which members of visitor groups had difficulty participating.

Table 17. Activities/services/facilities difficult to participate in/access. N = 2 comments. Some visitor groups may have made more than one comment.

Activity, service, or facility	Frequency of times mentioned
Walking	1
Wheelchair on boardwalk	1

Question 18c

Because of the physical condition, which specified difficulties did the person(s) have?

Results (Figure 59)

- Of visitor groups that had at least one member with a physical condition, mobility was the only specific difficulty reported.

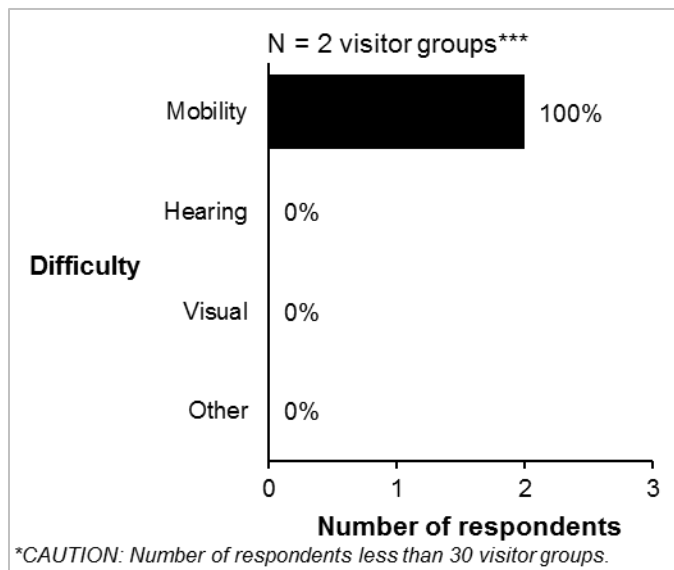


Figure 59. Specific difficulties had by visitor group member(s).

Programs and services participation

Question 13

On this trip, in which of the following programs and services did you personally participate within Biscayne NP?

Results

- As shown in Figure 60, the most common programs and services in which visitor groups participated were:
 - 44% Going to the Visitor Center
 - 39% Viewing outdoor exhibits
 - 36% Viewing indoor exhibits
- Of those who responded “Other” (12%), programs and services included:
 - “Boat Ramp”
 - “Gift shop”
 - “Bathroom”

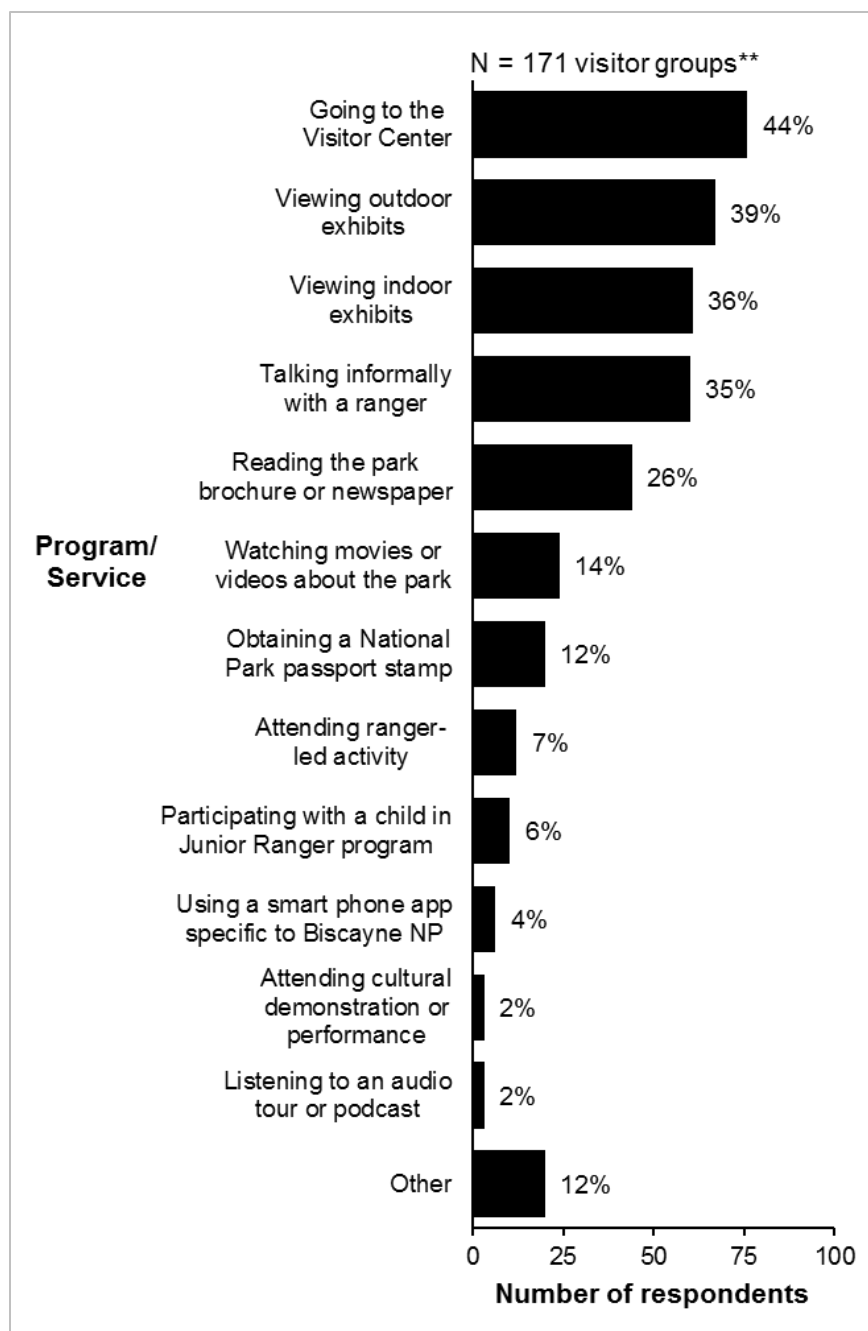


Figure 60. Participation in programs and services.

Learning from park staff, programs, and/or exhibits

Question 14

On this visit to Biscayne NP, did you learn anything from park staff, programs, and/or exhibits about American history, nature, and/or culture?

Results (Figure 61)

- 25% of visitors learned something from park staff, programs, and/or exhibits about American history, nature, and/or culture.

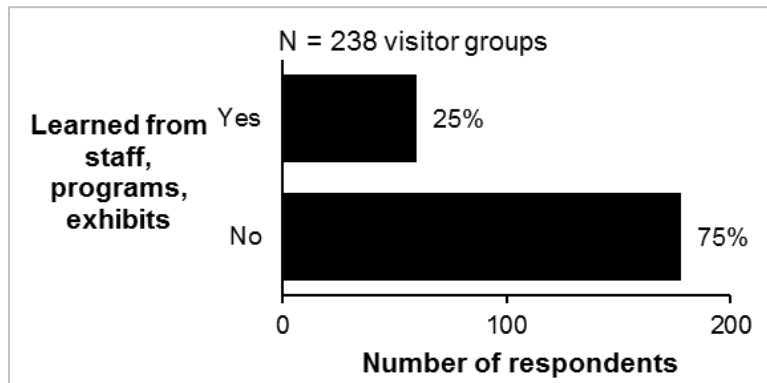


Figure 61. Visitors who learned something from park staff, programs, and/or exhibits.

Question 14

If YES, please specify subjects you learned about (open-ended).

Results (Table 18)

- Table 18 shows the subjects visitors learned about from park staff, programs, and/or exhibits. The most frequently mentioned subjects were:
 - “Wildlife” (mentioned 19 times).
 - “Ecosystems” (mentioned 13 times)
 - “History” (mentioned eight times)

Table 18. Subjects learned. N = 87 comments. Some visitor groups may have made more than one comment.

Subject	Frequency of times mentioned
Wildlife	19
Ecosystems	13
History	8
Park development	6
Plants	5
Sunken ships	3
Videos	3
Birds	2
Boat tour	2
Geography	2
Geology	2
Nature	2
Other comments	20

Learning about subjects on future visits

Question 15

If you were to visit Biscayne NP in the future, are there specific subjects you would like to learn about?

Results (Figure 62)

- 64% of visitors did not have specific subjects they would like to learn about on a future visit to Biscayne NP.

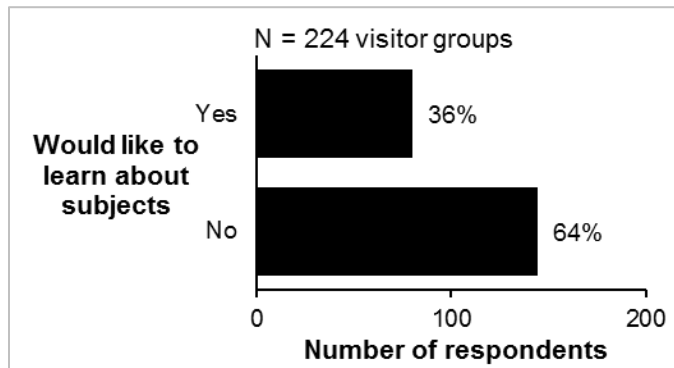


Figure 62. Visitors who would like to learn about specific subjects on future visits.

Question 15

If YES, please specify subjects you would like to learn about (open-ended).

Results (Table 19)

- Table 19 shows the subjects visitors would like to learn about on future visits to Biscayne NP. The most frequently mentioned subjects were:
 - “History and culture” (mentioned 12 times)
 - “Wildlife” (mentioned eight times)
 - “Nature” (mentioned eight times)

Table 19. Subjects visitors would like to learn. N = 105 comments. Some visitor groups may have made more than one comment.

Subject	Frequency of times mentioned
History and culture	12
Wildlife	8
Nature	8
Marine life	8
Shipwreck history	7
Fishing regulations	7
Environmental concerns	7
Ecosystems	5
Park development	4
Marine life conservation	4
Fishing	4
Boat ride	4
Other keys	3
Diving	3
Junior ranger program	2
Ecology	2
Camping	2
Boating regulations	2
Other Comments	13

Expenditures

Purchase of package tour(s)

Question 29a

Did you or anyone in your personal group purchase any package tours that included at least some meals, some lodging, and/or some transportation while on this trip?

Results (Figure 63)

- 1% of visitor groups had at least one member who purchased a package tour.

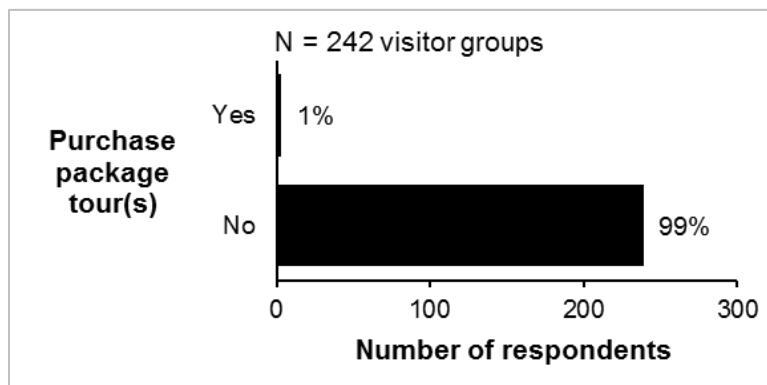


Figure 63. Visitor groups with member(s) who purchased packaged tour(s).

Question 29b

If YES, what was the total length of your package tour(s)?

Results (Figure 64)

- Of the 1% of visitor groups who purchased a package tour:
 - All visitor groups a package tour with a total length of one day.

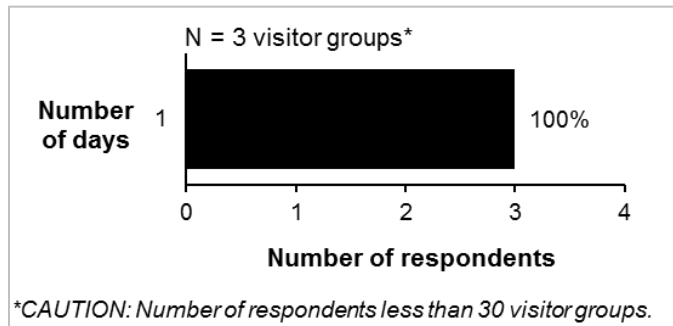


Figure 64. Total length of package tour(s) purchased by at least one group member.

Question 29c

If YES, what was the total cost per person for the package tour(s)?

Results (Figure 65)

- Of the 1% of visitor groups who purchased a package tour:
 - 33% purchased a package tour with a total cost up to \$100 per person.
 - 33% purchased a package tour with a total cost of \$101 to \$200 per person.
 - 33% purchased a package tour with a total cost of \$200 or more per person.

See Appendix 1 for more details.

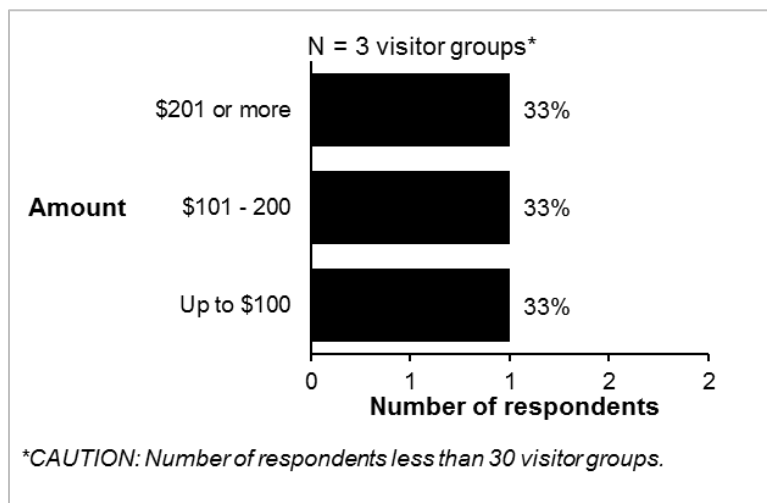


Figure 65. Total cost per person for package tour(s) purchased by at least one group member.

Question 29d

If YES, how many people in your personal group were on the package tour(s)?

Results (Figure 66)

- Of the 1% of visitor groups who purchased a package tour:
 - 67% were on a package tour that covered four people.
 - 33% were on a package tour that covered three people.

See Appendix 1 for more details.

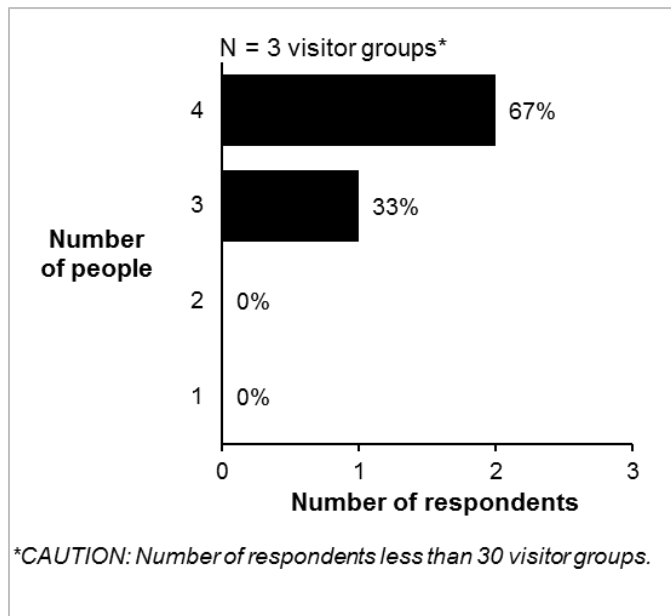


Figure 66. Number of group members on package tour(s) purchased by at least one group member.

Items included in package tour(s) as a part of visit

Question 29e

If YES, which of the following were included in the package tour(s) as part of your visit to Biscayne NP and the nearby area (within the shaded area of the map)?

Results (Figure 67)

- Of the 1% of visitor groups who purchased a package tour, the most common items that were included in package tours purchased were:
 - 100% Local water transportation
 - 100% Guide services
 - 100% Admission

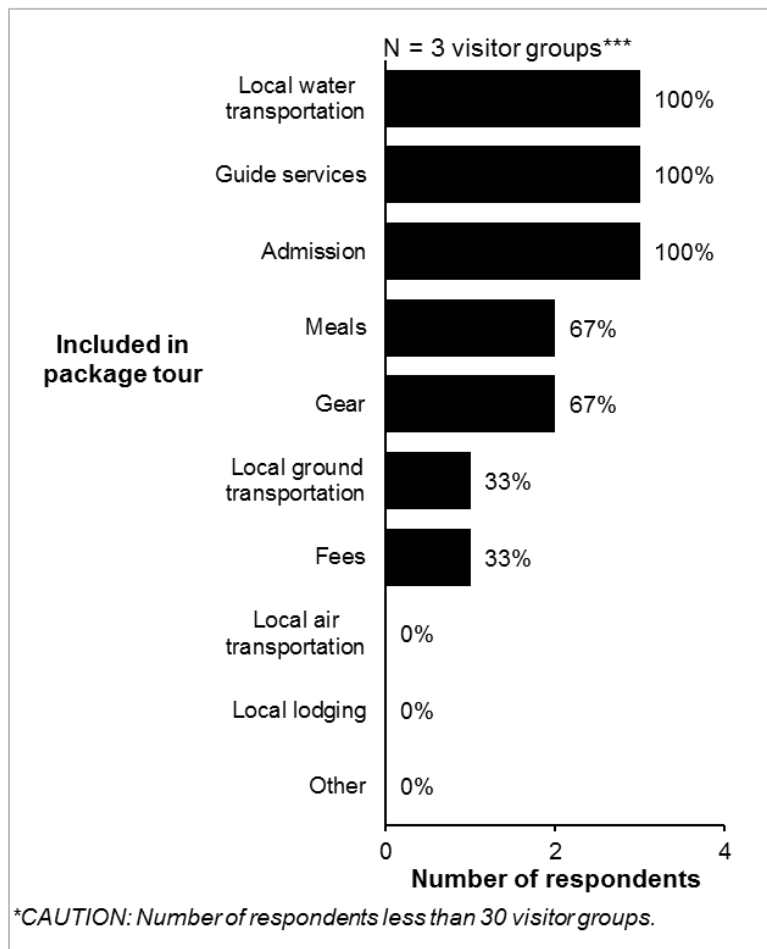


Figure 67. Items included in package tour(s) purchased by at least one group member.

Total expenditures inside Biscayne NP and nearby area

Question 30

Please estimate how much you and your personal group with whom you shared expenses (e.g., other family members, traveling companions) spent both inside Biscayne NP and within the nearby area (within the shaded area of the map) during your time in the nearby area. If you reported expenditures for package tours, please only include individual expenses that were NOT part of your package tour(s).

Note: Residents living with the highlighted area of the map should only include expenditures that were directly related to this trip in Biscayne NP.

See Figure 14 or Appendix 2 for map.

Results – group expenditures excluding package tour expenses (Figure 68)

- 67% of visitor groups spent \$1 to \$250 in Biscayne NP and the nearby area.
- 22% of visitor groups spent \$251 to \$1,000 in Biscayne NP and the nearby area.

See Appendix 1 for more details.

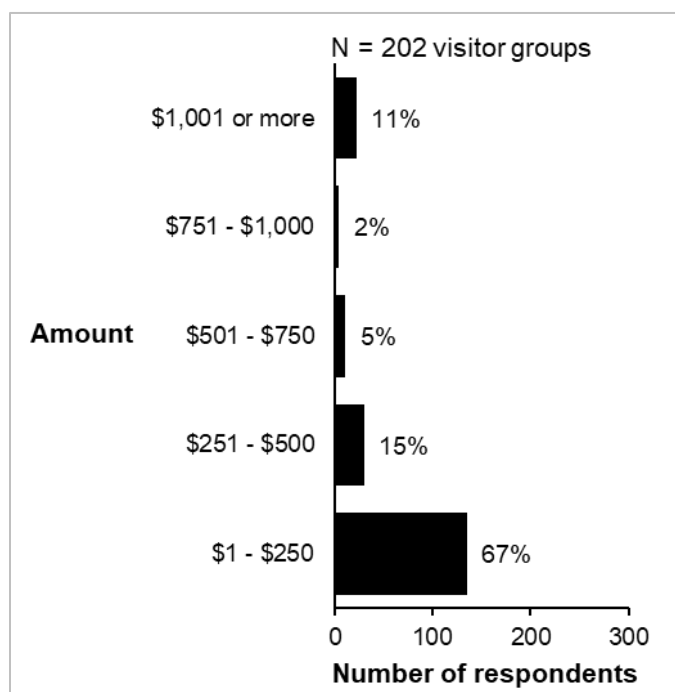


Figure 68. Total expenditures inside the park and in nearby area.

Percentages of total expenditures inside park and nearby area

Question 30

Please estimate how much you and your personal group with whom you shared expenses (e.g., other family members, traveling companions) spent both inside Biscayne NP and within the nearby area (within the shaded area of the map) during your time in the nearby area.

See Figure 14 or Appendix 2 for map.

Results (Figure 69)

- Percentages of group expenditures (excluding package tour expenses):
 - 19% Hotels, motels, resorts
 - 17% Gas/oil
 - 14% Restaurants/bars

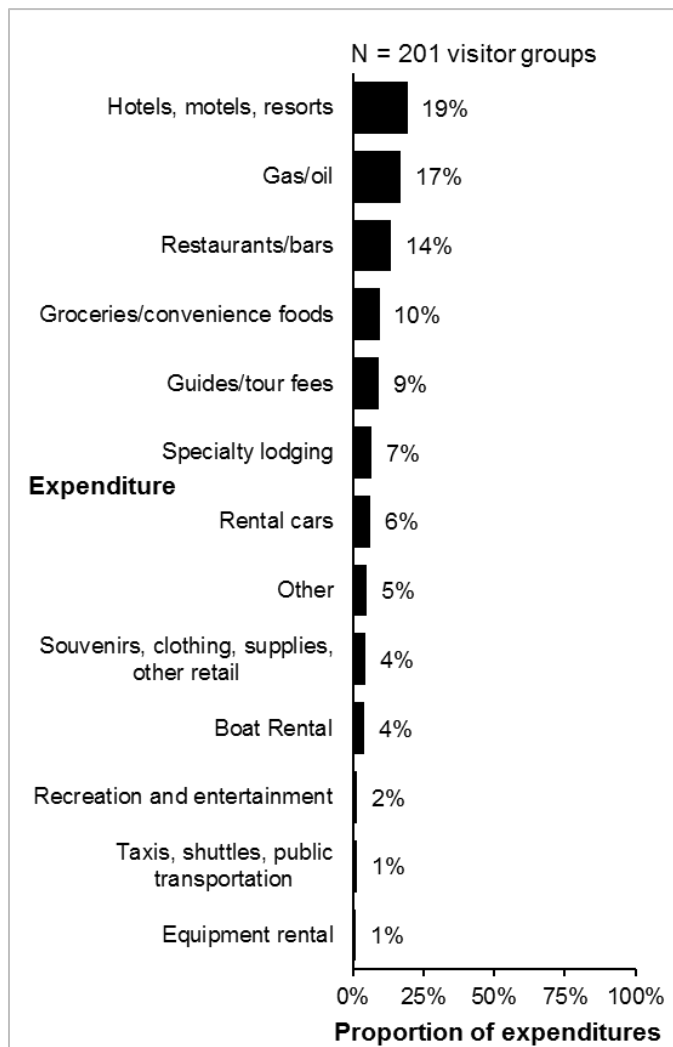


Figure 69. Percentages of total expenditures within the park and nearby area.

Number of people covered by expenses

Question 32a

Including yourself, how many people in your personal group were covered by the expenses for this trip away from home?

Results (Figure 70)

- 32% of visitor groups had two members covered by expenses.
- 29% of visitor groups had five or more members covered by expenses.

See Appendix 1 for more details.

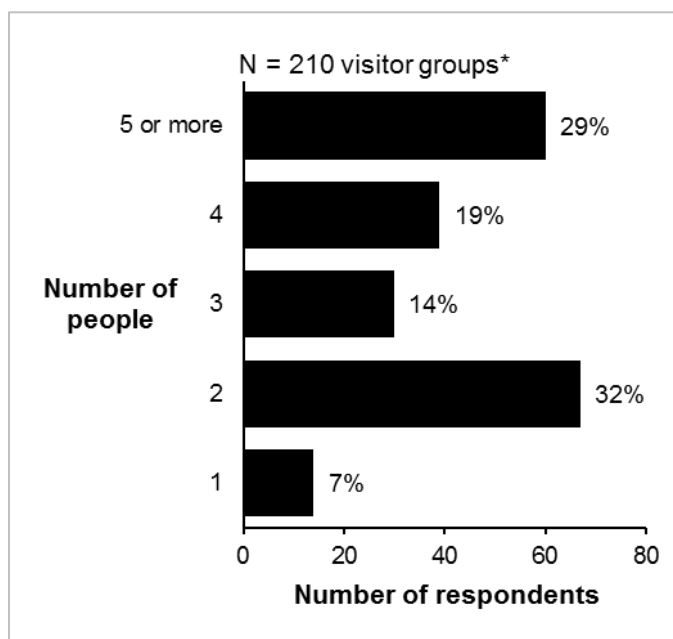


Figure 70. Visitors covered by expenses.

Adults covered by expenses

Question 32a

Including yourself, how many adults (18 years or over) in your personal group were covered by the expenses for this trip away from home?

Results (Figure 71)

- 45% of visitor groups had two adults covered by expenses.
- 15% of visitor groups had five or more adults covered by expenses.

See Appendix 1 for more details.

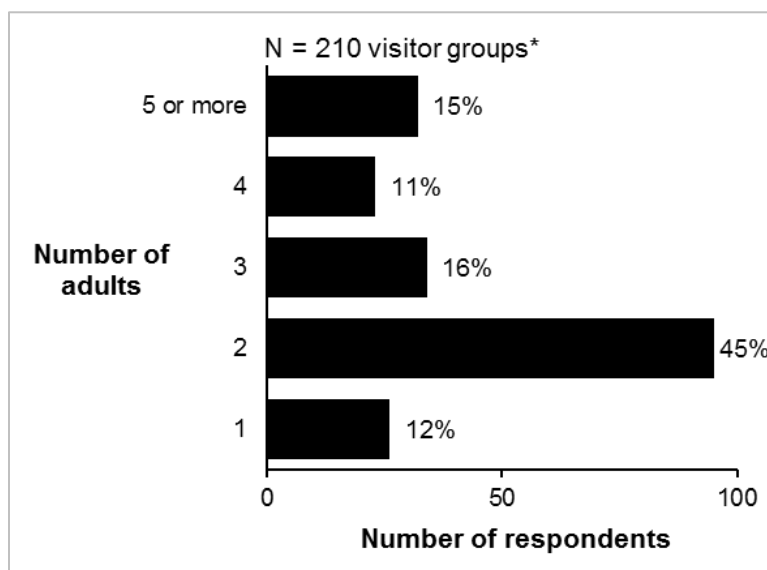


Figure 71. Adults covered by expenses.

Children covered by expenses

Question 32a

How many children (under 18 years) in your personal group were covered by the expenses for this trip away from home?

Results (Figure 72)

- 56% of visitor groups had no children covered by expenses.
- 33% of visitor groups had one or two children covered by expenses.

See Appendix 1 for more details.

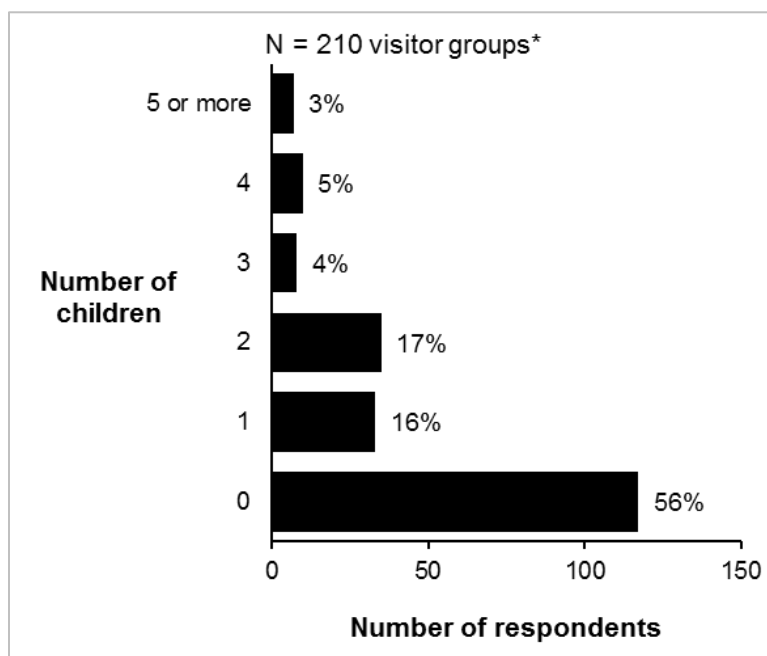


Figure 72. Children covered by expenses.

Sharing of expenses

Question 32b

Including yourself, how many people in your group split these trip expenses?

Results (Figure 73)

- 43% of visitor groups did not split the expenses on this trip.
- 42% of visitor groups had two people split trip expenses.

See Appendix 1 for more details.

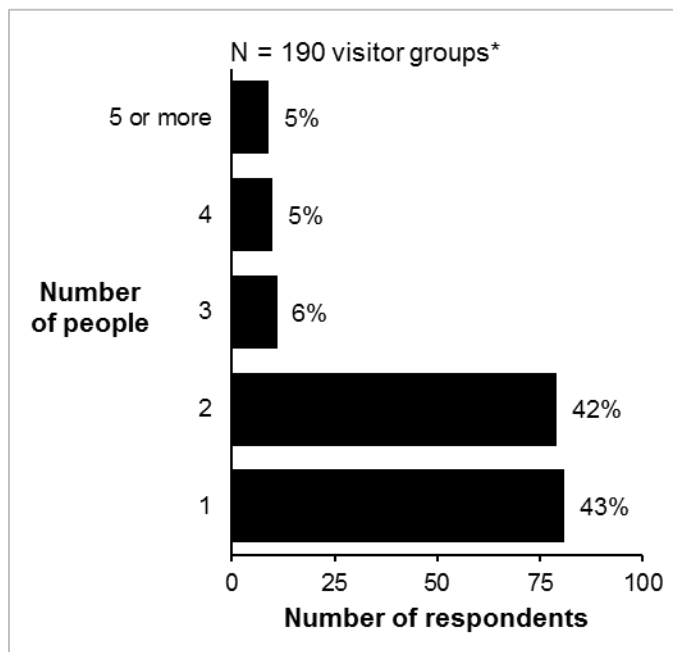


Figure 73. Sharing of expenses in visitor group.

Total expenditures outside of park and nearby area

Question 31

For you and any members of your personal group with whom you shared expenses, please record any additional money spent outside of the map area during your trip away from home (for example, travel or food expenditures).

Results (Figure 74)

- 55% of visitor groups spent no additional money outside of Biscayne NP and the nearby area.
- 29% of visitor groups spent \$301 or more on additional expenses outside of Biscayne NP and the nearby area.

See Appendix 1 for more details.

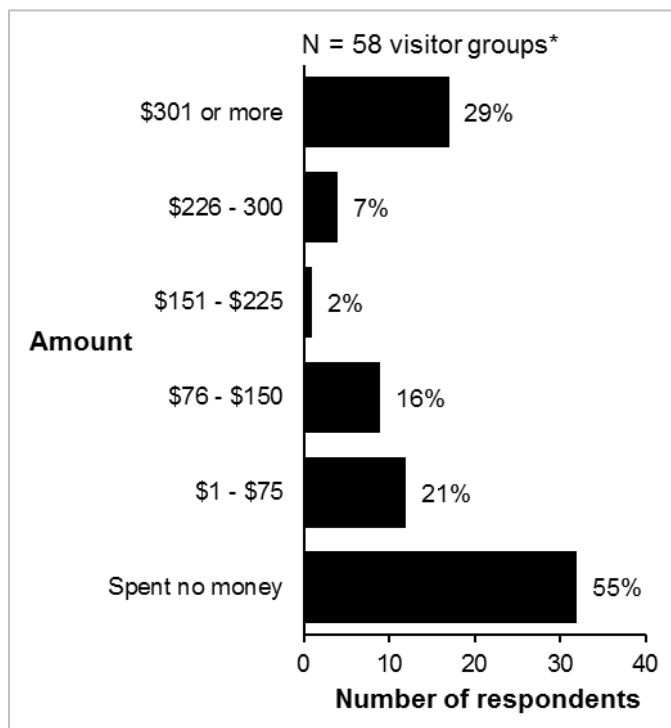


Figure 74. Total expenditures outside of park and nearby area.

Evaluations of Park Experience and Post-Trip Experience

Aspects most liked about visit to Biscayne NP

Question 18

What did you like most about your visit to Biscayne NP? (open-ended)

Results (Table 20)

- Table 20 shows the aspects visitor groups liked most about their visit. The most frequently mentioned aspects were:
 - “Nature” (mentioned 29 times)
 - “Beautiful” (mentioned 27 times)
 - “Scenery” (mentioned 23 times)

Table 20. Aspects most liked about visit. N = 364 comments. Some visitor groups may have made more than one comment.

Aspect	Frequency of times mentioned
Nature	29
Beautiful	27
Scenery	23
Boating	22
Clear water	22
Fishing	20
Cleanliness	19
Wildlife	14
Friendly and helpful staff	11
Organized boat ramp	11
Spending time with family/friends	11
Being outdoors	10
Easy access	10
Peaceful	10
Trails	10
Quiet	8
Relaxing	8

Table 20 (continued). Aspects most liked about visit. N = 364 comments. Some visitor groups may have made more than one comment.

Aspect	Frequency of times mentioned
The ocean	8
Movie	6
Weather	6
Snorkeling	5
Walkway	5
Boat tour	4
Ecology	4
Marine life	4
Not crowded	4
Ranger information	4
Visitor/Nature Center	4
Boca Chita	3
Reefs	3
Stiltsville	3
Swimming	3
Water activities	3
Diving	2
Marina	2
No vehicle fee	2
Safe	2
Shade available	2
Shipwreck information	2
Other	18

Aspects least liked about visit to Biscayne National Park

Question 19

What did you like least about your visit to Biscayne NP? (open-ended)

Results (Table 21)

- Table 21 shows the aspects visitor groups least liked about their visit. The most frequently mentioned aspects were:
 - “Nothing” (mentioned 50 times)
 - “Parking” (mentioned 14 times)
 - “Trash” (mentioned 13 times)

Table 21. Aspects least liked about visit. N = 181 comments. Some visitor groups may have made more than one comment.

Aspect	Frequency of times mentioned
Parking	14
Trash	13
Mosquitos	12
Need more boat ramps	11
Heat	9
Reckless boaters	9
Flies	7
Closes too early	5
No cell service	5
Too expensive	5
Boat tour availability	4
Loud music	4
Boat rental availability	3
Facilities need renovation	3
Liked everything	3
Not enough time spent in park	3
Rain	3
Too crowded	3

Table 21 (continued). Aspects least liked about visit. N = 181 comments. Some visitor groups may have made more than one comment.

Aspect	Frequency of times mentioned
Boca Chita	2
Cleanliness	2
Gift shop	2
Got lost getting to park	2
Law enforcement training exercise	2
Need more security	2
No area to swim	2
People not following laws/regulations	2
Pollution	2
Poor water quality	2
Thunderstorm	2
Too many boaters	2
Other Comments	41

Expectations for visit to Biscayne National Park

Question 20

Did your visit to Biscayne NP, on this trip, meet your expectations?

Results (Figure 75)

- 92% of visitor groups had their expectations met during their visit to Biscayne NP on this trip.

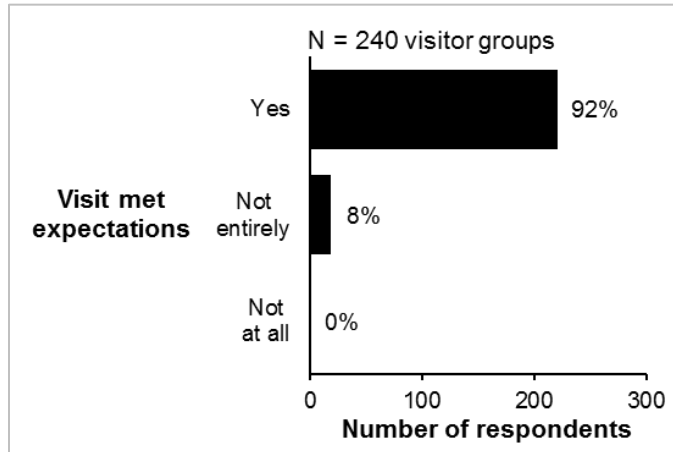


Figure 75. Meeting of expectations for visit on this trip.

Question 20

If NOT ENTIRELY, please explain (open-ended).

Results (Table 22)

- Table 22 shows the reasons visitor groups' expectation were "not entirely" met. The most frequently mentioned reasons were:
 - "Trash" (mentioned five times)
 - "Boat trips not running" (mentioned three times)
 - "Wanted to go out in/on water" (mentioned three times)

Table 22. Reasons expectations were "not entirely" met. N = 23 comments. Some visitor groups may have made more than one comment.

Reason	Frequency of times mentioned
Trash	5
Boat trips not running	3
Wanted to go out in/on water	3
Lack of marine life	2
Mosquitos	2
Other comments	8

Importance of use of personal electronic devices

Question 16

How important to you was it during your visit to Biscayne NP to use personal electronic devices to do each of the following, and how would you rate the quality of the service in Biscayne NP required to do each?

Rating choices:

- 1 = Extremely important
- 2 = Very important
- 3 = Moderately important
- 4 = Slightly important
- 5 = Not at all important

Results (Figure 76)

- Figure 76 shows the combined proportions of “extremely important” and “very important” ratings for use of a personal electronic device.
- The uses that received the highest combined proportions of “extremely important” and “very important” ratings were:
 - 45% Make/receive cell phone call
 - 39% Send/receive text message
- Of those who responded “Other” (N = 45), responses included:
 - “GPS”

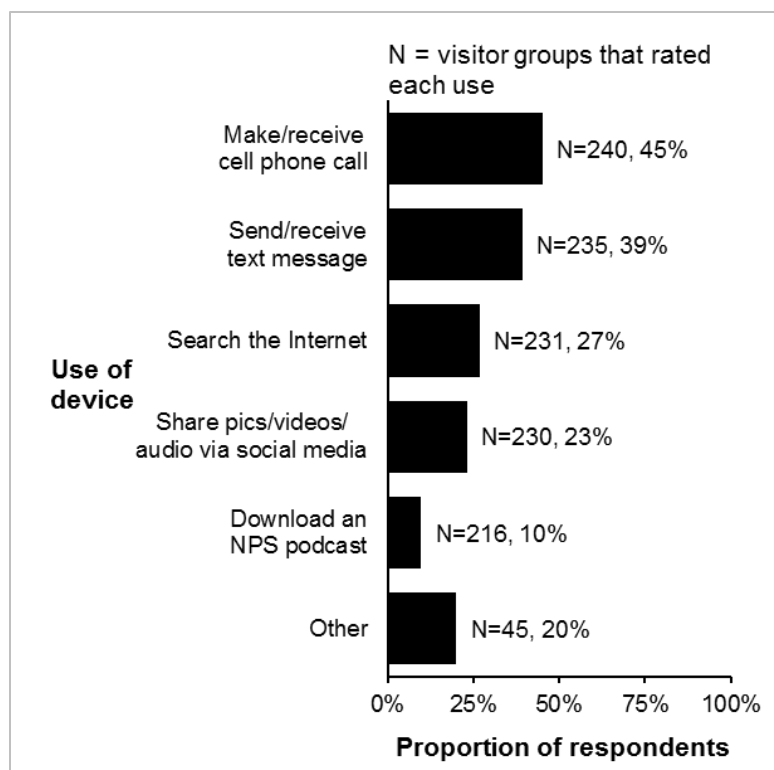


Figure 76. Importance of using personal electronic devices.

Quality of service required to use personal electronic devices

Question 16

How important to you was it during your visit to Biscayne NP to use personal electronic devices to do each of the following, and how would you rate the quality of the service in Biscayne NP required to do each?

Rating choices:

- 1 = Very good
- 2 = Good
- 3 = Average
- 4 = Poor
- 5 = No service at all
- 99 = Not applicable

Results (Figure 77)

- Figure 77 shows the combined proportions of “very good” and “good” ratings for quality of service required use a personal electronic device.
- The uses that received the highest combined proportions of “very good” and “good” ratings for quality of service required were:
 - 59% Send/receive text message
 - 55% Make/receive phone call
- Of those who responded “Other” (N = 19), uses included:
 - “GPS”
 - “Pictures”
 - “Weather”

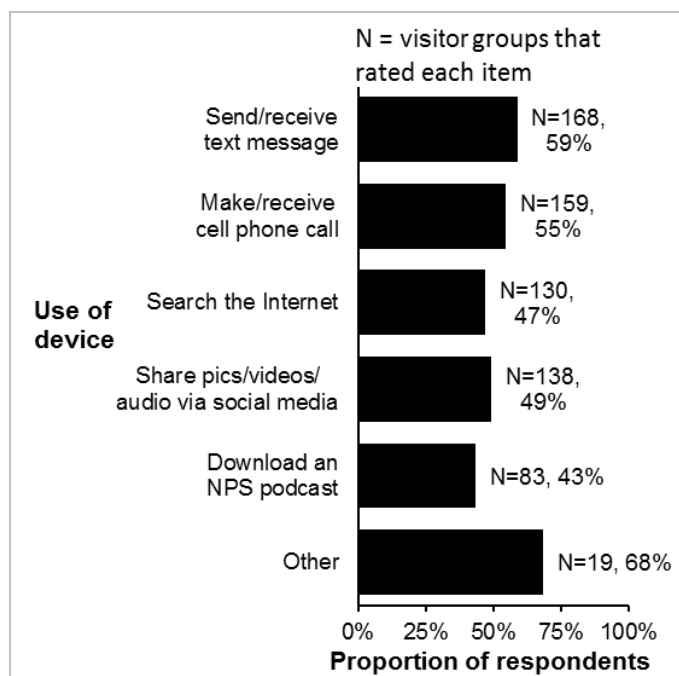


Figure 77. Quality of service required to use personal electronic devices.

Mean scores of importance and quality ratings for use of personal electronic devices

Question 16

- Figure 78 shows the mean scores of importance and quality ratings for all uses of personal electronic devices.
- Most uses of personal electronic devices were rated relatively unimportant, with the exception of “make/receive cell phone call,” which was rated relatively important.
- The quality of service required was rated relatively good for each use.

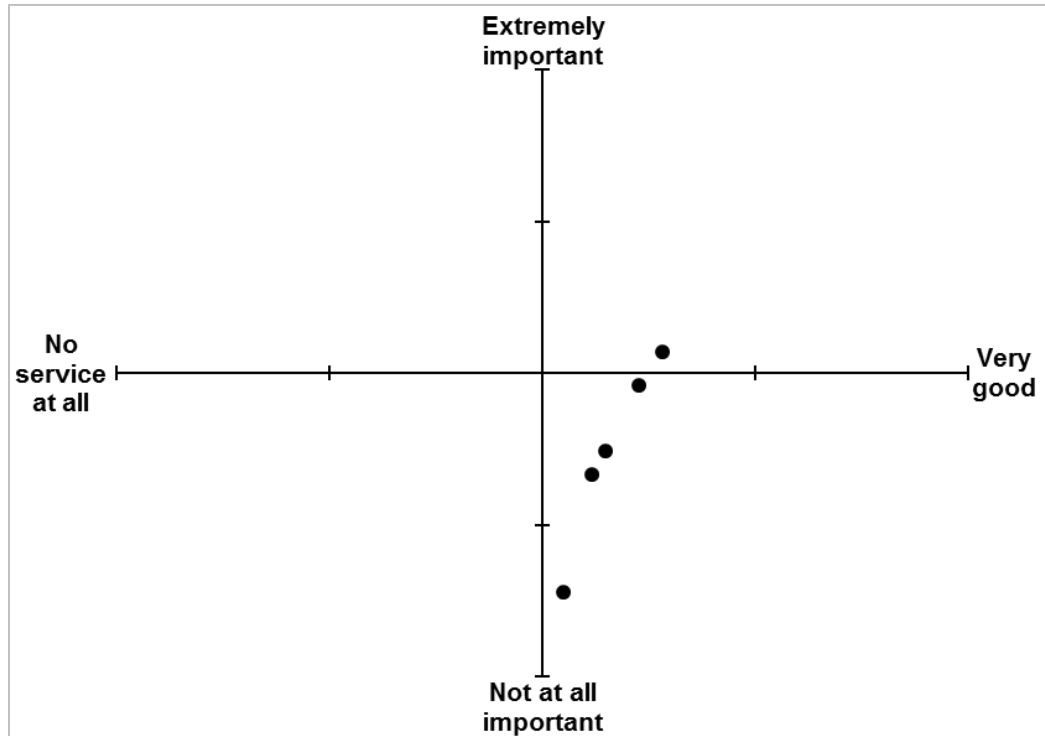


Figure 78. Mean scores for importance and quality ratings for use of personal electronic devices.

Safety

Question 21

To what extent do you agree or disagree with each of the following statements?

Biscayne NP is a safe place to visit.

Results (Figure 79)

- 55% of visitor groups strongly agreed that Biscayne NP is a safe place to visit.
- 41% of visitor groups agreed with this statement.

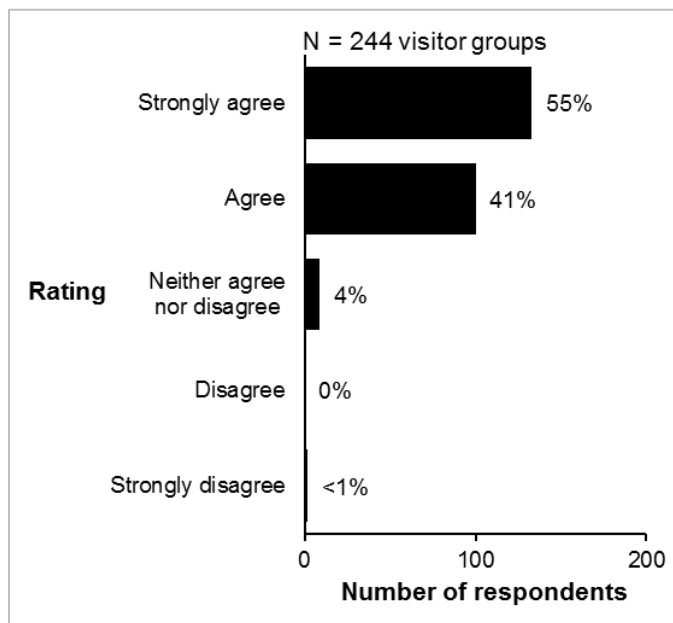


Figure 79. Extent of agreement/disagreement with statement on safety of Biscayne National Park.

Crowding

Question 21

To what extent do you agree or disagree with each of the following statements?

Biscayne NP is too crowded.

Results (Figure 80)

- 33% of visitor groups disagreed that Biscayne NP is too crowded.
- 30% of visitor groups neither agreed nor disagreed with this statement.

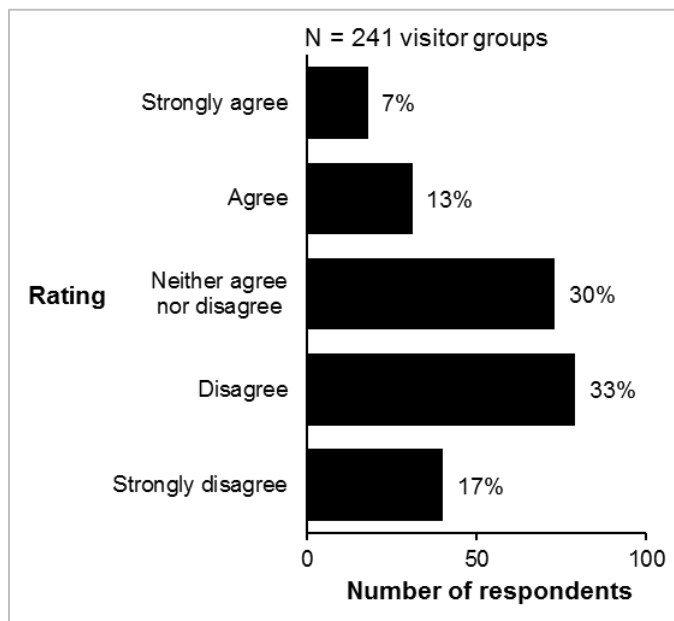


Figure 80. Extent of agreement/disagreement with statement on crowding in Biscayne National Park.

Condition of natural resources

Question 21

To what extent do you agree or disagree with each of the following statements?

Natural resources in Biscayne NP are in pristine condition.

Results (Figure 81)

- 45% of visitor groups agreed that natural resources in Biscayne NP are in pristine condition.
- 23% of visitor groups neither agreed nor disagreed with this statement.

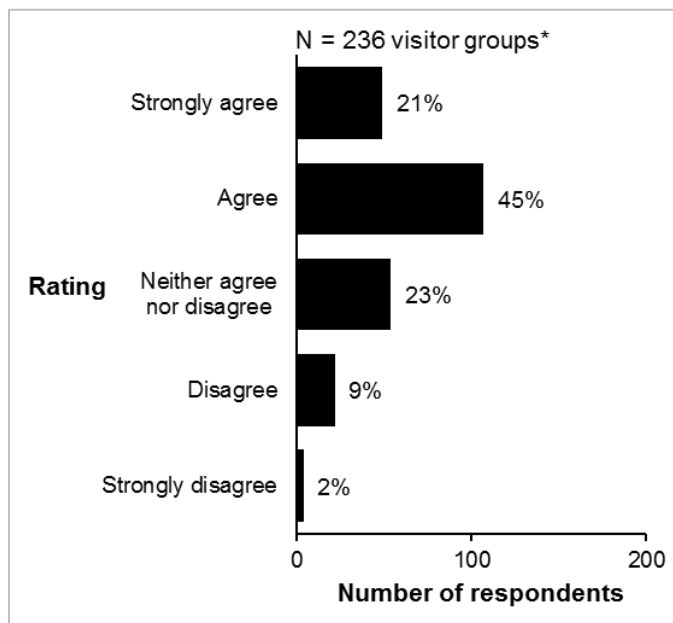


Figure 81. Extent of agreement/disagreement with statement on condition of natural resources in Biscayne National Park.

Vandalism and crime

Question 21

To what extent do you agree or disagree with each of the following statements?

Vandalism and crime are not a problem in Biscayne National Park.

Results (Figure 82)

- 47% of visitor groups agreed that vandalism and crime are not a problem in Biscayne National Park.
- 20% of visitor groups neither agreed nor disagreed with this statement.

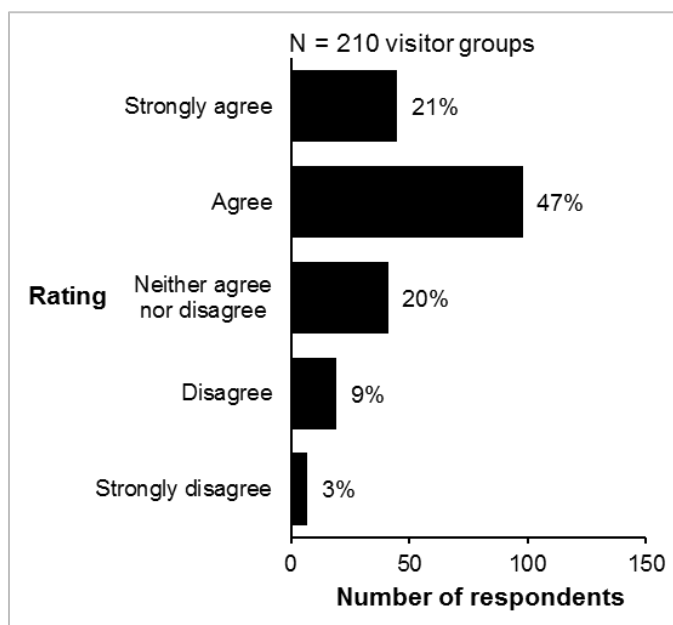


Figure 82. Extent of agreement/disagreement with statement on vandalism and crime in Biscayne National Park.

Accessibility

Question 21

To what extent do you agree or disagree with each of the following statements?

Biscayne NP is not accessible to persons with physical disabilities.

Results (Figure 83)

- 37% of visitor groups disagreed that Biscayne NP is not accessible to persons with physical disabilities.
- 32% of visitor groups neither agreed nor disagreed with this statement.

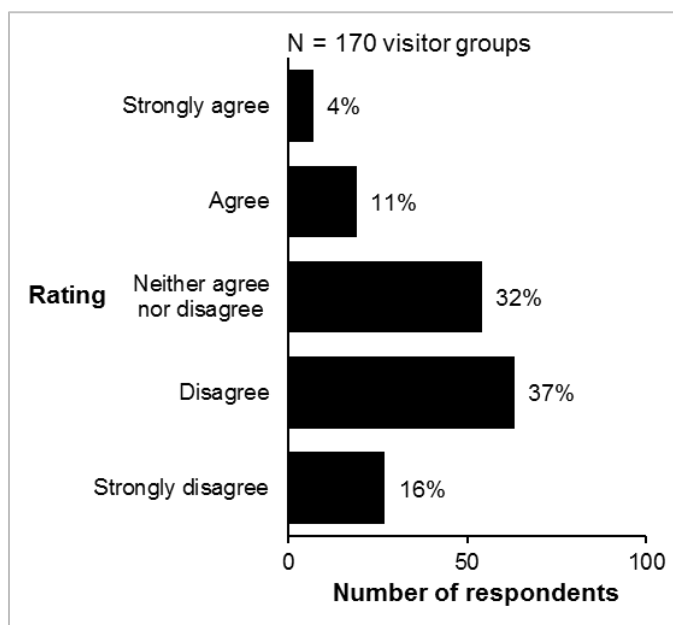


Figure 83. Extent of agreement/disagreement with statement on accessibility of Biscayne NP.

Condition of historical and cultural features

Question 21

To what extent do you agree or disagree with each of the following statements?

Historical and cultural features in Biscayne NP are well maintained/preserved.

Results (Figure 84)

- 45% of visitor groups agreed that historical and cultural features in Biscayne NP are well maintained/preserved.
- 27% of visitor groups neither agreed nor disagreed with this statement.

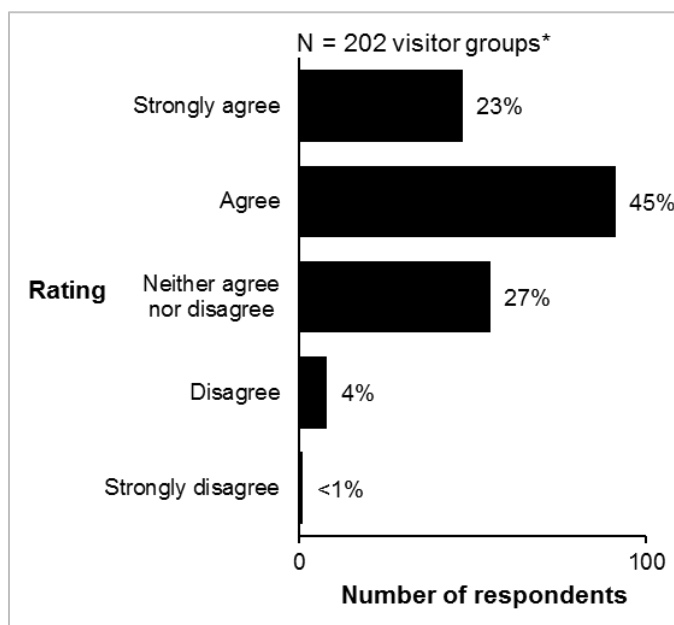


Figure 84. Extent of agreement/disagreement with statement on condition of historical and cultural features in Biscayne NP.

Development of adjacent areas

Question 21

To what extent do you agree or disagree with each of the following statements?

Development of adjacent areas detracts from visitors' experiences at Biscayne NP.

Results (Figure 85)

- 33% of visitor groups disagreed that development of adjacent areas detracts from visitors' experiences at Biscayne NP.
- 31% of visitor groups neither agreed nor disagreed with this statement.

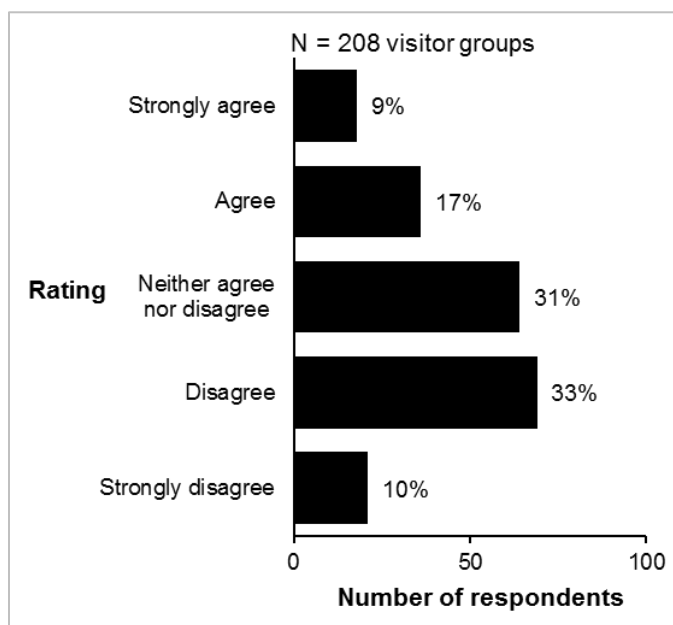


Figure 85. Extent of agreement/disagreement with statement on development of adjacent areas near Biscayne National Park.

Quality of facilities, services, and recreational opportunities

Question 22

How would you rate the quality of the facilities, services, and recreational opportunities in Biscayne National Park?

Rating choices:

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

Results (Figure 86)

- Figure 86 shows the combined proportions of “very good” and “good” ratings for facilities, services, and recreational opportunities.
- The facilities, services, and recreational opportunities that received the highest combined proportions of “very good” and “good” ratings were:
 - 87% Outdoor recreation
 - 84% Visitor Center
 - 75% Walkways, trails, and road
 - 75% Assistance from park employees
 - 75% Park map or brochure
- The facilities, services, and recreational opportunities that received the lowest combined proportions of “very good” and “good” ratings were:
 - 61% Value for entrance fee paid
 - 60% Restrooms
 - 53% Commercial services in the park
- Figure 88 through Figure 98 show ratings for each facility, program, or recreational opportunity.

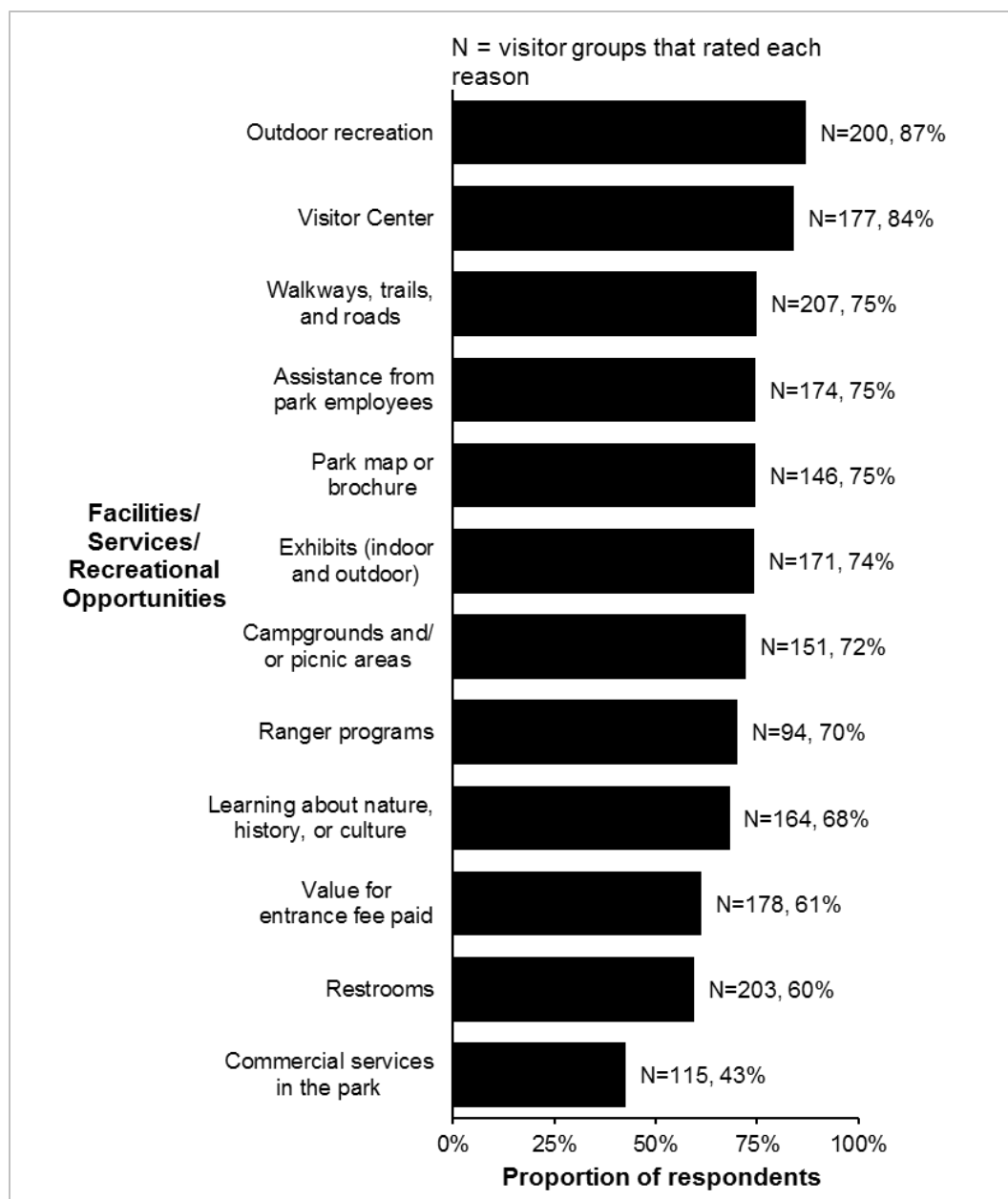


Figure 86. Quality of facilities, services, and recreational opportunities.

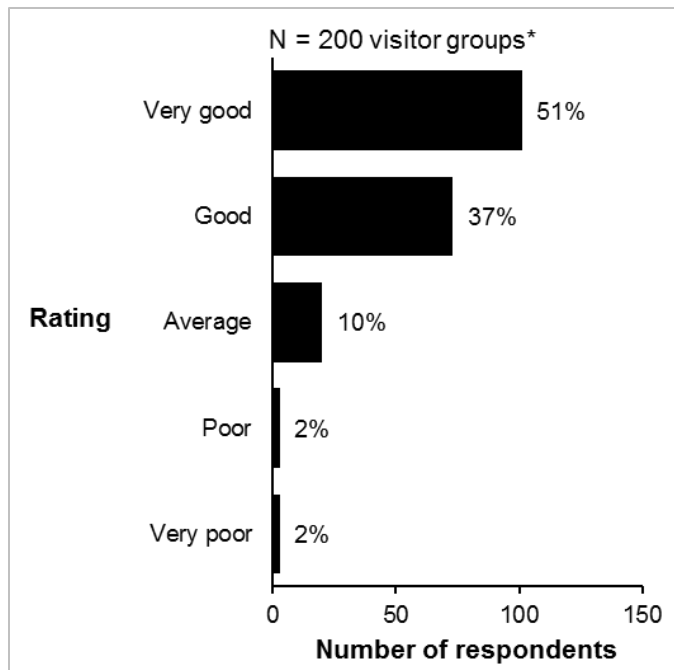


Figure 87. Quality of outdoor recreation (sightseeing, camping, bicycling, boating, hiking, etc.).

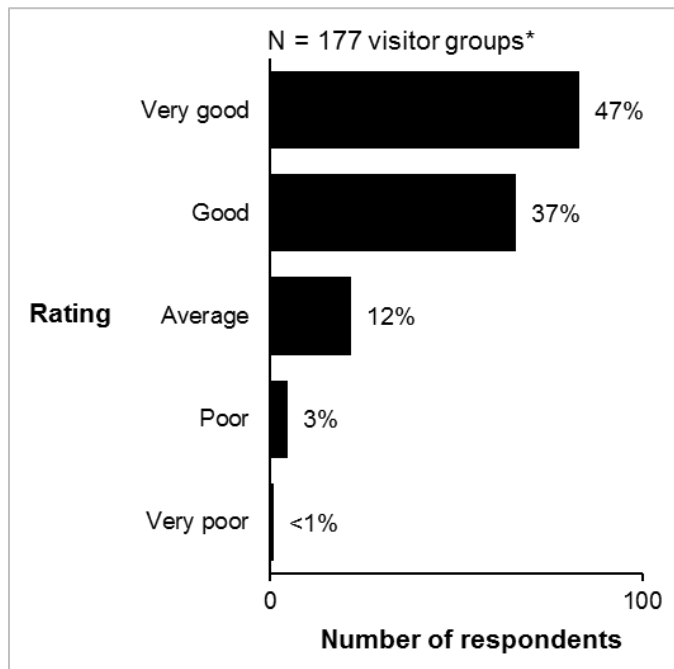


Figure 88. Quality of Visitor Center.

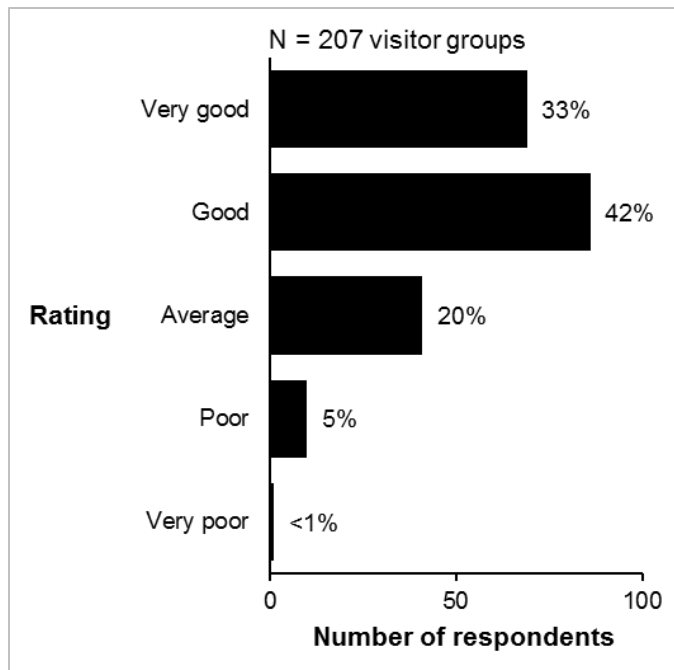


Figure 89. Quality of walkways, trails, and roads.

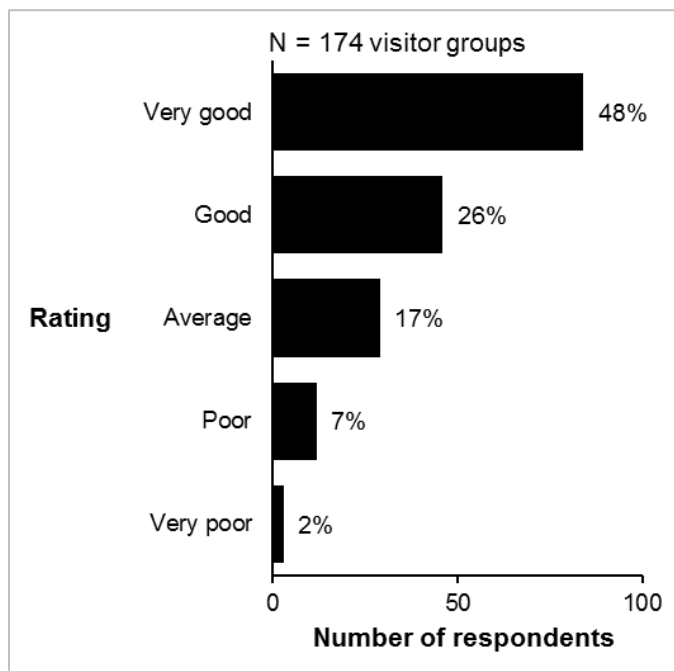


Figure 90. Quality of assistance from park employees.

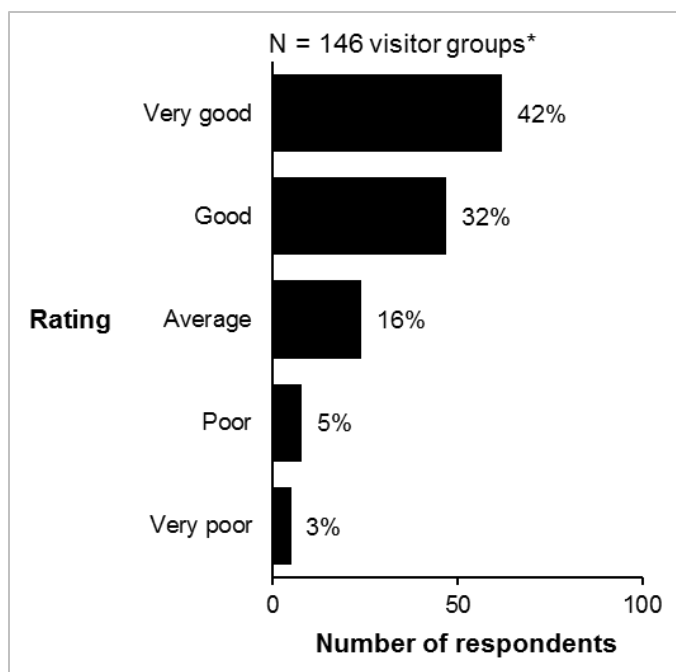


Figure 91. Quality of park map or brochure.

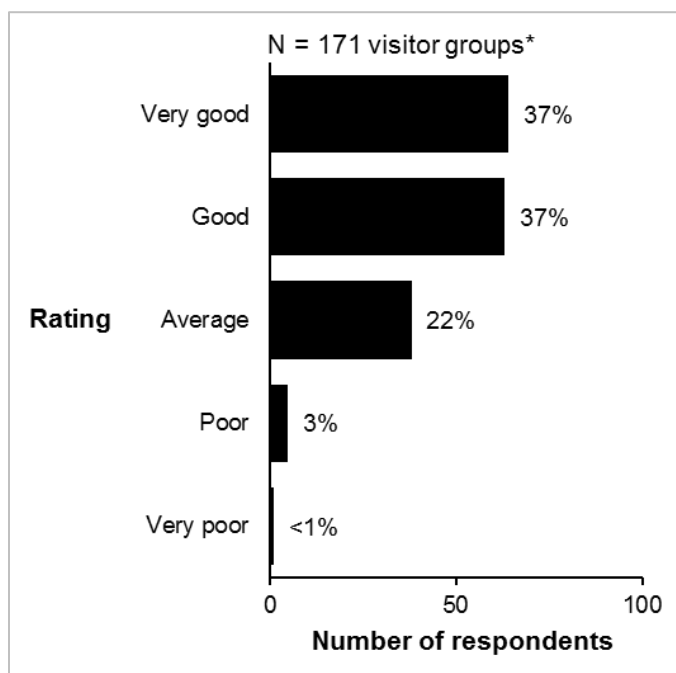


Figure 92. Quality of exhibits (indoor and outdoor).

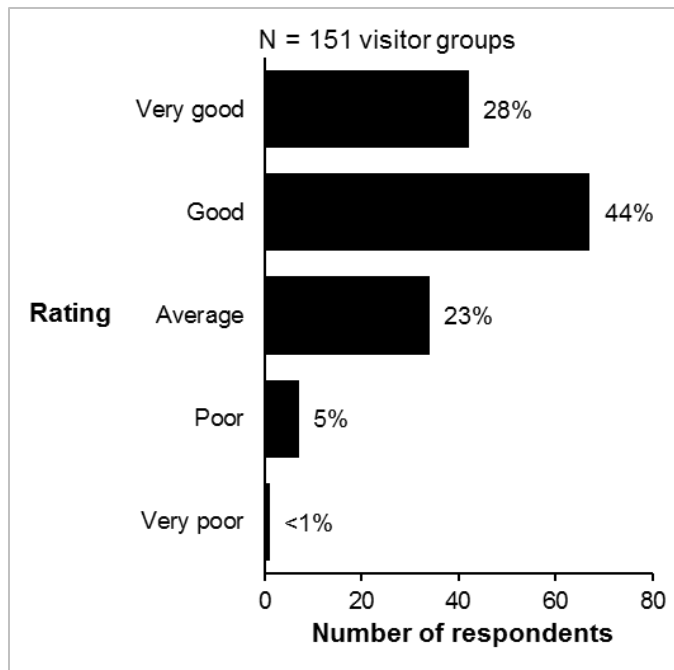


Figure 93. Quality of campgrounds and/or picnic areas.

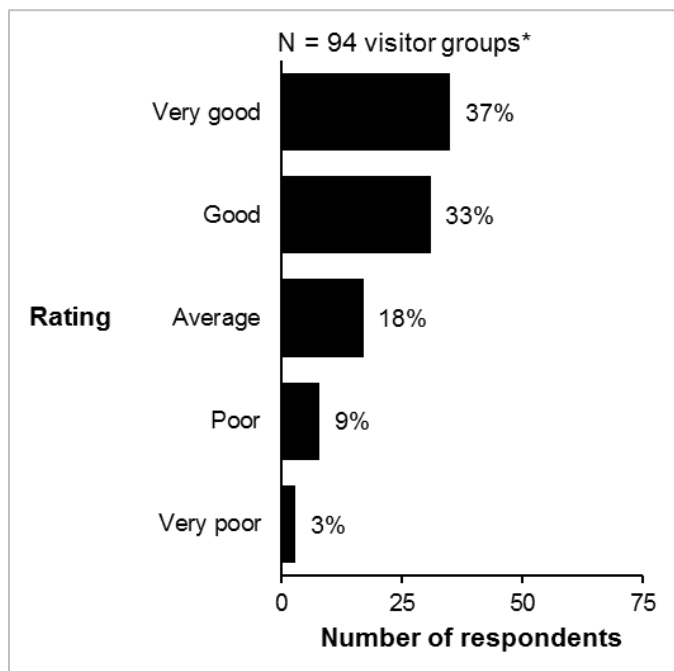


Figure 94. Quality of ranger programs.

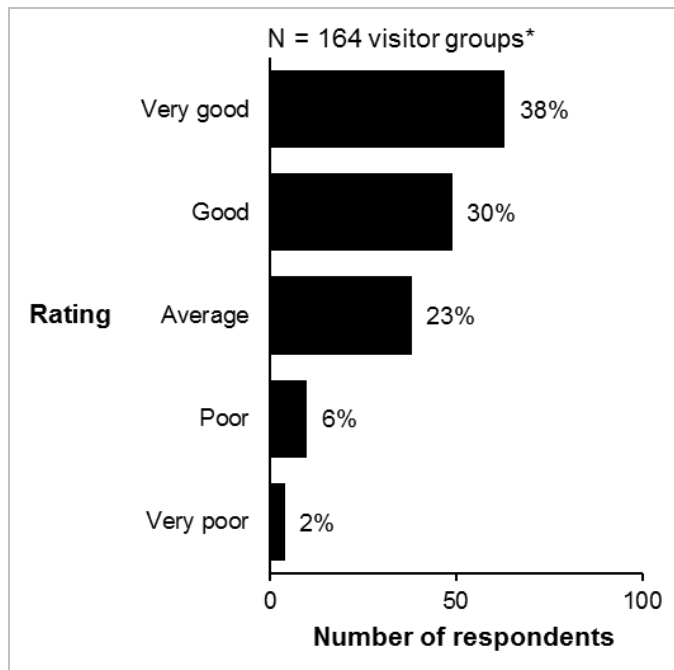


Figure 95. Quality learning about nature, history, or culture.

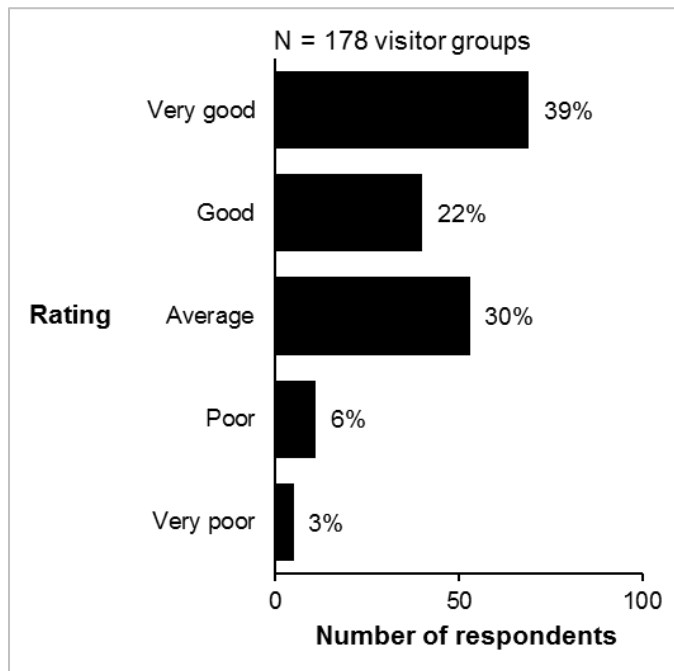


Figure 96. Quality of value for entrance fee paid.

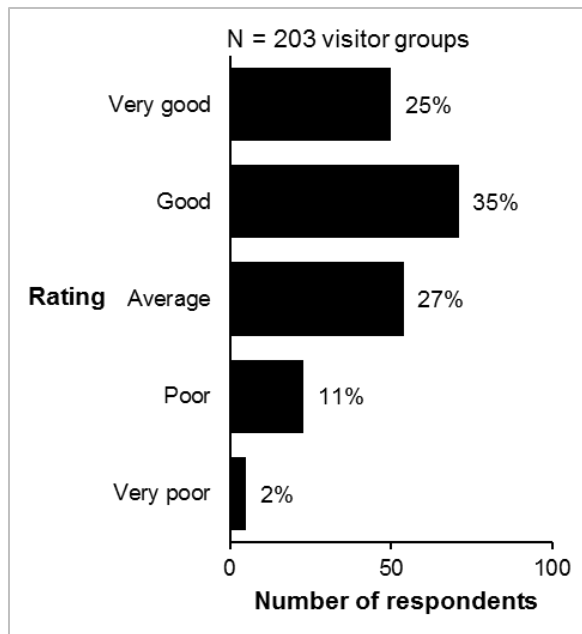


Figure 97. Quality of restrooms.

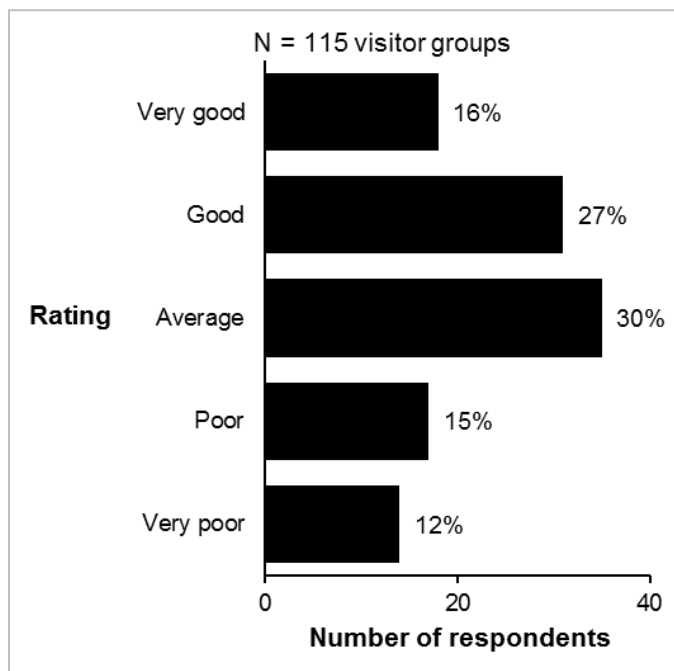


Figure 98. Quality of commercial services in the park.

Services used

Question 22

Please specify services used.

Results (Table 23)

- Table 23 shows the services used by visitor groups. The most frequently mentioned services were:
 - “Boat ramp” (mentioned seven times)
 - “Restrooms” (mentioned seven times)

Table 23. Services used. N = 57 comments. Some visitor groups may have made more than one comment.

Service	Frequency of times mentioned
Boat ramp	7
Restrooms	7
None	6
Gift shop	5
Marina	4
Dining	3
Picnic area	3
Visitor Center	3
Ranger assistance	2
Tour	2
Walkways	2
Other comments	13

Overall quality of facilities, services, and recreational opportunities

Question 23

Overall, how would you rate the quality of facilities, services, and recreational opportunities in Biscayne NP?

Results (Figure 99)

- 43% of visitor groups rated the quality of facilities, services, and recreational opportunities overall as “very good”.
- 44% of visitor groups rated the quality of facilities, services, and recreational opportunities overall as “good”.

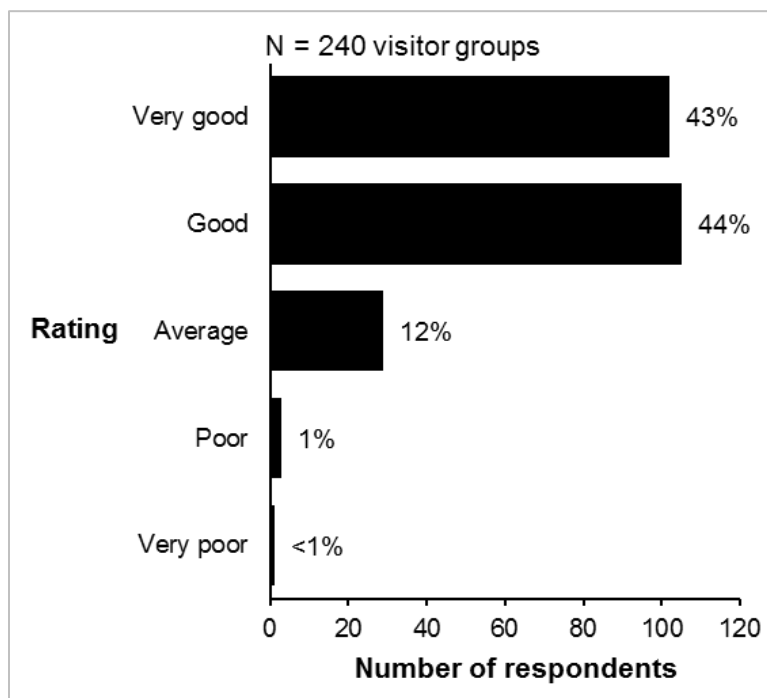


Figure 99. Overall rating of facilities, services, and recreational opportunities.

Opinion of national significance of park

Question 24

This park was established because of its significance to the nation. In your opinion, what is the national significance of this park?

Results (Table 24)

- Table 24 shows what visitor groups believed the national significance of Biscayne NP to be. The items most frequently mentioned were:
 - “Preservation” (mentioned 54 times)
 - “Reef ecosystem” (mentioned 31 times)

Table 24. Opinions of national significance of park. N = 271 comments. Some visitor groups may have made more than one comment.

Significance	Frequency of times mentioned
Preservation	54
Reef ecosystem	31
Natural resources	21
Unique body of water	20
A nice place to visit	12
Conservation	11
Education	10
History	10
Wildlife	10
Fishing	8
Recreation	8
Access to nature close to urban area	7
Ecosystem	7
Mangroves	7
Nature	6
Boating	5
Not significant	4
A National Park	3

Table 24 (continued). Opinions of national significance of park. N = 271 comments. Some visitor groups may have made more than one comment.

Significance	Frequency of times mentioned
Culture	3
Marine life	3
Lighthouse	2
Natural history	2
Don't know	7
Other	20

Visitor Comments

Additional comments

Question 40

Is there anything else you would like to tell us about Biscayne National Park's facilities, services, or recreational opportunities?

Results (Table 25)

- Table 25 shows additional comments from visitor groups. Most of the comments were positive:
 - “Enjoyed visit” (mentioned 13 times)
 - “Wonderful park” (mentioned eight times)
 - “Friendly and helpful staff/rangers” (mentioned six times)
- The most frequently mentioned negative comments were:
 - “Do not close fishing and snorkeling” (mentioned seven times)
 - “Should close later in the day” (mentioned four times)
 - “More police and coast guard supervision” (mentioned four times)

Table 25. Additional comments about facilities, services, or recreational opportunities. N = 108 comments. Some visitor groups may have made more than one comment.

Category	Comment	Frequency of times mentioned
Personnel	Friendly and helpful staff/rangers	6
	More police and coast guard supervision	4
	Need more rangers	3
Policies and management	Do not close fishing and snorkeling	6
	Should close later in day	4
	Better enforcement of fishing/boating regulations	2
	Need better enforcement of laws	2
	Stricter laws for environmental pollution	2
Interpretive and information services	Need better cell service	2
	More information available	1
Facilities and maintenance	Facilities need maintenance/updating	4
	Well maintained	4

Table 25 (continued). Additional comments about facilities, services, or recreational opportunities. N = 108 comments. Some visitor groups may have made more than one comment.

Category	Comment	Frequency of times mentioned
Facilities and maintenance (continued)	More boat ramps	2
	Need to be more kid-friendly	1
General comments	Enjoyed visit	13
	Wonderful park	8
	Great experience	3
	Tours are great	2
	We love NPS	2
	Other comments	37

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Appendix 1. Descriptive Statistics

Table 26 shows the mean, median, and standard deviation for those variables for which measures of central tendency can be computed.

Table 26. Mean/median/standard deviation of selected variables.

Question number	Description	N	Mean	Median	Standard deviation
Q01	Number of adults in group	247	3.07	2	2.20
Q01	Number of children in group	106	2.24	2	1.52
Q01	Group size	247	4.03	3	2.91
Q03	Number of people per vehicle	139	3.47	3	1.78
Q04	Number of hours traveled to get from home to park	235	2.65	1	4.77
Q04	Number of miles traveled to get from home to park	218	286.41	12	1248.93
Q05	Number of days entering/reentering the park	224	1.10	1	0.34
Q06	Number of hours in the park	235	5.28	4	9.51
Q06	Number of days in the park	17	2.32	2	1.33
Q09	Importance to visit at NPS site	231	2.85 ³	3	1.51
Q09	Importance to spend time with friends/family	242	1.55	1	0.92

³ Responses for Question 9 were on a scale from 1=Extremely Important to 5=Not at all Important.

Table 26 (continued). Mean/median/standard deviation of selected variables.

Question number	Description	N	Mean	Median	Standard deviation
Q09	Importance to view wildlife or natural scenery	242	1.95	2	1.12
Q09	Importance to get physical exercise	230	3.00	3	1.28
Q09	Importance to relax	240	1.83	2	0.96
Q09	Importance to learn more about American history and culture	232	3.39	3	1.33
Q09	Importance to learn more about nature	235	2.71	2	1.34
Q09	Importance to attend a special event	200	4.47	5	1.11
Q09	Importance to hear the sounds of nature/quiet	237	2.57	2	1.37
Q09	Importance to experience solitude	231	3.11	3	1.48
Q09	Importance to be outdoors	243	1.60	1	0.90
Q09	Importance to view dark night sky/stars	218	3.93	5	1.43
Q09	Importance of "other"	63	2.98	2	1.96
Q16	Importance of being able to use personal electronic devices to make/receive cell phone call	240	2.86 ⁴	3	1.60

⁴ Responses for Question 16 on Importance were on a scale from 1=Extremely Important to 5=Not at all Important.

Table 26 (continued). Mean/median/standard deviation of selected variables.

Question number	Description	N	Mean	Median	Standard deviation
Q16	Importance of being able to use personal electronic devices to send/receive text message	235	3.08	3	1.61
Q16	Importance of being able to use personal electronic devices to search the internet	230	3.67	4	1.47
Q16	Importance of being able to use personal electronic devices to share pics/videos/audio via social media	231	3.51	4	1.50
Q16	Importance of being able to use personal electronic devices to download an NPS podcast	216	4.44	5	1.11
Q16	Importance of being able to use personal electronic devices to "other"	46	4.17	5	1.55
Q16	Quality of being able to use personal electronic devices to make/receive cell phone call	168	2.44 ⁵	2	1.22

⁵ Responses for Question 16 on Quality were on a scale from 1=Very Good to 5=Not Service at All.

Table 26 (continued). Mean/median/standard deviation of selected variables.

Question number	Description	N	Mean	Median	Standard deviation
Q16	Quality of being able to use personal electronic devices to send/receive text message	159	2.55	2	1.22
Q16	Quality of being able to use personal electronic devices to search the internet	138	2.77	3	1.28
Q16	Quality of being able to use personal electronic devices to share pics/videos/audio via social media	130	2.71	3	1.28
Q16	Quality of being able to use personal electronic devices to download an NPS podcast	83	2.90	3	1.29
Q16	Quality of being able to use personal electronic devices to "other"	19	2.16	2	0.69
Q21	Biscayne NP is a safe place to visit	244	1.52 ⁶	1	0.65
Q21	Biscayne NP is too crowded	241	3.38	3	1.13

⁶ Responses for Question 21 were on a scale from 1=Strongly Agree to 5=Strongly Disagree.

Table 26 (continued). Mean/median/standard deviation of selected variables.

Question number	Description	N	Mean	Median	Standard deviation
Q21	Natural resources in Biscayne NP are in pristine condition	236	2.26	2	0.95
Q21	Vandalism and crime are not a problem in Biscayne National Park	210	2.26	2	1.00
Q21	Biscayne NP is not accessible to persons with physical disabilities	170	3.49	4	1.02
Q21	Historic and cultural features in Biscayne NP are well maintained/preserved	202	2.13	2	0.83
Q21	Development of adjacent areas detracts from visitors' experiences at Biscayne National Park	208	3.19	3	1.11
Q22	Quality of Visitor Center	177	1.73 ⁷	2	0.83
Q22	Quality of exhibits	171	1.92	2	0.87
Q22	Quality of restrooms	203	2.32	2	1.04
Q22	Quality of walkways, trails, and roads	207	1.98	2	0.88

⁷ Responses for Question 22 and 23 were on a scale from 1=Very Good to 5=Very Poor.

Table 26 (continued). Mean/median/standard deviation of selected variables.

Question number	Description	N	Mean	Median	Standard deviation
Q22	Quality of campgrounds and/or picnic areas	151	2.06	2	0.87
Q22	Quality of assistance from park employees	174	1.87	2	1.03
Q22	Quality of park map or brochure	146	1.95	2	1.06
Q22	Quality of ranger programs	94	2.07	2	1.09
Q22	Quality of value for entrance fee paid	178	2.12	2	1.09
Q22	Quality of commercial services in the park	115	2.81	3	1.23
Q22	Quality of learning about nature, history, or culture	164	2.04	2	1.04
Q22	Quality of outdoor recreation	200	1.67	1	0.83
Q23	Quality of the park overall	240	1.73	2	0.75
Q26	Nights backcountry camping in Biscayne National Park	2	2.00	2	1.41
Q26	Nights camping in Biscayne National Park	5	1.80	1	1.10
Q26	Nights camping outside Biscayne National Park	1	1.00	1	—

Table 26 (continued). Mean/median/standard deviation of selected variables.

Question number	Description	N	Mean	Median	Standard deviation
Q26	Nights lodging outside Biscayne National Park	32	4.50	3	3.46
Q26	Nights in other accommodations	12	4.50	4	3.15
Q26	Total nights in overnight accommodations	47	4.51	3	3.75
Q29	Total length of package tour	3	0.87	1	0.23
Q29	Total cost per person of package tour	3	218.00	175	213.77
Q29	Total number of people on the package tour	3	3.67	4	0.58
Q30	Expenditures on gas and oil	176	105.06	60	189.53
Q30	Expenditures on rental cars	21	318.48	250	244.45
Q30	Expenditures on taxis, shuttles, and public transportation	10	153.70	95	232.39
Q30	Expenditures on restaurants and bars	78	185.82	80	287.17
Q30	Expenditures on groceries and convenience foods	137	75.16	50	90.83
Q30	Expenditures on hotels, motels, resorts	31	665.48	300	858.87
Q30	Expenditures on specialty lodging	6	1193.67	638	1152.28
Q30	Expenditures on camping fees	2	35.00	35	21.21

Table 26 (continued). Mean/median/standard deviation of selected variables.

Question number	Description	N	Mean	Median	Standard deviation
Q30	Expenditures on recreation and entertainment expenses	12	145.67	50	274.55
Q30	Expenditures on souvenirs, clothing, supplies, other retail	35	134.29	50	205.95
Q30	Expenditures on equipment rental	5	252.00	100	325.99
Q30	Expenditures on guides and tours	60	161.43	16	341.95
Q30	Expenditures on other	29	187.90	45	559.19
Q30	Total expenditures in park and nearby area	202	526.86	163	1234.30
Q30	Expenditures outside the area	41	1127.00	150	1809.03
Q31	Adults covered by expenses	209	2.96	2	2.25
Q32	Children covered by expenses	93	3.26	2	10.24
Q32	Visitors covered by expenses	209	4.41	3	7.93
Q32	Visitors who split expenses	190	1.92	2	1.21
Q32	Current age: respondent	238	48.19	49	14.04
Q33	Biscayne NP visits past 12 months: respondent	232	13.68	5	37.27
Q33	NPS site visits past 12 months: respondent	209	5.23	2	8.08

Table 26 (continued). Mean/median/standard deviation of selected variables.

Question number	Description	N	Mean	Median	Standard deviation
Q33	Current age: all group members	807	37.62	39	19.47
Q33	Biscayne NP visits past 12 months: all group members	749	9.63	3	24.93
Q33	NPS site visits past 12 months: all group members	547	4.50	2	13.46

Appendix 2. The Questionnaire



Social Science Program
National Park Service
U.S. Department of the Interior

Biscayne National Park

Visitor Study



2016

Paperwork Reduction and Privacy Act Statements: The Paperwork Reduction Act requires us to tell you why we are collecting this information, how we will use it, and whether or not you have to respond. This information will be used by the National Park Service as authorized by 16 USC 5931 §201. We will use this information to evaluate visitor services and facilities managed by the National Park Service. Your responses are voluntary and anonymous. Your name and address have been requested for follow-up purposes only. At the completion of this collection all names and personal information will be destroyed and in no way be connected with the results of this survey. A Federal agency may not conduct or sponsor and you are not required to respond to, a collection of information unless it displays a currently valid OMB Control Number.

Burden Estimate: We estimate that it will take an average of 20 minutes to complete this questionnaire. You may send comments concerning the burden estimates or any aspect of this information collection to the Social Science Program Chief, National Park Service, 1201 Oakridge Drive, Fort Collins, CO, 80525-5596; nps_nrss_social_science@nps.gov (email).



United States Department of the Interior

NATIONAL PARK SERVICE

1849 C Street, N.W.
Washington, DC 20240



Summer, 2016

Dear National Park Visitor:

Thank you for participating in this study. Our goal is to learn about the expectations, opinions, and interests of visitors to the National Park System. This information will assist us in our efforts to better manage this park and to serve you.

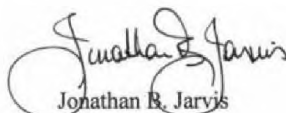
This questionnaire is only being given to a select number of visitors, so your participation is very important. It should take about 20 minutes to complete after your visit.

When your visit is over, the adult in your group who will have the next birthday should complete this questionnaire. Seal it in the postage-paid envelope provided and drop it in any U.S. Postal Service mailbox.

If you have any questions, please contact the Social Science Program Chief, National Park Service, 1201 Oakridge Drive, Fort Collins, CO, 80525-5596; nps_nrss_social_science@nps.gov (email).

We appreciate your help.

Sincerely,


Jonathan B. Jarvis
Director

RETURN PROCEDURE

At the end of your visit:

1. Please have the adult in your group (at least 18 years old) who has the next birthday complete this questionnaire. That will help give us a statistically reliable sample.
2. For questions that use circles (O), please mark your answer by filling in the circle with **black or blue ink**. Please do not use pencil.

Like this: ● Not like this:    

3. Seal it in the postage-paid envelope provided.
4. Drop it in a U.S. Postal Service mailbox.

DIRECTIONS

Please have the adult in your group (at least 18 years old) having the next birthday complete this questionnaire.

In this questionnaire, your **personal group** is defined as you and anyone with whom you visited Biscayne National Park on this trip, such as a spouse, family, friends, etc. This does not include the larger group that you might have traveled with, such as a school, church, scout, or tour group.

A **visit** is defined as the day in which you were contacted to complete this questionnaire. A **trip** is defined as the total extent of time away from your personal residence that could include multiple visits to Biscayne National Park.

A. Trip Description

1. Including yourself, how many people were in your personal group during your visit to Biscayne National Park (NP) on the day you were contacted for this survey?

_____ Number of adults (18 years or older)

_____ Number of children (under 18 years)

2. What type of group were you with, during your visit to Biscayne NP on the day you were contacted for this survey? Please mark (●) **one**.
 - ☐ Alone
 - ☐ Friends
 - ☐ Family
 - ☐ Family and friends
 - ☐ Other (Please specify) _____

3. Please indicate all of the forms of transportation you personally used to travel from your home to Biscayne NP, on this trip. Please mark (●) **all that apply**.
- ☐ Car, truck, or SUV (Number of people in vehicle, including you) _____
 - ☐ Recreational vehicle or motorhome
 - ☐ Airplane
 - ☐ Tour bus or tour van
 - ☐ City bus or subway
 - ☐ Train or long-distance passenger bus
 - ☐ Water-based transportation (Please mark (●) **all that apply**.)
 - ☐ Cruise ship
 - ☐ Ferry
 - ☐ Tour boat
 - ☐ Other water-based mode (Please specify) _____
 - ☐ Bicycle
 - ☐ Walk/hike
 - ☐ Other (Please specify) _____
4. Approximately how many hours and miles from home did you travel one way to get to Biscayne NP on this trip?
- _____ Number of hours
- AND**
- _____ Number of miles
5. On how many days during this trip did you enter or re-enter Biscayne NP? If you were on a day trip or if you camped or lodged inside the park and did not leave the park boundaries for the entire length of your stay, then answer 1 day.
- _____ Number of days entering or re-entering Biscayne NP
- OR**
- ☐ Don't know/Not sure

6. On this trip, how much total time did you spend within Biscayne NP?

_____ Number of hours, if a day trip

_____ Number of days, if greater than 1 day

B. Trip Planning and Motivations

7. Prior to this trip, how did you obtain information about Biscayne NP? Please mark (•) all that apply.

- ☐ Did not obtain information prior to this visit
- ☐ Previous visits
- ☐ Friends/relatives/word of mouth
- ☐ Inquiry to park via phone, mail, or email
- ☐ Biscayne NP website (nps.gov/bisc)
- ☐ Other website (Please specify) _____
- ☐ Local businesses (hotels, motels, restaurants, etc.)
- ☐ Maps/brochures
- ☐ Newspaper/magazine articles
- ☐ Other units of the National Park System (NPS)
- ☐ School class/program
- ☐ Social media (such as Facebook, Twitter, etc.)
- ☐ State welcome center/visitors bureau/chamber of commerce
- ☐ Television/radio programs/DVDs
- ☐ Travel guides/tour books (such as AAA, etc.)
- ☐ Other (Please specify) _____

8. Did you have the information about Biscayne NP you needed on this trip?

Please mark (•) one.

- ☐ Yes
- ☐ No (Please specify information you needed but didn't have on this trip.)

9. How important to you was each of the following reasons for visiting Biscayne NP on this trip? Please mark (●) **one for each row**.

	Extremely Important	Very Important	Moderately Important	Slightly Important	Not at All Important
To visit a National Park Service site	☐	☐	☐	☐	☐
To spend time with friends/family	☐	☐	☐	☐	☐
To view wildlife or natural scenery	☐	☐	☐	☐	☐
To get physical exercise	☐	☐	☐	☐	☐
To relax	☐	☐	☐	☐	☐
To learn more about American history and culture	☐	☐	☐	☐	☐
To learn more about nature	☐	☐	☐	☐	☐
To attend a special event (Please specify) _____	☐	☐	☐	☐	☐
To hear the sounds of nature/quiet	☐	☐	☐	☐	☐
To experience solitude	☐	☐	☐	☐	☐
To be outdoors	☐	☐	☐	☐	☐
To view dark night sky/stars	☐	☐	☐	☐	☐
Other (Please specify) _____	☐	☐	☐	☐	☐

10. Of the reasons listed in Question 9, which was the most important reason for you to visit Biscayne NP on this trip?

C. Park Activities, Programs, and Services

11. On this trip, in which of the following activities did you personally participate within Biscayne NP? Please mark (●) **all that apply**.
- ☐ Viewing wildlife, natural features, scenery, wildflowers, etc.
 - ☐ Creative arts (photography/drawing/painting/writing)
 - ☐ Visiting a cultural or historic site
 - ☐ Nature study
 - ☐ Driving for pleasure
 - ☐ Walking/short hike (less than 1 hour)
 - ☐ Day hiking (1 hour or more)
 - ☐ Bicycling
 - ☐ Running/jogging
 - ☐ Recreational fishing
 - ☐ Commercial fishing
 - ☐ Non-motorized water travel (rafting, kayaking, canoeing, tubing, etc.)
Please specify: _____
 - ☐ Motorized water travel (boating, jet skiing, etc.)
Please specify: _____
 - ☐ Camping in developed sites
 - ☐ Family gathering/reunion
 - ☐ Picnicking
 - ☐ Water play (swimming, snorkeling, scuba diving, etc.)
Please specify: _____
 - ☐ Other (Please specify) _____
 - ☐ Other (Please specify) _____
12. Of the activities listed in Question 11, which was your primary activity during your visit to Biscayne NP on the day you were contacted for this survey?
- _____

OR

- ☐ I did not have a primary activity on this trip to Biscayne NP.

13. On this trip, in which of the following programs and services did you personally participate within Biscayne NP? Please mark (●) **all that apply**.
- ☐ Attending a ranger-led activity, such as a tour or talk
 - ☐ Talking informally with a ranger
 - ☐ Viewing outdoor exhibits
 - ☐ Viewing indoor exhibits
 - ☐ Attending a cultural demonstration or performance
 - ☐ Reading the park brochure or newspaper
 - ☐ Going to the Visitor Center
 - ☐ Watching movies or videos about the park
 - ☐ Participating with a child in your group in the Junior Ranger program
 - ☐ Obtaining National Park passport stamp
 - ☐ Listening to an audio tour or podcast
 - ☐ Using a smart phone app specific to Biscayne NP
 - ☐ Other (Please specify) _____
14. On this visit to Biscayne NP, did you learn anything from park staff, programs, and/or exhibits about American history, nature, and/or culture? Please mark (●) **one**.
- ☐ Yes (Please specify subjects you learned about.)

 - ☐ No
15. If you were to visit Biscayne NP in the future, are there specific subjects you would like to learn about? Please mark (●) **one**.
- ☐ Yes (Please specify subjects you would like to learn about.)

 - ☐ No

16. How important to you was it during your visit to Biscayne NP to use personal electronic devices to do each of the following, and how would you rate the quality of the service in Biscayne NP required to do each? For each item, please mark (●) **one for importance and one for quality of service needed.**

	IMPORTANCE					QUALITY OF SERVICE REQUIRED					
	Extremely Important	Very Important	Moderately Important	Slightly Important	Not at all Important	Very Good	Good	Average	Poor	No Service at All	Not Applicable
Make/receive cell phone call	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Send/receive text message	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Search the Internet	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Share pics/videos/audio via social media (Facebook, Twitter, etc.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Download an NPS podcast	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other (Please specify)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

17. a) Did anyone in your personal group have a physical condition that made it difficult to access or participate in park activities or services, during your visit to Biscayne NP? Please mark (●) **one**.

☐ Yes

☐ No → **Go to Question 18**

- b) If YES, what activities, services, or facilities did the person(s) have difficulty participating in or accessing? Please be specific.

- c) Because of the physical condition, which specified difficulties did the person(s) have? Please mark (●) **all that apply**.

☐ Hearing (difficulty hearing ranger programs, bus drivers, audio-visual exhibits or programs, or information desk staff even with hearing aid)

☐ Visual (difficulty in seeing exhibits, directional signs, visual aids that are part of programs even with prescribed glasses or due to blindness)

☐ Mobility (difficulty in accessing facilities, services, or programs even with walking aid and/or wheelchairs)

☐ Other (Please specify) _____

18. What did you like most about your visit to Biscayne NP?

19. What did you like least about your visit to Biscayne NP?

20. Did your visit to Biscayne NP, on this trip, meet your expectations? Please mark (●) **one**.

☐ Yes

☐ Not entirely (Please explain)

☐ Not at all (Please explain)

D. Park Management

21. To what extent do you agree or disagree with each of the following statements? Please mark (●) **one for each row**.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know / Not Sure
Biscayne NP is a safe place to visit	☐	☐	☐	☐	☐	☐
Biscayne NP is too crowded	☐	☐	☐	☐	☐	☐
Natural resources in Biscayne NP are in pristine condition	☐	☐	☐	☐	☐	☐
Vandalism and crime are not a problem in Biscayne NP	☐	☐	☐	☐	☐	☐
Biscayne NP is not accessible to persons with physical disabilities	☐	☐	☐	☐	☐	☐
Historical and cultural features in Biscayne NP are well maintained/preserved	☐	☐	☐	☐	☐	☐
Development of adjacent areas detracts from visitors' experiences at Biscayne NP	☐	☐	☐	☐	☐	☐

22. How would you rate the quality of the facilities, services, and recreational opportunities in Biscayne NP? Please mark (●) **one for each row**.

	Very Good	Good	Average	Poor	Very Poor	Not Used or Not Available
Park Facilities						
Visitor center	☐	☐	☐	☐	☐	☐
Exhibits (indoor and outdoor)	☐	☐	☐	☐	☐	☐
Restrooms	☐	☐	☐	☐	☐	☐
Walkways, trails, and roads	☐	☐	☐	☐	☐	☐
Campgrounds and/or picnic areas	☐	☐	☐	☐	☐	☐
Visitor Services						
Assistance from park employees	☐	☐	☐	☐	☐	☐
Park map or brochure	☐	☐	☐	☐	☐	☐
Ranger programs	☐	☐	☐	☐	☐	☐
Value for entrance fee paid	☐	☐	☐	☐	☐	☐
Commercial services in the park (food, lodging, gifts, rental, etc.)	☐	☐	☐	☐	☐	☐
Please specify services used: _____						
Recreational Opportunities						
Learning about nature, history, or culture	☐	☐	☐	☐	☐	☐
Outdoor recreation (sightseeing, camping, bicycling, boating, hiking, etc.)	☐	☐	☐	☐	☐	☐

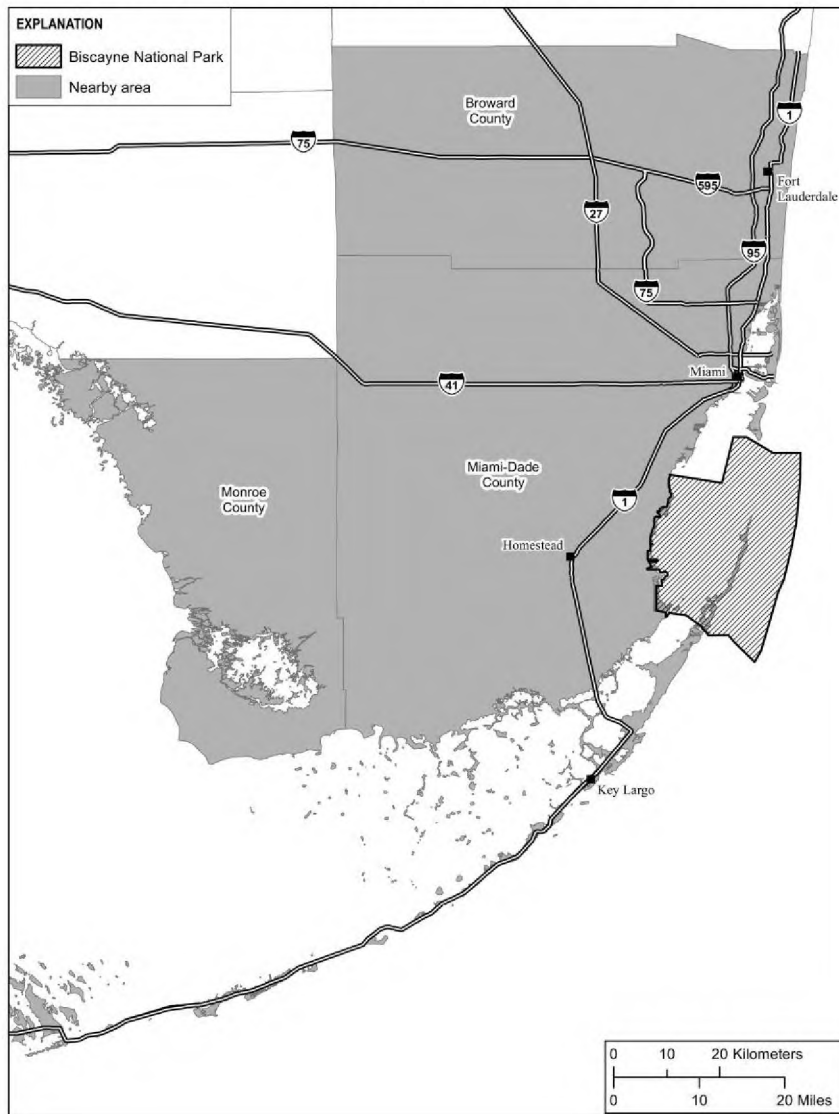
23. Overall, how would you rate the quality of the facilities, services, and recreational opportunities in Biscayne NP? Please mark (●) **one**.

- ☐ Very good
☐ Good
☐ Average
☐ Poor
☐ Very poor

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

E. Expenditures

Please refer to the map when answering the questions in this section.



25. Do you live within the nearby area (within the shaded area shown on the map)? Please mark (●) **one**.
- ☐ Yes
- ☐ No

26. a) On this trip to Biscayne NP and the nearby area, did you stay overnight away from your permanent residence either inside Biscayne NP or within the nearby area (within the shaded area of the map on p.13)? Please mark (●) **one**.

☐ Yes

☐ No → Go to Question 27

- b) If **YES**, please list the number of nights you stayed in Biscayne NP and/or in the nearby area (within the shaded area of the map on p.13) on this trip.

Accommodation	Number of Nights
Backcountry camping in Biscayne NP	_____
Camping in Biscayne NP	_____
Camping outside Biscayne NP	_____
Lodging outside Biscayne NP	_____
Other accommodations (e.g., friends/relatives)	_____

27. Was this trip to Biscayne NP? Please mark (●) **one**.

☐ Your primary or sole purpose of your trip away from home?

☐ One of several equally important destinations on your trip away from home?

→ Was one or more of the other equally important destinations located within the nearby area (within the shaded area of the map on p.13)? Please mark (●) **one**.

☐ Yes

☐ No

☐ Just an incidental or spur of the moment stop on your trip away from home?

→ Was your primary destination located within the nearby area (within the shaded area of the map on p.13)? Please mark (●) **one**.

☐ Yes

☐ No

28. Did you visit any other National Park Service sites on your trip away from home? Please mark (●) **one**.

☐ Yes (Please specify)

☐ No

29. a) Did you or anyone in your personal group purchase any package tours that included at least some meals, some lodging, and/or some transportation while on this trip?

☐ Yes

☐ No → **Go to Question 30**

b) What was the total length of your package tour(s)? # _____ days

c) What was the total cost per person for the package tour(s)?

\$ _____ per person

d) How many people in your personal group were on the package tour(s)?

_____ people

- e) Which of the following were included in the package tour(s) as part of your visit to Biscayne NP and the nearby area (within the shaded area of the map on p.13)? Please mark (●) **all that apply**.

	Items included in your package tour(s) as part of your visit to Biscayne NP and nearby area
Local air transportation	☐
Local ground transportation	☐
Local water transportation	☐
Local lodging	☐
Meals	☐
Guide services	☐
Fees (e.g., fishing licenses)	☐
Gear (e.g., camping equipment, bikes, kayaks)	☐
Admission to events or attractions	☐
Other (Please specify)	☐

30. Please estimate how much you and your personal group with whom you shared expenses (e.g., other family members, traveling companions) spent both inside Biscayne NP and within the nearby area (within the shaded area of the map on p.13) during your time in the nearby area. If you reported expenditures for package tours, please only include individual expenses that were NOT part of your package tour(s).

If you no longer have your receipts, estimate as closely as you can how much you and your group spent. Please enter 0 (zero) if you did not spend any money in a particular category.

Note: Residents living within the highlighted area of the map should only include expenditures that were directly related to this trip to Biscayne NP.

Expenses	Amount spent in Biscayne NP and nearby area
Gas and oil (e.g., auto, RV, boat, etc.)	\$ _____
Rental cars	\$ _____
Taxis, shuttles, and public transportation	\$ _____
Restaurants and bars	\$ _____
Groceries and convenience foods	\$ _____
Hotels, motels, resorts	\$ _____
Specialty lodging (e.g., B&Bs, hostels, cabins, vacation rentals)	\$ _____
Camping fees (tent, RV)	\$ _____
Recreation and entertainment expenses (e.g., movies, bowling, miniature golf, etc.)	\$ _____
Souvenirs, clothing, supplies, other retail	\$ _____
Equipment rental	\$ _____
Boat rental	\$ _____
Guide, tour, and marina fees	\$ _____
Other (Please list) _____	\$ _____

OR

☐ Don't know/Not sure

31. For you and any members of your personal group with whom you shared expenses, please record any additional money spent outside of the map area during your trip away from home (for example, travel or food expenditures).
- \$ _____
- OR**
- ☐ Don't know/Not sure
32. a) Including yourself, how many people in your personal group were covered by the expenses for this trip away from home?
- _____ Number of adults (18 years or over)
- _____ Number of children (under 18 years)
- b) Including yourself, how many people in your group split these trip expenses?
- _____ Number of people

F. Background

33. For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide the following information. (If you don't know the answer, enter "DK.")

	Current Age	U.S. ZIP code or name of country other than U.S.	Number of visits to Biscayne NP in last 12 months, including this trip	Number of visits to other NPS sites in the last 12 months
Yourself				
Member #2				
Member #3				
Member #4				
Member #5				
Member #6				
Member #7				

34. For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide the following information. Please mark (●) one for each group member, including yourself, for gender and Hispanic or Latino. (If you don't know the answer, mark (●) "Don't know.")

Additional members of your personal group

	Yourself	#2	#3	#4	#5	#6	#7
Male	☐	☐	☐	☐	☐	☐	☐
Female	☐	☐	☐	☐	☐	☐	☐
Hispanic or Latino	☐	☐	☐	☐	☐	☐	☐
Not Hispanic or Latino	☐	☐	☐	☐	☐	☐	☐
Don't know	☐	☐	☐	☐	☐	☐	☐

35. For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, please provide the following information. Please mark (●) **one or more for each group member, including yourself. (If you don't know the answer, mark (●) "Don't know.")**

	Yourself	#2	#3	#4	#5	#6	#7
American Indian or Alaska Native	☐	☐	☐	☐	☐	☐	☐
Asian	☐	☐	☐	☐	☐	☐	☐
Black or African American	☐	☐	☐	☐	☐	☐	☐
Native Hawaiian or other Pacific Islander	☐	☐	☐	☐	☐	☐	☐
White	☐	☐	☐	☐	☐	☐	☐
Don't know	—	☐	☐	☐	☐	☐	☐

36. For your personal group during your visit to Biscayne NP on the day you were contacted for this survey, what is the highest level of formal education completed by each member of your group? Please mark (●) **one for each group member, including yourself. (If you don't know the answer, mark (●) "Don't know.")**

	Yourself	#2	#3	#4	#5	#6	#7
Less than high school	☐	☐	☐	☐	☐	☐	☐
Some high school	☐	☐	☐	☐	☐	☐	☐
High school graduate or GED	☐	☐	☐	☐	☐	☐	☐
Some college, business, or trade school	☐	☐	☐	☐	☐	☐	☐
College, business, or trade school graduate	☐	☐	☐	☐	☐	☐	☐
Some graduate school	☐	☐	☐	☐	☐	☐	☐
Master's, doctoral, or professional degree	☐	☐	☐	☐	☐	☐	☐
Don't know	—	☐	☐	☐	☐	☐	☐

37. Which category best represents your annual household income? Please mark (●) **one**.

- ☐ Less than \$24,999
☐ \$25,000-\$34,999
☐ \$35,000-\$49,999
☐ \$50,000-\$74,999
☐ \$75,000-\$99,999
☐ \$100,000-\$149,999
☐ \$150,000-\$199,999
☐ \$200,000 or more
☐ Do not wish to answer

38. Including yourself, how many people are in your household?

_____ Number of people

39. When visiting an area such as Biscayne NP, what language do you personally prefer to use? Please mark (●) **one for speaking and one for reading**.

	Speaking	Reading
English	☐	☐
Spanish	☐	☐
Other (Please specify) _____	☐	☐

40. Is there anything else you would like to tell us about Biscayne NP's facilities, services, or recreational opportunities?

Thank you for your help!

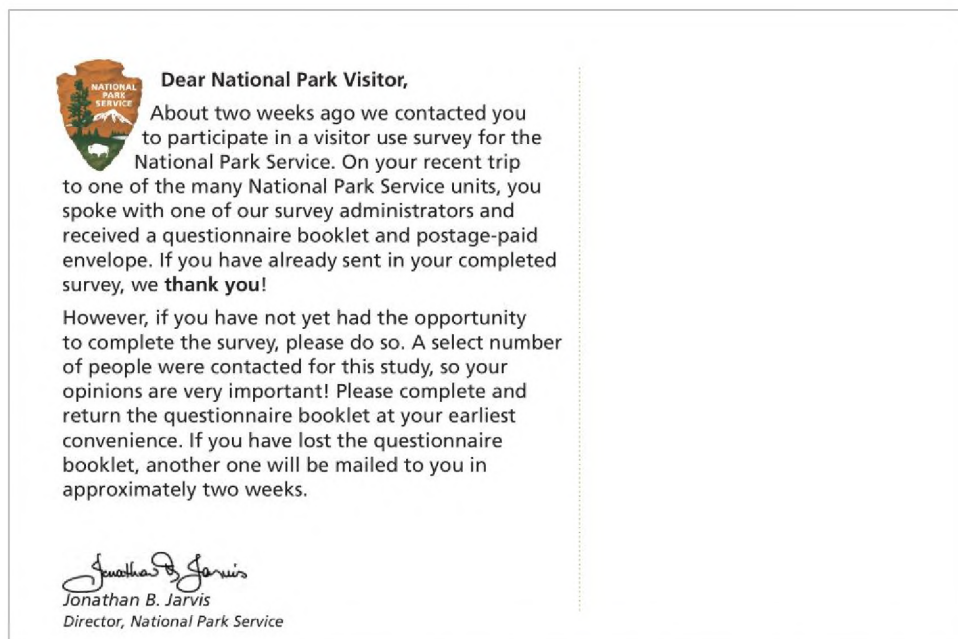
**Please place the questionnaire in the
envelope provided and drop it in any U.S.
Postal Service mailbox.**

SURVEY ID NUMBER:



Appendix 3. The Thank You/Reminder Postcard

Postcard mailed to respondents with United States addresses



Postcard mailed to respondents with international addresses



National Park Service

**SURVEY
REMINDER:**
Your input
is very
important!



Dear National Park Visitor,

About two weeks ago we contacted you to participate in a visitor use survey for the National Park Service. On your recent trip to one of the many National Park Service units, you spoke with one of our survey administrators and received a questionnaire booklet and postage-paid envelope. If you have already sent in your completed survey, we **thank you!**

However, if you have not yet had the opportunity to complete the survey, please do so. A select number of people were contacted for this study, so your opinions are very important! Please complete and return the questionnaire booklet at your earliest convenience. If you have lost the questionnaire booklet or need additional postage to mail it to the US, another booklet will be mailed to you in approximately two weeks and will include a return envelope with international postage.

Thank you,

The National Park Service

Appendix 4. The Replacement Mailing Cover Letter



UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

1849 C. Street, N.W.
Washington, DC 20240



Dear [Name],

About a month ago, on your recent trip to one of the many National Park Service units, we asked you to participate in a visitor survey for the National Park Service. The National Park Service would like to thank you for agreeing to participate in this visitor study. We selected only a small number of visitors to participate in this study; therefore, the return of each questionnaire is very important. The information you provide will help us better manage the National Park Service, and better serve you, our visitor.

If you have already returned your questionnaire, we would like to thank you. However, if you have not, we are asking you to please return it by mail today. Since we have not received yours as of the date we mailed this letter, we have included a replacement questionnaire for your convenience, along with a postage paid envelope.

If you have any questions regarding your questionnaire, please contact the Social Science Program Chief, National Park Service, 1201 Oakridge Drive, Fort Collins, CO, 80525-5596; nps_nrss_social_science@nps.gov (email).

Thank you for your help with this important study. Your opinions matter, and we appreciate you sharing them with us. They will help us improve the management of the National Park Service.

Sincerely,

Jonathan B. Jarvis
Director
National Park Service

Appendix 5. Detailed Sampling Procedures

Site Schematics

As noted, the SEM visitor survey was administered at three locations in Biscayne NP and at three mainland marinas owned and operated by Miami-Dade County. A specific survey administration point was identified at each sampling location, based on analysis of aerial site photos and onsite scoping, and recommendations from the Biscayne NP point of contact for this study. The survey administration point for each location was denoted with a yellow star in a site schematic provided to the survey administrator assigned to the site, with the exception of Boca Chita and Elliot Keys, where surveys were administered at individual boat slips (Figure 100 through Figure 105). For the Dante Fascell Visitor Center and the Miami-Dade County's public marinas, a red line was used in each site schematic to denote the boundary or point at which visitor groups traveling on foot or in vehicles were considered to have entered the survey area and were intercepted for the survey. A red arrow was used in each of these site schematics to denote the direction of travel in which visitor groups were intercepted. For Boca Chita Key and Elliot Key, a yellow star indicates the starting position of the survey administrator when survey administration began, and a yellow line is used to indicate the direction of travel the survey administrator followed when asking visitor groups to participate in the survey. For the Miami-Dade County marinas, a yellow line was used in each site schematic to indicate the area within which the survey administrator traveled to intercept visitor groups arriving to private boat launches.

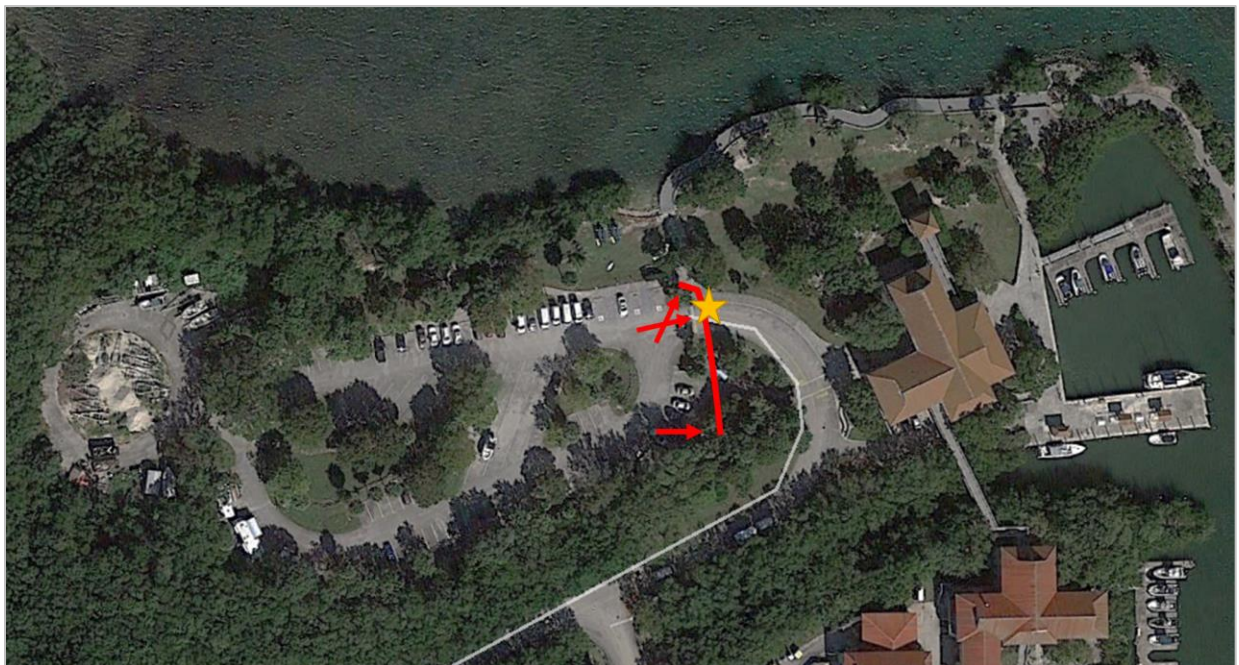


Figure 100. Dante Fascell Visitor Center sampling location.

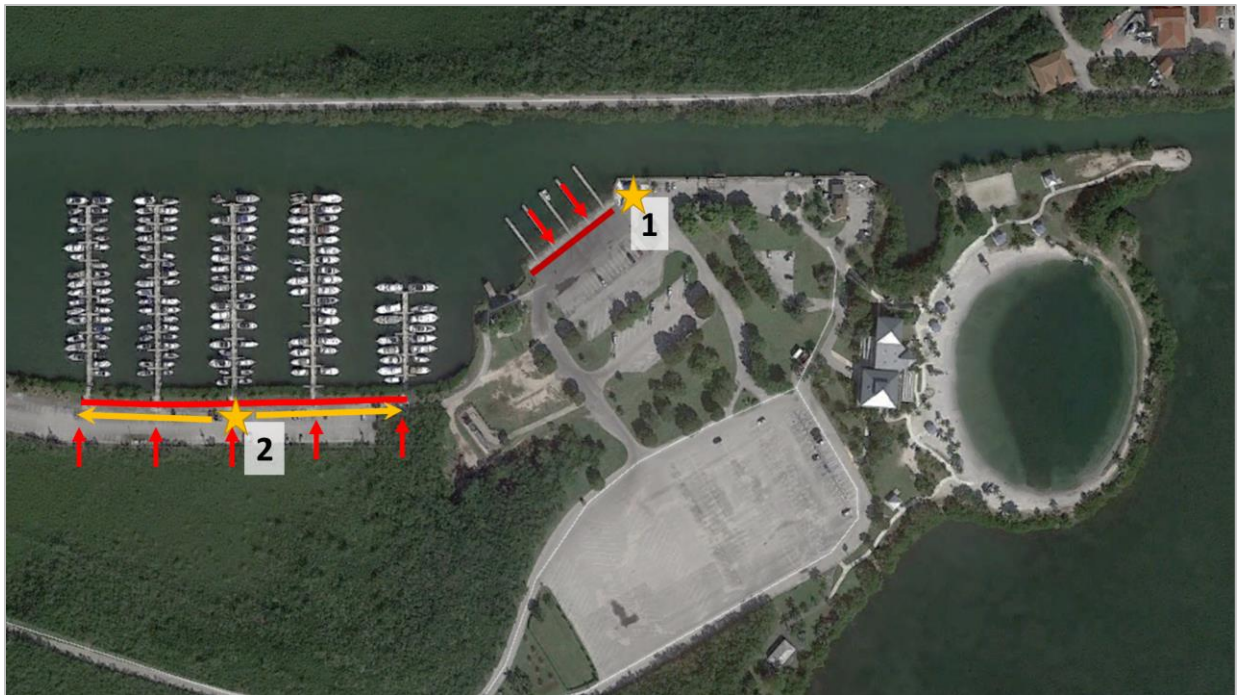


Figure 101. Homestead Bayfront Marina (1) public and (2) private boat launch sampling locations.



Figure 102. Black Point Marina (1) public boat launch and (2) private boat slip sampling locations.



Figure 103. Matheson-Hammock Marina (1) public boat launch and (2) private boat slip sampling locations.



Figure 104. Boca Chita Key sampling location.



Figure 105. Elliot Key sampling location.

Visitor Center Sampling Procedures

At the Dante Fascell Visitor Center, visitor groups were sampled using a timed-interval approach (i.e., attempt to sample one visitor group every N minutes of the sampling day, where N is the time interval); interval times were designed in advance of onsite administration to ensure that there was a sufficient number of questionnaires to administer to visitor groups during all hours of each sampling day and each day of the sampling period. The timed-interval approach involved having the survey administrator contact the first visitor group to enter the survey area at the start of the sampling period and asking them to participate in the survey. If the group agreed to participate, they were administered the survey; if the group refused to participate, they were asked to complete the non-response bias questions and then thanked for their time. After completing a contact with a refusal group, the survey administrator contacted the next visitor group to enter the survey area and asked them to participate in the survey. The survey administrator continued this process until a visitor group agreed to participate; once a participating group was administered the survey, the survey administrator waited until the start of the next time interval to contact a visitor group. At the start of the next time interval, the survey administrator contacted the first group to enter the survey area and asked them to participate in the survey. If the next time interval started before the survey administrator was able to recruit a visitor group to participate in the survey for the previous time interval, he/she advanced to the next time interval simply by contacting the next arriving visitor group; once a group agreed to participate, the survey administrator then waited until the start of the next time interval to continue. The survey administrator repeated this sequence of steps throughout the sampling period.

Marina Sampling Procedures

Visitor groups were sampled at public and private boat launches at Miami-Dade County marinas. Sampling at marinas required modifications to the timed-interval sampling procedure; these modified procedures are described below.

Public Boat Launches

Miami-Dade County owns and operates all facilities at county marinas; individuals at marinas are not considered visitors to Biscayne NP until they travel out on the water. Therefore, individuals at public boat launches were not considered eligible for sampling unless they had placed a boat in the water. Additionally, jet skis are not permitted in Biscayne NP; therefore, individuals placing jet skis in the water were considered ineligible for sampling. Visitor groups at Matheson-Hammock Marina, located north of Biscayne NP, were asked a screening question to determine if they intended to travel through the park once out on the water; if they did not intend to travel through the park, they were considered ineligible for the study. Visitor groups at the public launches were contacted by survey administrators after placing their boat in the water, driving their vehicle out of the boat ramp, and parking in the marina parking lot.

From Friday, July 1, through Tuesday, July 5, visitor groups at the marinas were sampled using a timed-interval approach (i.e., attempt to sample one visitor group every N minutes of the sampling day, where N is the time interval), with survey administrators contacting the first visitor group to drive their vehicle out of a boat ramp after the start of the sampling interval. Sampling interval times were designed in advance of onsite administration to ensure that there was a sufficient number of questionnaires to administer to visitor groups during all hours of each sampling day and each day of the sampling period. Once the visitor group had parked and exited their vehicle, they were contacted by the survey administrator to participate in the survey (visitor groups at Matheson-Hammock Marina were first asked the screening question to determine if they were eligible to participate in the survey). If the group agreed to participate, they were administered the survey; if the group refused to participate, they were asked to complete the non-response bias questions and then thanked for their time. After completing a contact with a refusal group, the survey administrator contacted the next visitor group to launch a boat and park their vehicle, and asked them to participate in the survey. The survey administrator continued this process until a visitor group agreed to participate; once a participating group was administered the survey, the survey administrator waited until the start of the next time interval to contact a visitor group. At the start of the next time interval, the survey administrator contacted the first visitor group to launch their boat and park their vehicle, and asked them to participate in the survey. If the next time interval started before the survey administrator was able to recruit a visitor group to participate in the survey for the previous time interval, he/she advanced to the next time interval simply by contacting the next visitor group; once a group agreed to participate, the survey administrator then waited until the start of the next time interval to continue. The survey administrator repeated this sequence of steps throughout the sampling period.

After Tuesday, July 5, it was determined that an adequate number of mail-back packets would not be distributed using a timed-interval approach at the marinas. Correspondingly, starting Wednesday, July 6 and continuing through Sunday, July 10, visitor groups at public boat launches were sampled

using a “first-after-last” sampling approach. The first-after-last approach involved the survey administrator contacting the first visitor group to drive their vehicle out of a boat ramp after the start of the sampling period and asking them to participate in the survey (visitor groups at Matheson-Hammock Marina were first asked the screening question to determine if they were eligible to participate in the survey). If the group agreed to participate, they were administered the survey; if the group refused to participate, they were asked to complete the non-response bias questions and then thanked for their time. After completing a contact with a refusal group, the survey administrator contacted the next visitor group (rather than waiting for the start of a next time interval) and asked them to participate in the survey. The survey administrator continued this process until a visitor group agreed to participate. Once a participating group was administered the survey, the survey administrator contacted the next visitor group (rather than waiting to the start of a next time interval) and asked them to participate in the survey. The survey administrator repeated this sequence of steps throughout the sampling period.

Private Boat Launches

Private boat launches at Miami-Dade County marinas allow boaters to park and store their boats in the water at private slips, with each slip located behind a locking gate. Homestead Bayfront Marina contains five private slips, Black Point Marina contains four private slips, and Matheson-Hammock Marina contains nine private slips. Sampling was conducted at all private slips at Homestead Bayfront Marina and Black Point Marina. At Matheson-Hammock Marina, sampling was conducted at three of the nine private slips (Figure 103). The three boat slips were selected because it was observed to be difficult for the survey administrator to provide coverage for all nine boat slips. The three boat slips were also observed as receiving higher visitor volumes than the others and would therefore maximize sampling efficiency. Miami-Dade County owns and operates all facilities at county marinas; individuals at private boat launches are not considered visitors to Biscayne NP until they travel out on the water. Therefore, individuals at private boat launches were not considered eligible for sampling unless they intended to take their boat out on the water that day.

Visitor groups at private boat launches at Miami-Dade County marinas were sampled using a first-after-last sampling approach. The first-after-last sampling approach involved the survey administrator contacting the first visitor group to approach the entrance area for private boat slips on foot from the nearby parking lots or walking paths at each marina. Survey administrators were stationed centrally along the row of boat slips, and moved along the row of boats slip to contact arriving visitor groups as necessary. Arriving visitor groups were asked a screening question to determine if they intended to take their boat out on the water that day; if they did not intend to take their boat out on the water that day, they were considered ineligible and thanked for their time. Visitor groups at Matheson-Hammock Marina, located north of Biscayne NP, were asked an additional screening question to determine if they intended to travel through the park once out on the water; if they did not intend to travel through the park, they were considered ineligible and thanked for their time. If the group agreed to participate, they were administered the survey; if the group refused to participate, they were asked to complete the non-response bias questions and then thanked for their time. After completing a contact with a refusal group, the survey administrator contacted the next visitor group and asked them to participate in the survey. The survey administrator continued

this process until a visitor group agreed to participate. Once a participating group was administered the survey, the survey administrator contacted the next visitor group and asked them to participate in the survey. The survey administrator repeated this sequence of steps throughout the sampling period

Boca Chita Key and Elliot Key Sampling Procedures

Visitor groups at docking areas on Boca Chita Key and Elliot Key were sampled during late-morning using a census-based approach, where an attempt was made to contact all visitors who were present at the time of survey administration. Survey administrators accessed Boca Chita Key and Elliot Key by an NPS-staffed boat. The survey administrator then walked the perimeter of the docking areas, contacted the first visitor group they encountered, and asked them to participate in the survey. If the group agreed to participate, they were administered the survey; if the group refused to participate, they were asked to complete the non-response bias questions and then thanked for their time. The survey administrator repeated this process until all visitor groups in the study area during the sampling period had been contacted. No sampling was performed at Elliot Key on July 1 and July 2 due to severe weather (July 1) and NPS staffing limitations (July 2).

Appendix 6. Non-response Bias Analysis - Effects on Survey Responses due to State or Country of Residence

This study used answers to five, pre-selected non-response bias questions and one observable characteristic (initial contact gender) of contacted visitors to compare respondents with non-respondents and check for non-response bias. Results of a chi-square test for independence with $\alpha = 0.05$ and $p \leq 0.008$ (following Bonferroni correction) suggest that groups who responded to the SEM survey differ significantly from non-respondents, with respect to state or country of residence ($\chi^2 = 36.496$; $p < 0.001$). In particular, in state visitor groups were less likely to respond to the survey than out of state and international visitor groups.

The potential impact of this non-response bias on the results of the SEM survey was further explored. Specifically, effects due to state or country of residence were examined for 66 key questions in the SEM survey that were designed to assess use of information sources for trip planning, motivations for visiting Biscayne National Park, participation in activities, programs, and services, attitudes toward park management, and satisfaction with park services and facilities (Table 27). A Bonferroni correction was applied to account for the fact that 66 simultaneous statistical tests were conducted with the same data set. The Bonferroni correction minimizes the likelihood of concluding from the results of the statistical tests that there are differences between respondents and non-respondents, when there actually are no differences (i.e., minimizes the probability of making a Type I error). With the Bonferroni correction applied in this analysis, statistical test results with p-values of less than 0.0008 are assumed to be statistically significant. Statistically significant effects of state or country of residence on survey responses were observed for 14 of the 66 questions that were assessed and are emphasized with bold text in Table 27.

Results of these statistical tests comparing respondents to non-respondents (i.e., non-response bias analysis) suggest that, for a relatively small number of questions in the survey, the survey results may over-represent opinions, evaluations, or behaviors from out-of-state visitor groups. Where statistical differences were found between respondent subgroups, results by subgroup are reported in this Appendix to document the effects of these differences (Figure 106 through Figure 119). The format of these figures is as follows:

1. The figure title describes the graph's information.
2. Listed below the graph, the "N" shows the number of individuals or visitor groups responding to the question for each group. The phrase "**CAUTION!**" is shown on the graph to indicate the results are unreliable due to low sample size ($N < 30$).
* appears when total percentages do not equal 100 due to rounding.
3. Vertical information (y-axis) describes the response category.
4. Horizontal information (x-axis) percentage of responses in each category.
5. The proportion of visitor groups/visitors who responded to each category.

Table 27. Statistical tests of effects due to State or Country of Residence on key questions in SEM survey.

Question	Response	Response scale	N	Chi-square; p-value
Prior to this trip, how did you obtain information about Biscayne National Park? Please mark all that apply. (Q7)	Did not obtain information prior to this visit	0 = No 1 = Yes	226	$\chi^2 = 5.687$; $p = 0.058$
	Previous visits	0 = No 1 = Yes	226	$\chi^2 = 51.436$; $p < 0.0001$
	Friends/relatives/word of mouth	0 = No 1 = Yes	226	$\chi^2 = 0.365$; $p = 0.833$
	Inquiry to park via phone, mail, or email	0 = No 1 = Yes	226	$\chi^2 = 3.102$; $p = 0.212$
	Biscayne National Park website	0 = No 1 = Yes	226	$\chi^2 = 56.198$; $p < 0.0001$
	Other website	0 = No 1 = Yes	226	$\chi^2 = 8.475$; $p = 0.014$
	Local businesses (hotels, motels, restaurants, etc.)	0 = No 1 = Yes	226	$\chi^2 = 7.624$; $p = 0.022$
	Maps/brochures	0 = No 1 = Yes	226	$\chi^2 = 24.156$; $p < 0.0001$
	Newspaper/magazine articles	0 = No 1 = Yes	226	$\chi^2 = 0.300$; $p = 0.861$
	Other units of the National Park System	0 = No 1 = Yes	226	$\chi^2 = 19.030$; $p < 0.0001$
	School class/program	0 = No 1 = Yes	226	$\chi^2 = 0.909$; $p = 0.635$
	Social media (such as Facebook, Twitter, etc.)	0 = No 1 = Yes	226	$\chi^2 = 2.043$; $p = 0.360$

Table 27 (continued). Statistical tests of effects due to State or Country of Residence on key questions in SEM survey.

Question	Response	Response scale	N	Chi-square; p-value
Prior to this trip, how did you obtain information about Biscayne National Park? Please mark all that apply. (Q7 (continued))	State welcome center/visitors bureau/chamber of commerce	0 = No 1 = Yes	226	$\chi^2 = 7.043$; $p = 0.030$
	Television/radio programs/DVDs	0 = No 1 = Yes	226	$\chi^2 = 3.761$; $p = 0.153$
	Travel guides/tour books (such as AAA, etc.)	0 = No 1 = Yes	226	$\chi^2 = 14.795$; $p = 0.001$
How important to you was each of the following reasons for visiting Biscayne National Park on this trip? Please mark one for each row. (Q9)	To visit a National Park Service site	1 = "Extremely important" to 5 = "Not at all important"	212	$\chi^2 = 27.409$; $p = 0.001$
	To spend time with friends/family	1 = "Extremely important" to 5 = "Not at all important"	221	$\chi^2 = 9.843$; $p = 0.276$
	To view wildlife or natural scenery	1 = "Extremely important" to 5 = "Not at all important"	222	$\chi^2 = 16.728$; $p = 0.033$
	To get physical exercise	1 = "Extremely important" to 5 = "Not at all important"	211	$\chi^2 = 16.503$; $p = 0.036$
	To relax	1 = "Extremely important" to 5 = "Not at all important"	220	$\chi^2 = 29.699$; $p < 0.0001$

Table 27 (continued). Statistical tests of effects due to State or Country of Residence on key questions in SEM survey.

Question	Response	Response scale	N	Chi-square; p-value
How important to you was each of the following reasons for visiting Biscayne National Park on this trip? Please mark one for each row. (Q9) (continued)	To learn more about American history and culture	1 = "Extremely important" to 5 = "Not at all important"	213	$\chi^2 = 33.764$; $p < 0.0001$
	To learn more about nature	1 = "Extremely important" to 5 = "Not at all important"	215	$\chi^2 = 16.347$; $p = 0.038$
	To attend a special event	1 = "Extremely important" to 5 = "Not at all important"	185	$\chi^2 = 11.041$; $p = 0.199$
	To hear the sounds of nature/quiet	1 = "Extremely important" to 5 = "Not at all important"	217	$\chi^2 = 15.872$; $p = 0.044$
	To experience solitude	1 = "Extremely important" to 5 = "Not at all important"	211	$\chi^2 = 10.009$; $p = 0.264$
	To be outdoors	1 = "Extremely important" to 5 = "Not at all important"	222	$\chi^2 = 13.287$; $p = 0.102$
	To view dark night sky/stars	1 = "Extremely important" to 5 = "Not at all important"	201	$\chi^2 = 6.192$; $p = 0.626$

Table 27 (continued). Statistical tests of effects due to State or Country of Residence on key questions in SEM survey.

Question	Response	Response scale	N	Chi-square; p-value
On this trip, in which of the following activities did you personally participate within Biscayne National Park? Please mark all that apply. (Q11)	Viewing wildlife, natural features, scenery, wildflowers, etc.	0 = No 1 = Yes	224	$\chi^2 = 17.999$; $p < 0.0001$
	Creative arts (photography/drawing/painting/writing)	0 = No 1 = Yes	224	$\chi^2 = 5.981$; $p = 0.050$
	Visiting a cultural or historic site	0 = No 1 = Yes	224	$\chi^2 = 3.856$; $p = 0.145$
	Nature study	0 = No 1 = Yes	224	$\chi^2 = 7.448$; $p = 0.024$
	Driving for pleasure	0 = No 1 = Yes	224	$\chi^2 = 0.890$; $p = 0.641$
	Walking/short hike (less than 1 hour)	0 = No 1 = Yes	224	$\chi^2 = 12.530$; $p = 0.002$
	Day hiking (1 hour or more)	0 = No 1 = Yes	224	$\chi^2 = 16.407$; $p < 0.0001$
	Bicycling	0 = No 1 = Yes	224	$\chi^2 = 1.201$; $p = 0.549$
	Running/jogging	0 = No 1 = Yes	224	$\chi^2 = 0.296$; $p = 0.862$
	Fishing	0 = No 1 = Yes	224	$\chi^2 = 25.662$; $p < 0.0001$
	Commercial fishing	0 = No 1 = Yes	224	N/A
	Non-motorized water travel (rafting, kayaking, canoeing, tubing, etc.)	0 = No 1 = Yes	224	$\chi^2 = 4.243$; $p = 0.120$

Table 27 (continued). Statistical tests of effects due to State or Country of Residence on key questions in SEM survey.

Question	Response	Response scale	N	Chi-square; p-value
On this trip, in which of the following activities did you personally participate within Biscayne National Park? Please mark all that apply. (Q11) (continued)	Motorized water travel (boating, jet skiing, etc.)	0 = No 1 = Yes	224	$\chi^2 = 24.106$; $p < 0.0001$
	Camping in developed sites	0 = No 1 = Yes	224	$\chi^2 = 0.359$; $p = 0.836$
	Family gathering/reunion	0 = No 1 = Yes	224	$\chi^2 = 3.057$; $p = 0.217$
	Picnicking	0 = No 1 = Yes	224	$\chi^2 = 2.189$; $p = 0.335$
	Water play (swimming, snorkeling, scuba diving, etc.)	0 = No 1 = Yes	224	$\chi^2 = 3.616$; $p = 0.164$
On this trip, in which of the following programs and services did you personally participate within Biscayne National Park? (Q13)	Attending a ranger-led activity, such as tour or talk	0 = No 1 = Yes	157	$\chi^2 = 4.509$; $p = 0.105$
	Talking informally with a ranger	0 = No 1 = Yes	157	$\chi^2 = 12.043$; $p = 0.002$
	Viewing outdoor exhibits	0 = No 1 = Yes	157	$\chi^2 = 23.830$; $p < 0.0001$
	Viewing indoor exhibits	0 = No 1 = Yes	157	$\chi^2 = 37.216$; $p < 0.0001$
	Attending a cultural demonstration or performance	0 = No 1 = Yes	157	$\chi^2 = 0.546$; $p = 0.761$
	Reading the park brochure or newspaper	0 = No 1 = Yes	157	$\chi^2 = 14.911$; $p = 0.001$
	Going to the Visitor Center	0 = No 1 = Yes	157	$\chi^2 = 35.768$; $p < 0.0001$

Table 27 (continued). Statistical tests of effects due to State or Country of Residence on key questions in SEM survey.

Question	Response	Response scale	N	Chi-square; p-value
On this trip, in which of the following programs and services did you personally participate within Biscayne National Park? (Q13) (continued)	Watching movies or videos about the park	0 = No 1 = Yes	157	$\chi^2 = 7.388$; $p = 0.025$
	Participating with child in the Junior Ranger program	0 = No 1 = Yes	157	$\chi^2 = 5.797$; $p = 0.055$
	Obtaining National Park passport stamp	0 = No 1 = Yes	157	$\chi^2 = 40.874$; $p < 0.0001$
	Listening to an audio tour or podcast	0 = No 1 = Yes	157	$\chi^2 = 0.546$; $p = 0.761$
	Using a smart phone app specific to Biscayne National Park	0 = No 1 = Yes	157	$\chi^2 = 1.754$; $p = 0.416$
	None	0 = No 1 = Yes	157	$\chi^2 = 13.081$; $p = 0.001$
To what extent do you agree or disagree with each of the following statements? Please mark one for each row. (Q21)	Biscayne National Park is a safe place to visit	1 = "Strongly agree" to 5 = "Strongly disagree"	225	$\chi^2 = 26.126$; $p = 0.001$
	Biscayne National Park is too crowded	1 = "Strongly agree" to 5 = "Strongly disagree"	225	$\chi^2 = 20.157$; $p = 0.028$
	Natural resources in Biscayne National Park are in pristine condition	1 = "Strongly agree" to 5 = "Strongly disagree"	225	$\chi^2 = 19.289$; $p = 0.037$

Table 27 (continued). Statistical tests of effects due to State or Country of Residence on key questions in SEM survey.

Question	Response	Response scale	N	Chi-square; p-value
To what extent do you agree or disagree with each of the following statements? Please mark one for each row. (Q21) (continued)	The entrance fee for Biscayne National Park is too high	1 = "Strongly agree" to 5 = "Strongly disagree"	225	$\chi^2 = 22.317$; $p = 0.014$
	Vandalism and crime are not a problem in Biscayne National Park	1 = "Strongly agree" to 5 = "Strongly disagree"	225	$\chi^2 = 4.865$; $p = 0.900$
	Biscayne National Park is not accessible to persons with physical disabilities	1 = "Strongly agree" to 5 = "Strongly disagree"	225	$\chi^2 = 13.811$; $p = 0.182$
	Historical and cultural features in Biscayne National Park are well maintained/preserved	1 = "Strongly agree" to 5 = "Strongly disagree"	225	$\chi^2 = 17.026$; $p = 0.074$
	Development of adjacent areas detracts from visitors' experiences at Biscayne National Park	1 = "Strongly agree" to 5 = "Strongly disagree"	225	$\chi^2 = 26.126$; $p = 0.001$
Overall, how would you rate the quality of the facilities, services, and recreational opportunities in Biscayne National Park? (Q23)	—	1 = "Very good" to 5 = "Very poor"	221	$\chi^2 = 9.140$; $p = 0.331$

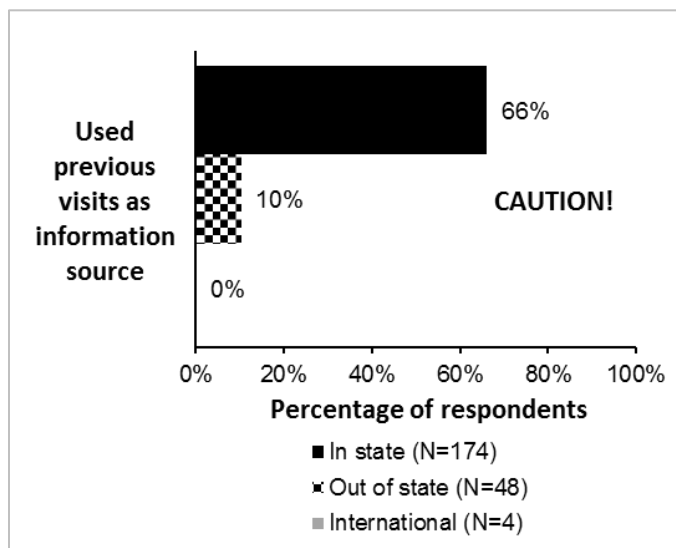


Figure 106. Visitor groups that obtained information about the park prior to visit using previous visits, by State or Country of Residence.

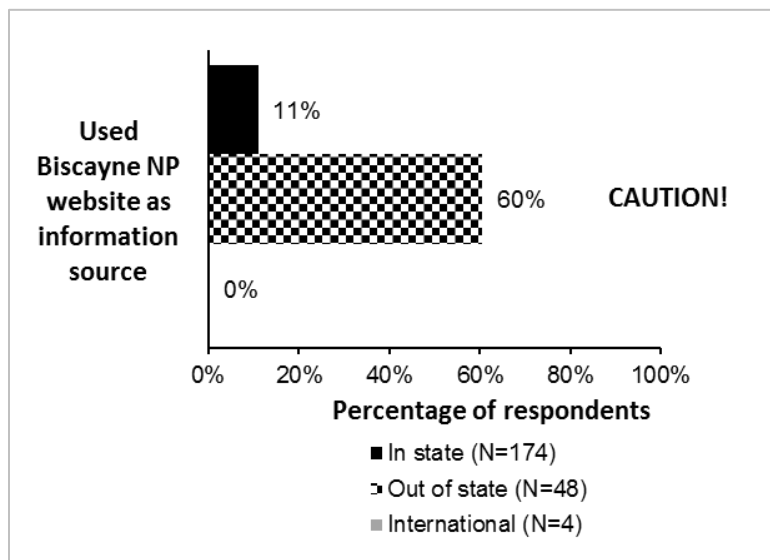


Figure 107. Visitor groups that obtained information about the park prior to visit using Biscayne NP website, by State or Country of Residence.

*total percentages do not equal 100 due to rounding

**total percentages do not equal 100 because visitors could select more than 1 answer

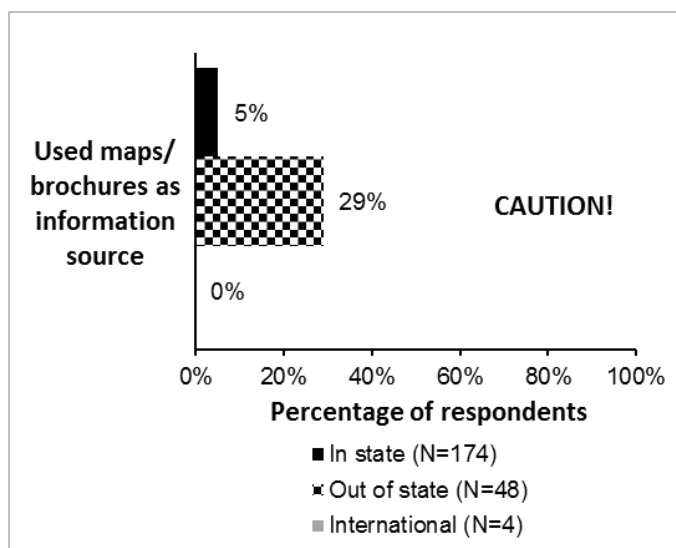


Figure 108. Visitor groups that obtained information about the park prior to visit using maps or brochures, by State or Country of Residence.

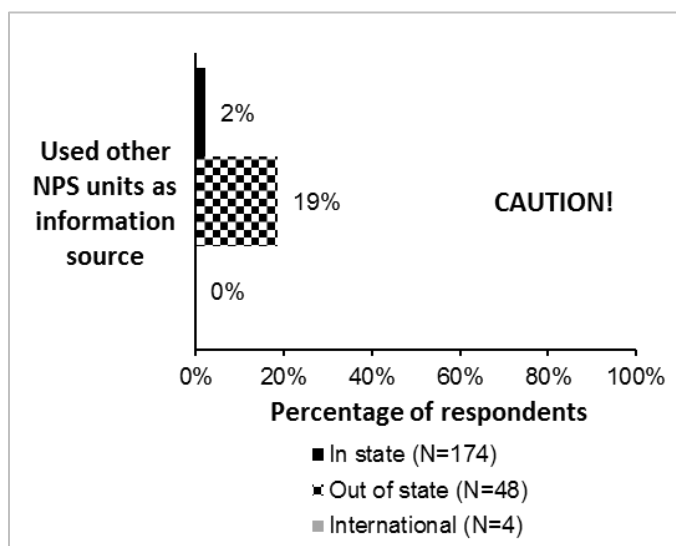


Figure 109. Visitor groups that obtained information about the park prior to visit using NPS units, by State or Country of Residence.

*total percentages do not equal 100 due to rounding

**total percentages do not equal 100 because visitors could select more than 1 answer

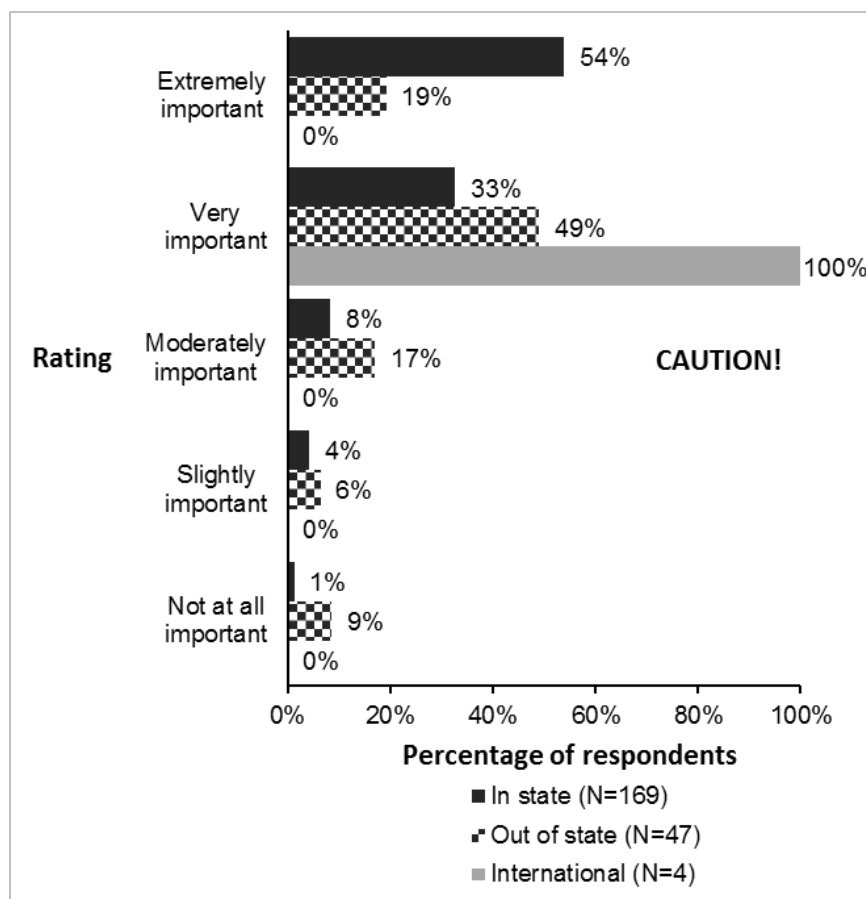


Figure 110. Importance of relaxing, by State or Country of Residence.

*total percentages do not equal 100 due to rounding

**total percentages do not equal 100 because visitors could select more than 1 answer

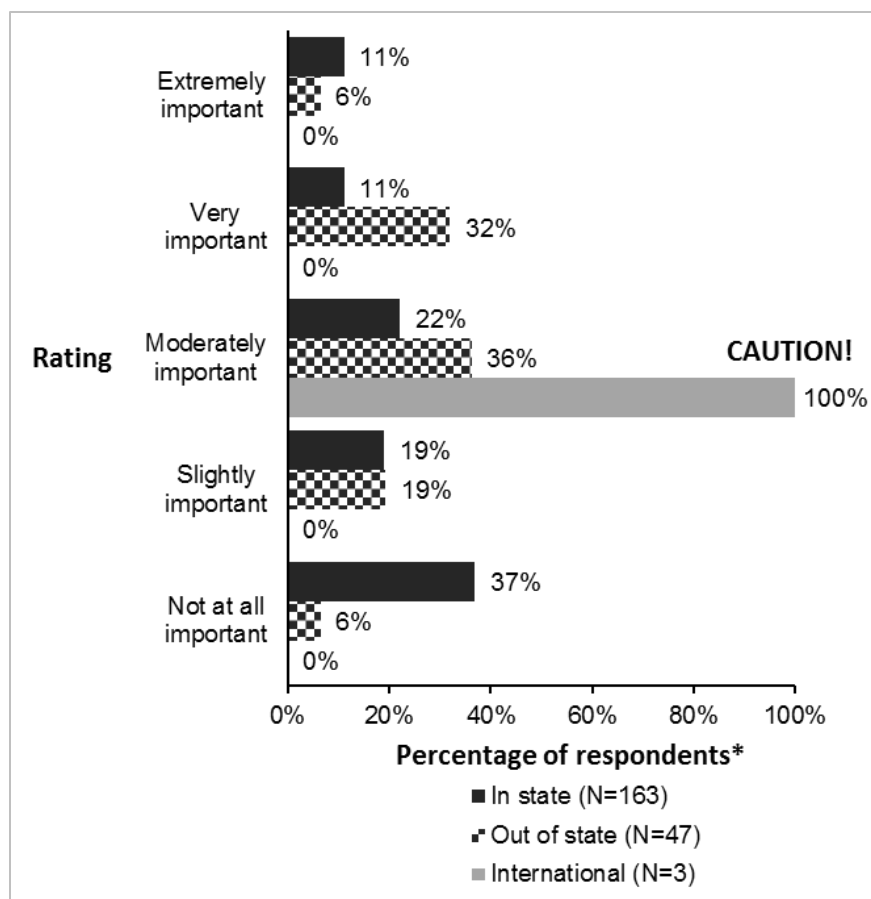


Figure 111. Importance of learning more about American history and culture, by State or Country of Residence.

*total percentages do not equal 100 due to rounding

**total percentages do not equal 100 because visitors could select more than 1 answer

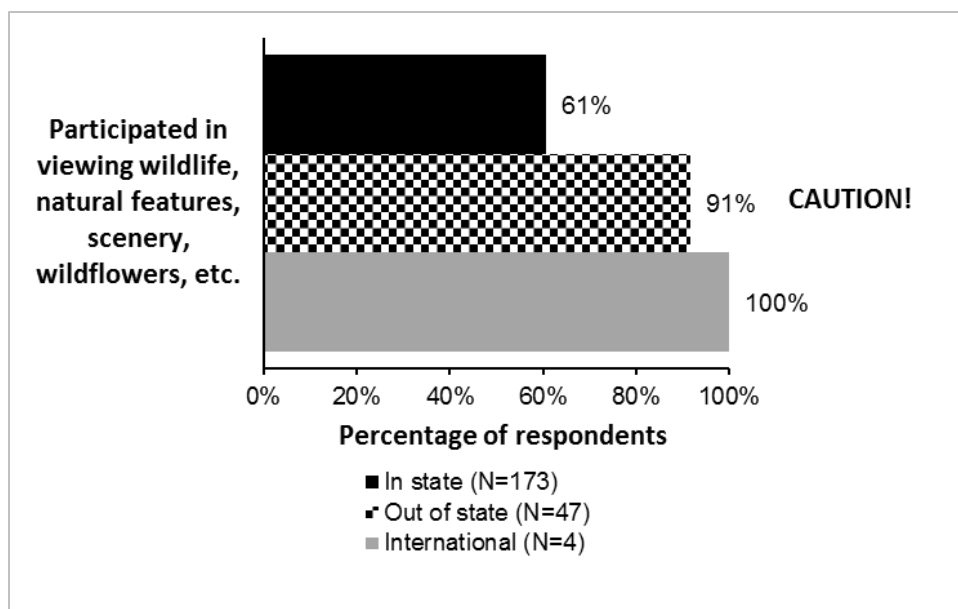


Figure 112. Participation in viewing wildlife, natural features, scenery, wildflowers, etc., by State or Country of Residence.

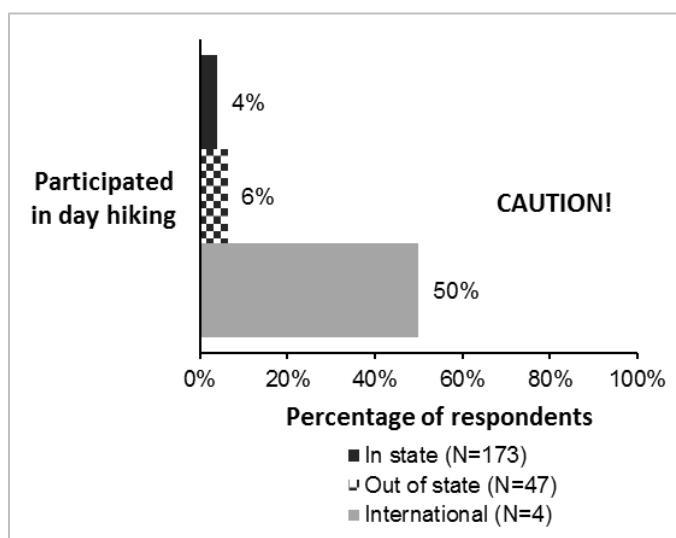


Figure 113. Participation in day hiking, by State or Country of Residence.

*total percentages do not equal 100 due to rounding

**total percentages do not equal 100 because visitors could select more than 1 answer

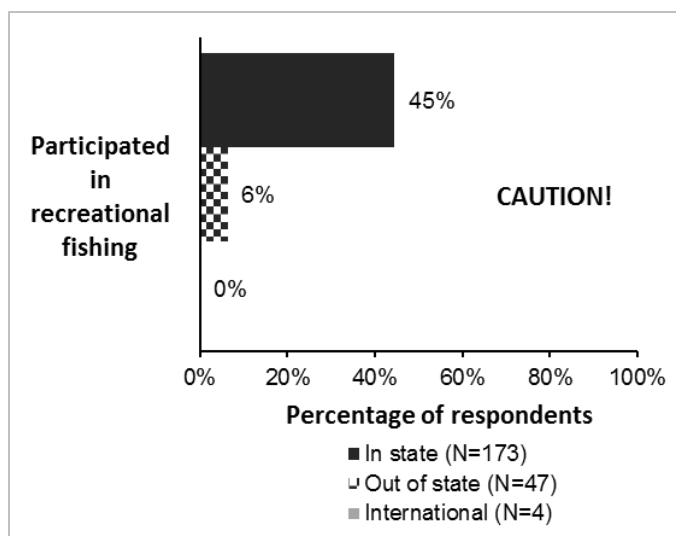


Figure 114. Participation in recreational fishing, by State or Country of Residence.

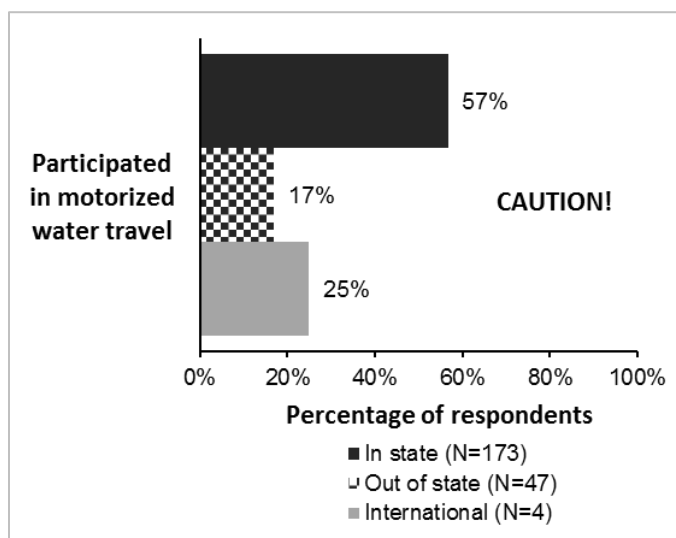


Figure 115. Participation in motorized water travel, by State or Country of Residence.

*total percentages do not equal 100 due to rounding

**total percentages do not equal 100 because visitors could select more than 1 answer

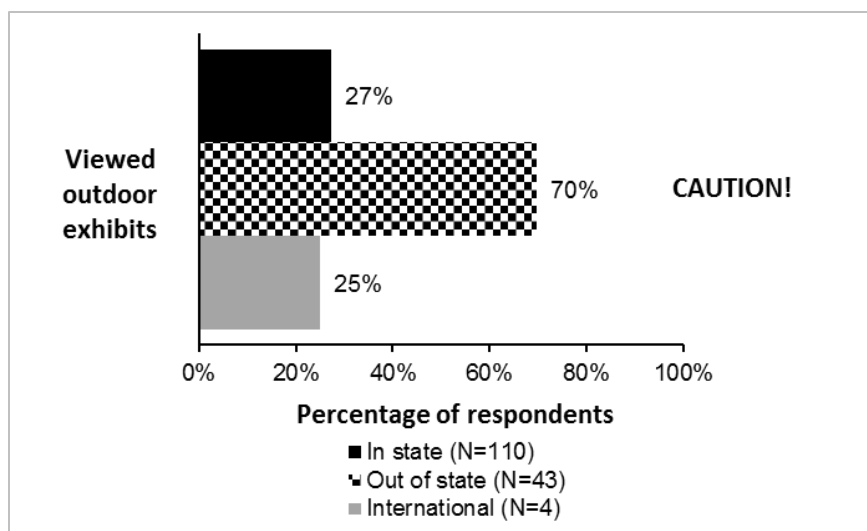


Figure 116. Participation in viewing outdoor exhibits, by State or Country of Residence.

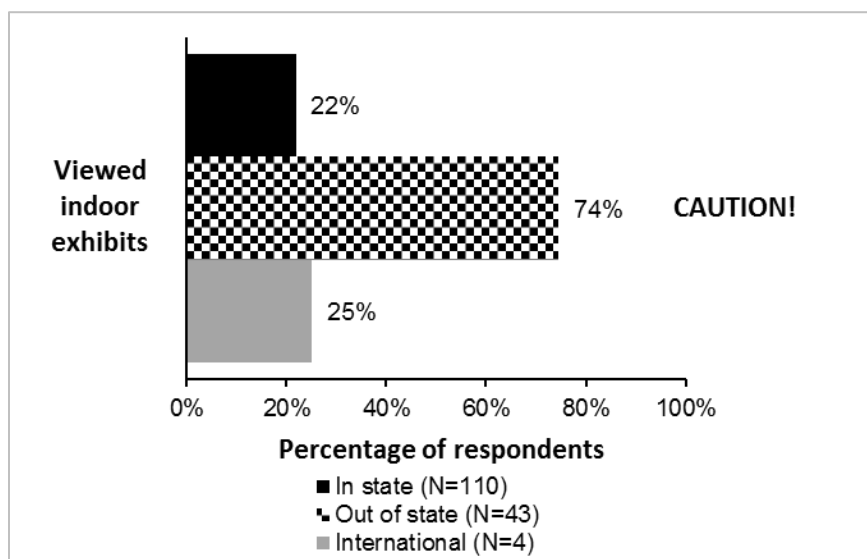


Figure 117. Participation in viewing indoor exhibits, by State or Country of Residence.

*total percentages do not equal 100 due to rounding

**total percentages do not equal 100 because visitors could select more than 1 answer

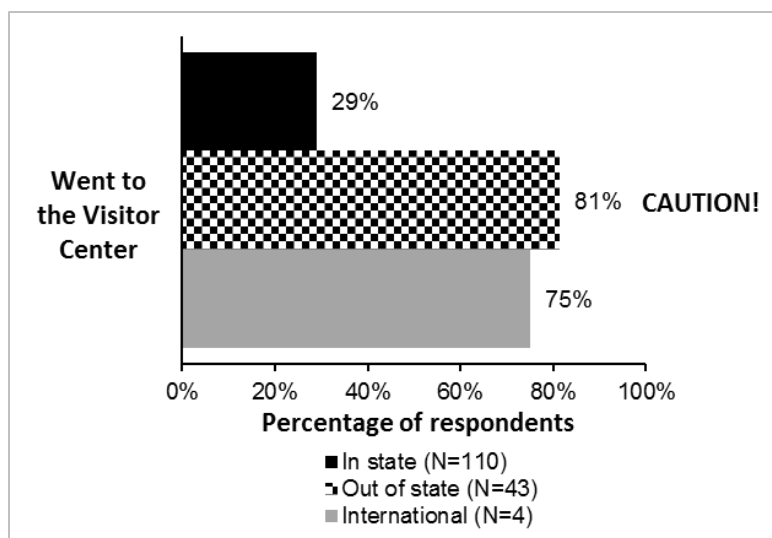


Figure 118. Participation in going to the Visitor Center, by State or Country of Residence.

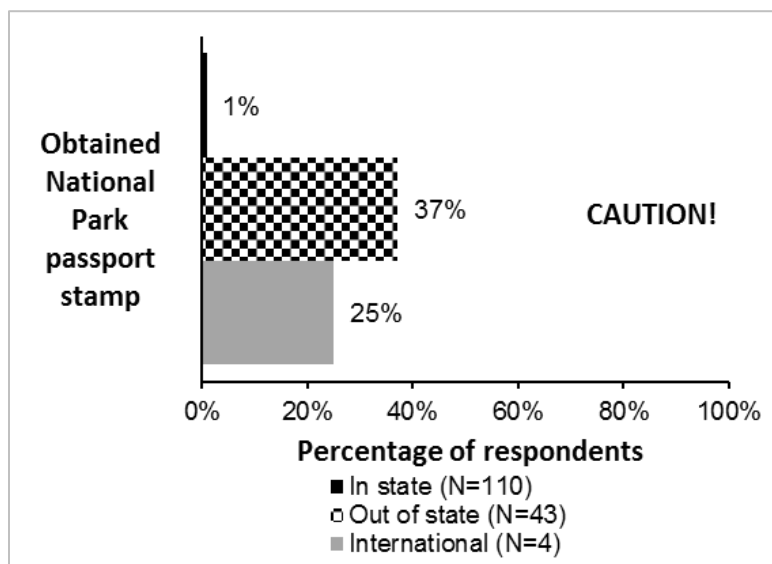


Figure 119. Participation in obtaining National Park passport stamp, by State or Country of Residence.

*total percentages do not equal 100 due to rounding

**total percentages do not equal 100 because visitors could select more than 1 answer

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

NPS 169/150174, December 2018

National Park Service
U.S. Department of the Interior



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