



# Evaluation of the “Be Bear Aware” Message to Visitors in Grand Teton National Park

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# Evaluation of the “Be Bear Aware” Message to Visitors in Grand Teton National Park\*

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## Evaluation of the “Be Bear Aware” Message to Visitors in Grand Teton National Park

### 1. Executive Summary

During the summer of 2010, WYSAC researchers from the Wyoming Survey & Analysis Center (WYSAC) at the University of Wyoming collected information on the visibility of Be Bear Aware signs, access to and use of Be Bear Aware information, visitor knowledge of GRTE’s food storage policy and guidelines for safe recreation while in bear country, and self-reported behavior. The purpose of collecting this information was to evaluate the public education and information component of the Be Bear Aware program and to inform park managers on the effectiveness of this part of the program. In general, the materials created for Be Bear Aware were being seen, accessed, and understood by a majority of campers and picnickers visiting the park during the summer of 2010.

Our research project resulted in the following key findings:

- Fewer picnickers tended to recall seeing the Be Bear Aware Signs compared to campers. This was true even for the Be Bear Aware signs attached to picnic tables.
- The entrance to the park and the campgrounds were the top two locations for campers receiving Be Bear Aware information (77% and 73%, respectively) compared to speaking with park personnel or using the web (58% and 54%). For picnickers, however, the park entrance and the web were the top two locations (61% and 49%) compared to talking with park personnel (22%).
- 58% of campers indicated they received a spoken explanation from park personnel on recreating responsibly in bear country, compared to 22% of picnickers. Of those campers who talked with park personnel, 77% indicated this conversation happened at campground registration.
- Among campers, information provided at campground registration was read significantly more often by first time visitors (85%) and those for whom it was the first visit in the past 24 months (81%) compared to visitors who had visited more recently (70%).
- Of those who accessed the park’s website, only half of the first time visitors (51%) and less than half of those who had visited more than once (45%) indicated that they read the website material on recreation in bear country.
- Knowledge of the park’s food storage policy was significantly greater among campers compared to picnickers, and campers compared to all other overnight visitors.
- Latent class analysis resulted in a four-group typology based on campers’ knowledge of the park’s food storage policy. Nearly half of campers (49%) indicated nothing could be stored in a tent overnight, 35% allowed non-food items in a tent overnight, 13% allowed water bottles in a tent overnight, and 3% did not know the park’s food storage policy.
- Nearly all campers and picnickers (over 98%) indicated that they stored their food and garbage in a vehicle, a bear box, or the dumpster. The percentage of visitors who said they stored their non-food items in the same manner as food was 6 to 10 percentage points lower (88% to 92%).
- Campers and picnickers overwhelmingly agreed with the following statements: black bears are a threat to humans, bears move around day and night, grizzly bears live in GRTE, and running away from a bear can cause an aggressive response in the bear.
- A surprising number of campers and picnickers (16% combined) indicated that dropping food or a backpack was a good strategy for distracting a bear if one should approach; 13% of campers said they had read enough about bears to think they could predict when a bear would turn aggressive.

## 2. Introduction

In 2007 Grand Teton National Park (GRTE) initiated the Be Bear Aware program in an effort to reduce bear-human encounters and potential conflicts within the park. And in light of recent events in the Greater Yellowstone Area (GYA), the programming undertaken at GRTE to educate visitors about visiting and recreating in bear country seems highly prescient. Headlines in regional papers included: “Grizzly kills botanist in attack near Yellowstone park” (Prevost, 2010); “Man dies in bear attack at campground near Yellowstone” (French, 2010); and, “In moments, a Yellowstone hike turns tragic” (Curt and Rodriguez, 2011). Most recently, park actions elicited another headline: “Grizzly charges prompt new specific rules” (Gruver, 2011).

Two years after the initiation of the Be Bear Aware Program, park management engaged the Wyoming Survey & Analysis Center (WYSAC) at the University of Wyoming to complete an evaluation of the public information and education component of the program. This particular aspect of the program focused on education as a means of changing visitor behavior (e.g., engaging in proper food storage, what to do if you encounter a bear). Discussions with park managers resulted in the following research questions, which framed the study:

- Are park visitors seeing the Be Bear Aware information, and where are they seeing it?
- Do visitors comprehend the information and do they act on it?
- What information from Be Bear Aware results in visitors engaging in proper behavior?
- Is the Be Bear Aware information applied by visitors outside the campground?

To evaluate whether the information disseminated as part of the Be Bear Aware program reached park visitors, and was effective, WYSAC designed and tested a face-to-face questionnaire during the summer 2009, and conducted intercept surveys of 634 park visitors during the summer 2010. This report discusses and summarizes the results of this survey.

### 2.1. Background

The program of management for bears in GRTE is to sustain “free ranging, naturally regulated populations” of bears throughout the Park including the John D. Rockefeller, Jr. Memorial Parkway (GRTE, 2007). However, the extent to which humans recreate in prime bear habitat increases the probability of bear-human encounters and the potential for conflict.

In 2007, GRTE recorded 210 bear-human confrontations and 56 bear-human conflicts. Confrontations are defined by the park as “incidents where bears approach or follow people, charge or otherwise act aggressively toward people, enter front-country developments, or enter occupied backcountry campsites without inflicting human injury.” Bear-human conflicts are defined by the park as “incidents where bears damage property, obtain human foods, or injure people” (GRTE, 2007). Escalating numbers of human-bear confrontations may suggest that bears are becoming habituated toward humans and/or human food conditioned. To reduce potential conflict between bears and humans, the park endeavors to develop and implement wildlife and visitor management strategies that balance the needs of bears with visitor enjoyment, education, and appreciation of the park.

To facilitate this balance between visitors and bears, GRTE managers initiated the Be Bear Aware program at the start of the 2007 season. The program is an integrated strategy consisting of public information and education; removal of human food sources; and enforcement of food storage regulations. As part of the public information and education component, the park updated its bear-related message. This included adoption of a universal theme “Be Bear Aware”; designing new graphics to improve message visibility; wider display of the bear warning signs; and increasing visitor outreach efforts at the park’s entrance and high-use areas. The current message

emphasizes food storage, outlining a strict set of rules about what items should be stored (e.g., food, coolers, water bottles, utensils, etc.) and how to store items properly (i.e., in a bear box or a closed, locked vehicle with windows fully closed). The park also refined several guidelines on how to recreate safely and responsibly in bear country. These guidelines have been widely disseminated throughout the park including a full page description in the park newspaper (formerly the *Teewinot*). The newspaper, which is handed to all entrance station arrivals, gives information on food storage, behavior during a bear encounter, differences between black and grizzly bears, and safety on trails.

Despite these efforts, park employees were still observing noncompliance with GRTE's food storage policy, resulting in continued problems with nuisance bears, and requiring the allocation of resources toward managing nuisance bears. When bears actively seek sources of human food, property damage and injuries to humans may result. In the interest of protecting park visitors and preserving the park's bears, GRTE managers sought a formal evaluation of the public information and education portion of the Be Bear Aware program.

## 2.2. Organization of this Report

The remainder of this report contains five sections. Section 3 discusses the methods used to develop the questionnaire, design the appropriate sample, and collect the data. Section 4 presents trip characteristics and demographics of those individuals who completed the survey. Key findings are presented in Section 5 with a summary of those findings following in Section 6. We present possible future directions for the program in Section 7. Appendix A includes raw frequency counts and percentage distributions of responses to all questions on the survey, presented in the order and with the wording used in the survey. Responses to open-ended questions are presented in Appendices B-L.

## 3. Methods

### 3.1. Questionnaire Content

Questionnaire specifics have been reported previously in Nelson, Taylor and Rieser (2009) and are summarized again here for completeness. The questionnaire was developed by WYSAC researchers in collaboration with managers from GRTE, using the results of previous research in the general literature, reviewing the Be Bear Aware program, and talking with the park rangers in charge of this research and program. The questionnaire was designed to collect information about the understanding by park visitors of the Be Bear Aware message. In drafting the questionnaire, WYSAC researchers relied on education materials developed by the park as part of their Be Bear Aware program. The questionnaire was designed to include several important issues: location and visitation (trip characteristics – questions 1 through 7); food storage (questions 8 through 13); beliefs about food storage (question 14a – f); access to park information (questions 15 through 19); park signs regarding bears and safety (questions 20 through 24); and demographics (questions 25 through 28).

To adequately assess the reception of the Be Bear Aware message, questions on message salience were included. Park managers are keenly interested in the message that is most salient to visitors to encourage compliance with park rules. To address the salience issue, questions on where visitors might have received information on recreating safely and responsibly in bear country were included. Also included was a set of questions asking park visitors if they remembered seeing particular Be Bear Aware signs, where they saw the signs, and how many times. Additional questions allowed visitors to indicate which of the messages made the greatest impression on them. Questions and answer choices in this section allowed for both park programs as well as knowledge about bears obtained elsewhere (e.g. television programs) to be assessed.

One final set of substantive questions in the survey contained statements on risk perception to which the respondents reply as having "strong agreement" to "strong disagreement. Previous

research on human-bear interactions suggests that experienced park visitors believe they “know about bears” and that familiarity tends to lessen perceived risk, if the visitors’ own direct experience lacked negative bear encounters (Lackey and Ham, 2003; Gore et al., 2006, 2007). Based on the results of earlier research, Grand Teton Park visitors were asked to recall their own past experiences with bears or relate a story that was told to them (questions 24a-b).

Trip characteristics regarding their present visit and demographic questions (questions 1-7 and questions 25-28) were included to identify particular subgroups (e.g., campers at group sites, perennial visitors to GRTE, age and educational level).

### 3.2. Questionnaire Development and Refinement

Two separate information sessions were conducted on the survey instrument, to ensure that the survey covered the key topics related to the Be Bear Aware program, and that the questions were comprehensible to the general public. The first discussion group comprised 10 park and concession employees representing various service sectors within the park including law enforcement, field biology, backcountry permits, custodial, maintenance, interpretation, concessions, administration, and business resources.

A second discussion group was developed by using an advertisement in the local newspaper to advertise for citizen participants. Seven members of the local community were recruited from the advertisement in the local newspaper and/or a flyer posted at the public library. The final list of participants was selected for demographic diversity based on a short set of screening questions asked of those who responded to the ad by phoning the toll-free number provided.

At the beginning of the information sessions, meeting participants completed the then-current draft of the questionnaire, which served as the focal point for the ensuing discussion. Taylor and Nelson, with the assistance of Rieser, were facilitators for both groups. Both discussion groups, each about two hours in duration, were held on July 7, 2009. Light refreshments were served at both sessions, and participants at the public group were compensated \$50 each.

### 3.3. Sample Design

The park requested the study be limited to front country users; therefore, this survey was confined to campgrounds and picnic areas. All park visitors to campgrounds and picnic areas were in the population to be sampled, whether they had food with them or not. The study population included neither backcountry campers nor day visitors who did not make use of the picnic areas.

Our sample design was based on a probability sampling approach. Probability-based sampling as opposed to convenience sampling allows us to generalize our results to the population; in our case to all campers and picnickers visiting the park during the summer of 2010. We selected all **campsites and picnic sites** within the park as our sampling frame although our true population of interest is the **visitors** who occupy or use these sites. Because the numbers of campsites and of picnic areas are fixed, this approach allowed us to draw our sample from a known number of sampling units whereas the number of visitors to the park over a specified time period is variable. *This approach differs substantially from other studies of park visitors, which are primarily convenience intercept surveys and therefore have results which may not be generalizable to the entire population of park visitors.*

Our target for completed surveys was 625. Random samples of this size yield margins of error of about  $\pm 4$  percentage points for sample estimates of the population’s true value. Because the sampling frame consisted of known camping and picnicking sites the number of occupied sites expected during the interviewing period could be estimated. There are 1,263 campsites and approximately 100 picnic sites in Grand Teton National Park. Based on previous use rates in the



peak summer months (June through August) it was estimated that on average 97% of the campsites and 60% of the picnic sites would be occupied. Campers occupy a site on average for two nights, while picnickers are replaced each day. The initial interview schedule comprised 15 days over a 20 day period, which meant that there were potentially 9,188 camper site occupations  $[(20/2) \times (15/20) \times (0.97 \times 1,263) = 9,188]$  and 900 picnic site occupations  $(0.60 \times 100) \times 15 \text{ days} = 900$ .

As approximately 10% of all sites were picnic sites, the estimates for completed interviews included 63 picnic sites and 562 surveys from campgrounds at rates proportional to the size of the campground and occupancy rate. See Table 1 for target number of completed interviews by campground. The sampling effort at Colter Bay and Flagg Ranch campgrounds was further subdivided based on type of overnight camping.

Table 1. Number of Camp Sites, Average Occupancy, and Sampling Effort by Campground

Campground	# of campsites	Average occupancy	Average # of occupied sites	As a % of all occupied sites	Target # of sample sites
Colter Bay campground	371	100%	371	30.1%	169
Colter Bay RV park	112	100%	112	9.1%	51
Colter Bay Tent Village	66	100%	66	5.3%	30
Flagg Ranch – RV sites	97	98%	95	7.7%	43
Flagg Ranch – tents only	74	98%	72	5.9%	33
Grassy Meadows	10	50%	5	0.4%	2
Gros Ventre	324	96%	311	25.2%	142
Jenny Lake	61	100%	61	4.9%	28
Lizard Creek	63	92%	58	4.7%	26
Signal Mountain	86	96%	82.6	6.7%	38
Total	1264		1234	100.0%	562

### 3.4. Data Collection, Response Rates and Margins of Error

The collection times for the campgrounds were separated into a morning shift (8:30 am to 10:00 am) and an evening shift (5:00 pm until 8:00 pm) to coincide with the time of day that campers would mostly likely be at their campsites (i.e., meal times). The middle hours of the day were set aside to sample picnic areas.

Potential campsite survey respondents were selected using systematic sampling. The systematic method starts at a random start point and then moves every  $k^{\text{th}}$  unit thereafter to sample. A random number generator was used to select a new, random start point for each survey shift at each campground. At the beginning of the study we replaced  $k$  every day starting with  $k=3$ , increasing  $k$  by one every day for the next two days (until  $k=5$ ), and then beginning over again at  $k=3$ . During the last two weeks of the study  $k$  was held constant at  $k=2$  to ensure we met our target completions.

If a campsite was occupied but the campers were not available (i.e., no one around) the site visit was logged as incomplete and a second attempt was made to intercept the potential respondents during the next survey shift. After the second attempt if a camper was not intercepted the site was dropped from the sample. If a campsite was not occupied but was part of the sample then a replacement was used by locating the next occupied site. If a replacement was not located before the next campsite in the sample, the site was dropped from the sample.

The sampling plan for Colter Bay Tent Village was more difficult to implement, since this area included both group campsites and individual campsites. In general a group campsite was treated as one unit since interviewing more than one respondent in such a group could increase contamination in the responses. Toward the end of the survey period, some interviews were completed as the result of convenience sampling (e.g., sampling those who were present in the campground) at Gros Ventre and Colter Bay campgrounds. This was done to meet target completion rates at these locations. All completed surveys that resulted from convenience sampling were labeled as such to test for the presence of sampling bias. There were a total of 40 surveys completed as convenience samples equaling about 6% of the total sample.

A modified version of systematic sampling for the picnic areas was used because unlike the campgrounds, the picnic tables had not been systematically mapped, the tables lacked numbering, and not all picnickers used tables. Upon arrival at a picnic area, interviewers mentally divided the area into sections, sampling one table or group from each section. If time allowed, the sections were canvassed a second time selecting different picnic tables or sitting areas. Visitors at picnic areas were not pre-screened to determine the purpose of their trip before being selected to complete the survey. Therefore, the resulting sample of picnickers included individuals who were also camping in GRTE or Yellowstone National Park.

To assess whether park visitors were seeing the Be Bear Aware signage, the survey included a question that involved the field researcher showing a series of signs and asking respondents to recall if they had seen each sign, where they saw the sign, and how many times (Question 20 a-f). Between July 19, 2010 and August 14, 2010, a combination of 649 campers and picnickers were approached and their participation requested to complete the Be Bear Aware survey. Of those asked to participate only 23 refused resulting in a cooperation rate of 96.5%. The completed number of surveys was 634, of which 67 were picnickers and 567 were campers. Simple random samples of 634 yield margins of error of about  $\pm 4.0$  percentage points with 95% confidence.

### 3.5. Data Compilation and Analyses

Once the surveys were checked for completion and interviewers contacted to resolve any stray marks or skips, the data were exported to the Statistical Package for the Social Sciences (SPSS) version 18.0. Data analysts cleaned the data and recoded some of the variables to enable ease of analysis and presentation. The detailed results of the survey findings are contained in Section 8 (Appendix A) where the raw frequency counts and percentage distributions of responses to all questions on the survey are reported in the order and with the wording used in the survey. Frequency counts represent the actual number of responses for each survey question.

At the park's request both picnickers and campers were sampled for this study. Picnickers included visitors to GRTE that were on a day trip from Yellowstone National Park, camping in GRTE (but at a picnic site when they were intercepted for the survey), visiting from elsewhere, or people who lived in the area. The consequence of the different visitor types in the sample of picnickers as compared to the campers is that they have had dissimilar exposure to Be Bear Aware information. Therefore, picnickers and campers are analyzed separately for most purposes in this report. Observed differences between campers and picnickers were evaluated for statistical significance using the overall Pearson's chi-square test. Further analysis included constructing a scale on Awareness of park guidelines, and correlating that scale score with the responses to questions on behavior and beliefs about bears in the park (Tables 7 and 13).

Further testing of subgroups of campers was conducted using latent class analysis (LCA). LCA separates cases (i.e., campers) into groups such that members of each group are similar to one another while maximizing the distinctions between the groups. The term *latent* refers to the fact that the groups cannot be directly observed, but instead are derived from a set of observed, categorical data. For example, LCA can be used to identify "strong" bear aware campers and

“weak” bear aware campers. LCA can also be used to estimate the size of these groups. The analysis was performed with the LCA program Latent GOLD (Vermunt and Magidson, 2000).

#### 4. Trip Characteristics & Demographics

Just under half (48%) of campers sampled indicated this was their first visit to GRTE compared to 36% of picnickers sampled (see Table 2). Of those who had previously visited the park, campers and picnickers were similar in their park visitation patterns up through five visits in the last 24 months. The percentage of picnickers who had visited the park six or more times was higher than that of campers. An overall test of differences between campers and picnickers for number of visits to the park was significant ( $p < 0.001$ ) indicating the two groups exhibit different visitation patterns. Summaries of overnight accommodations and expected length of stay in the park are presented in Tables 3 and 4, respectively. Both overnight accommodations and length of stay showed significant differences between campers and picnickers, with picnickers more likely to stay outside the park or to live in the area.

Table 2. Number of Prior Visits to GRTE in the Last 24 Months by Campers and Picnickers

Number of Visits*	Campers	Picnickers	All
First visit ever	48.0%	35.8%	46.7%
1	28.7%	26.9%	28.5%
2	15.1%	17.9%	15.4%
3 – 5	5.2%	4.5%	5.1%
6 – 10	1.4%	4.5%	1.7%
More than 10	1.1%	10.4%	2.6%

\*Chi-square test:  $p < .001$

Table 3. Overnight Accommodations Used During Visit for Campers and Picnickers

Facility Type	Campers	Picnickers	All
Lodge*	1.4%	9.0%	2.2%
RV / Van*	43.6%	9.0%	39.9%
Pop-up trailer	10.9%	6.0%	10.4%
Tent village	5.7%	1.5%	5.3%
Personal tent*	43.1%	10.4%	39.6%
Camping under the stars	0.9%	0.0%	0.9%
Staying outside the park	0.9%	37.3%	4.8%
Live in the area	0.4%	16.4%	2.1%
Other/Don't know*	2.0%	19.4%	3.8%

Total percentages are greater than 100 because visitors could select more than one answer choice.

\*Chi-square test:  $p < .001$

Table 4. Expected Length of Stay in the Park (for Campers)

Length of Stay	Campers
Less than 12 hours	0.0%
1 day	4.8%
2 days	16.3%
3 days	19.6%
4 days	16.9%
5 days	9.2%
6 days	7.2%
7 days	10.7%
More than 7 days	15.3%

Expected length of stay varied from 4.8% of the campers expecting to stay just one night in the park, to 15.3% of campers expecting to stay more than one week. The largest group by length of stay was for those campers who expected to stay three days in the park.

The demographic composition of park visitors in the survey is presented in Table 5, which reports the characteristics of the primary individuals selected to complete the survey. There were slightly more male respondents in the camper group (60%) compared to the picnickers (55%), perhaps because slightly more males will camp alone than will females. Both groups were older than the general population (U.S. average age 36.8 years, U.S. Bureau of the Census, 2009) with just over three-quarters of those intercepted being 41 years of age or older (77%). Likewise both campers and picnickers were highly educated with over two-thirds having completed a post-secondary educational degree (67%). More campers interviewed had children among their party (62%) compared to picnickers interviewed (54%).

Table 5. Demographics of Park Visitor Sample by Gender, Age, Education, and Children

Demographic	Campers	Picnickers	All
<b>Gender</b>			
Male	60.8%	55.2%	60.2%
Female	39.2%	44.8%	39.8%
<b>Age</b>			
18-25	5.1%	7.5%	5.4%
26-40	18.0%	14.9%	17.7%
41-55	39.3%	46.3%	40.1%
56-70	33.0%	26.9%	32.3%
70 and higher	4.6%	4.5%	4.6%
<b>Education</b>			
Some high school	0.9%	1.5%	.9%
High school graduate or GED	9.0%	7.5%	8.8%
Some college or technical sch.	23.8%	19.4%	23.5%
Bachelor's degree	35.3%	37.3%	35.5%
Graduate degree	31.0%	34.3%	31.4%
<b>Children</b>			
Children present	62.0%	53.8%	61.1%
No children present	38.0%	46.2%	38.9%

## 5. Key Findings

### 5.1. Visibility of and Access to Be Bear Aware Information

The extent to which park visitors were seeing the Be Bear Aware message was determined by showing survey respondents a series of six signs the park uses as part of their public information and education effort and asking if the respondent remembered seeing each sign (Question 20 a-f). 90% of all campers surveyed remembered seeing the yellow placard stapled to every picnic table in the park (see Table 6). Slightly fewer campers (87%) recalled seeing the diamond-shaped yellow sign with a large bear paw print asking visitors to “Be Bear Aware.” For both signs, significantly fewer picnickers recalled seeing them (80% and 72%, respectively), as indicated by the significant chi-square test.

The brown roadside sign indicating “Food Storage Required” was remembered by almost 78% of respondents. Two-thirds of the sample of campers recalled seeing the “You can help save a bear!” sign posted in restrooms while that was true for only 57% of picnickers. The two signs with the lowest percentage recall – “Warning – Bear Frequenting Area” and “Danger Trail Closed” – are limited in their use and not all visitors would necessarily encounter them while in the park. Thus these two signs would have less visibility and less impact compared to the other four signs and indeed that was the result.

Table 6. Percent Saying “Yes” to Seeing Be Bear Aware Signs for Campers and Picnickers

Sign Description	Background Color	Primary Location	Percent Saying “Yes” to Seeing Sign		
			Campers	Picnickers	All
Be Bear Aware! Food & Odors Attract Bears*	Yellow	Picnic tables	90.2%	80.3%	89.2%
Be Bear Aware – It all smells to a bear – Lock it up!*	Yellow	Trash cans & bear boxes	87.3%	71.6%	85.6%
Be Bear Aware Food Storage Required	Brown	Roads	77.9%	77.3%	77.8%
You can help save a Bear!	White	Bathrooms	66.6%	56.7%	65.6%
Warning Bear Frequenting Area	Yellow or White	Campgrounds & picnic areas	35.3%	37.3%	35.5%
Danger Closed	White	Closed hiking trails	10.9%	13.6%	11.2%

\*Chi-square test:  $p < .05$

We then performed a test on “awareness” of park food storage rules with sign visibility. Ten items from Question 13 on whether items could be stored in a tent overnight (scored zero for “no” and 1 for “yes”) were summed across all respondents. The scores on Awareness varied from zero to seven; therefore, no individual said all items could be stored in a tent overnight, but some park visitors said up to seven of the items could be stored in a tent. Nearly half of the respondents replied correctly that none of the items could be stored in the tent (snacks, dry dog food, canned drinks, water bottles, food in a cooler, cook stove, pet food bowls, clean dishes, uncooked food, and toiletries).

A binomial correlation and significance level for the relationships between sign visibility and awareness of park rules was conducted, and results are presented in Table 7.

Table 7. Binomial Correlation and Significance Level between Sign Visibility and Scale of Awareness of Food Storage Rules

Sign Description	Binomial Correlation and Significance with Awareness of Food Storage Rules
Be Bear Aware! Food & Odors Attract Bears	-.261, p=.002
Be Bear Aware—It all smells to a bear/Lock it up!	-.305, p=.013
Be Bear Aware Food Storage Required	.101, p=.689
You can help save a Bear!	-.037, p=.137
Warning Bear Frequenting Area	.056, p=.853
Danger Closed	-.037, p=.906

Only two of the signs were related to scores on awareness. People who recalled seeing the “Food and Odors Attract Bears” sign or the “Lock it up” sign, they were more likely to be aware of the food storage rules in the parks. This analysis does not suggest a causal relationship, rather awareness of food storage rules is associated with awareness of Bear Safety signs.

Information on proper food storage and recreating safely while in bear country is available on the park’s website, at the Moose entrance station, in conversations with personnel, at visitor centers, and at campground registration. How often visitors were accessed these sources was evaluated, asking them whether they had received or read the information (questions 15 – 18).

Overall, campground entrances and the southern park entrance were the places most likely for the campers and picnickers to receive Be Bear Aware information. Among the four opportunities to obtain Be Bear Aware information, the website was the least likely among campers with just over half of respondents indicating they visited the park’s website while planning their visit to GRTE (see Table 8). And of those campers who accessed the website, only half (52%) said they read material on recreation in bear country. Among picnickers, talking with park personnel was the least likely mode for obtaining information (22%).

The results for picnickers in Table 8 highlight the issue of dissimilar exposure to Be Bear Aware information for this group. Only 22% of picnickers received Be Bear Aware information from park personnel compared to 58% of campers. Since a considerable effort is made at campground registration to provide Bear Aware information, along with the patrolling of campground sites, it is expected that picnickers and campers would receive different amounts of information. Whether this is associated with different practices is a questioned to be addressed in another study.

Table 8. Source of Be Bear Aware Information for Campers and Picnickers

Information Source	Campers		Picnickers		All	
	Received/ Accessed	Read <sup>1</sup>	Received/ Accessed	Read <sup>1</sup>	Received/ Accessed	Read <sup>1</sup>
Campground entrance*	77.7%	80.8%	10.8%	85.7%	70.4%	80.9%
Park entrance*	72.5%	82.9%	60.6%	64.1%	71.3%	81.2%
Park Personnel*	57.6%	--	21.9%	--	53.8%	--
Website	54.4%	51.6%	48.5%	35.5%	53.8%	50.0%

<sup>1</sup> Read equals the combined results for “Yes, I read all of it” and “Yes, I read some of it.”

\*Chi-square test: p<.05

Of those who responded “yes” to having received a spoken explanation about recreating responsibly in bear country, 77% of campers indicated this conversation occurred during

campground registration (see Table 9), compared to less than 38% for picnickers. This difference is statistically significant. The only other source of statistically significant difference between campers and picnickers was the “other” source, usually friends and family.

The remaining choices on the survey received around 10 percent or less affirmative responses overall. Campground registration appears to be the best opportunity to communicate orally to campers about the importance of proper food storage while in the park. Campground registration was also the highest source among picnickers for receiving a verbal explanation.

Table 9. Source of Verbal Explanation about Recreating Safely in Bear Country for Campers and Picnickers

Source of Verbal Explanation	Campers	Picnickers	All
Campground registration*	77.2%	37.5%	75.5%
Campground host on patrol	10.7%	12.5%	10.7%
Other*	9.5%	25.0%	10.2%
Ranger on patrol	9.5%	12.5%	9.6%
Visitor center	8.9%	18.8%	9.4%
Campfire program	6.3%	6.3%	6.3%

Total percentages are greater than 100 because visitors could select more than one answer.

\*Chi-square test:  $p < .001$ .

When accessing information about the Be Bear Aware Program is examined along with number of visits to Grand Teton National Park, some differences also emerge. The campground entrance was almost equally used as the source of program information by those who had visited the park recently compared to those for whom this visit was their first. The only statistically significant difference in number of visits, was for information accessed on the website. For this method of information, those individuals who had visited the park at least once, but not in the previous two years, were much more likely to use the website for program information. Accessing the website was significantly lower among those who had visited the park two or more times in the last 24 months (38%) compared to those who visited only once in the same time period (64%) or for whom it was their first visit ever (55%) (see Figure 1).

Similarly, information provided at campground registration was read significantly more often by first time ever visitors (85%) and for whom it was their first visit in the past 24 months (81%) compared to visitors who visited more often (70%) (see Figure 2).

Figure 1. Source of Be Bear Aware Information Accessed by Number of Prior Visits

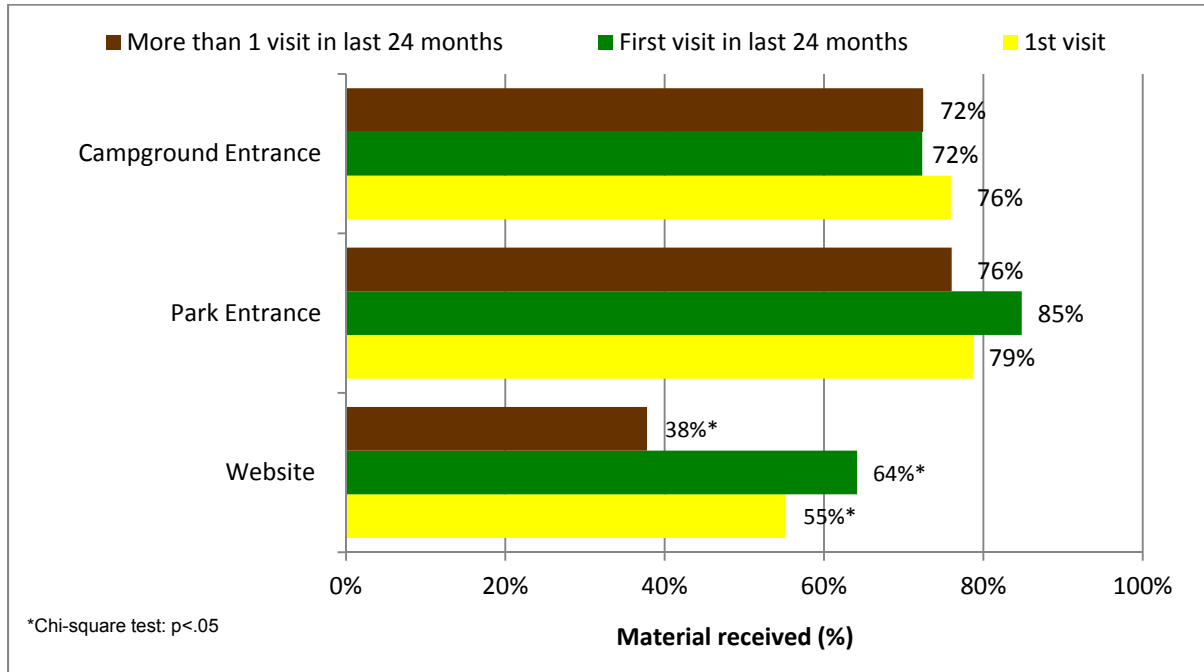
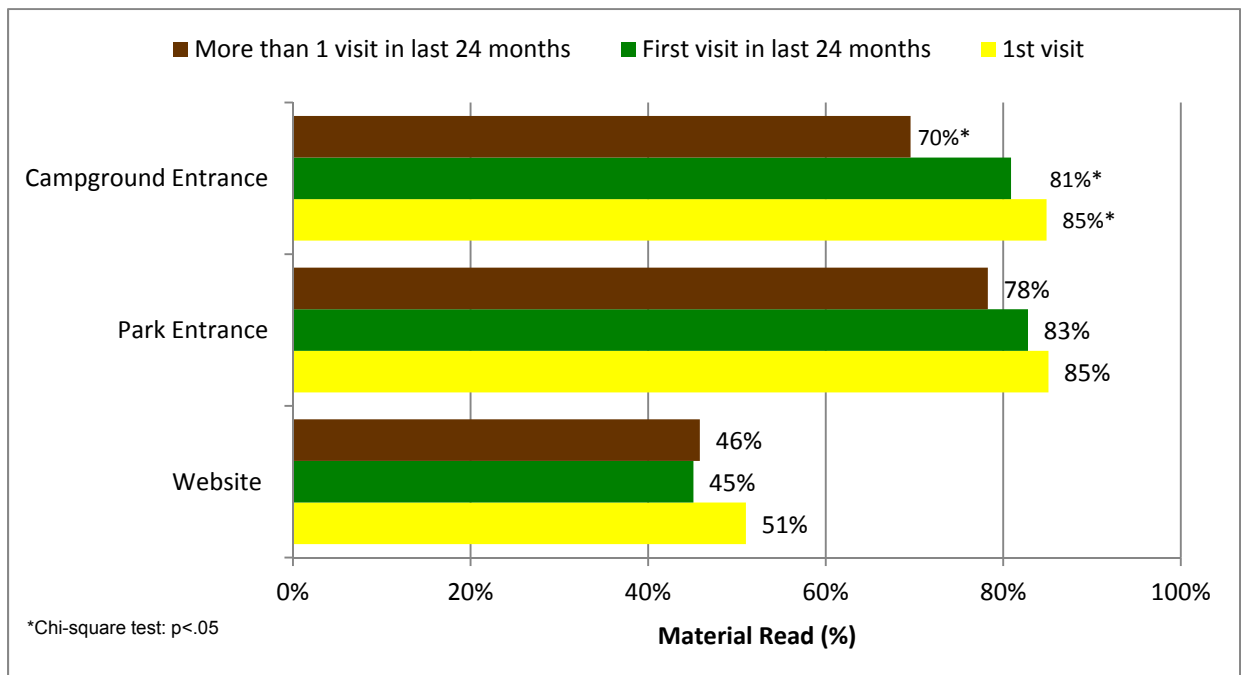


Figure 2. Source of Be Bear Aware Information Read by Number of Prior Visits





## 5.2. Comprehension of Be Bear Aware Information

To test whether park visitors understood the park's rules on proper food storage, a list of items which might be part of any camper's or picnicker's supplies was read to the respondents. Respondents were then asked if according to the park guidelines, each item could be kept in a tent overnight (Question 13, see Table 10). The list of items was generated directly from the park's "Be Bear Aware! Food & Odors Attract Bears" sign, which is stapled to every picnic table in the park.

Nearly half (49%) of the campers gave the correct answer of "none of the above." Yet over a third of the campers (37%) believed that keeping a water bottle in a tent overnight was all right. Moreover, one-fourth of the campers thought clean dishes in the tent overnight was okay (28%), as well as unopened canned drinks (23%).

Picnickers tended to respond differently than campers did to specific examples of the question. Significantly fewer picnickers answered the question correctly and more selected water bottles, canned drinks, and toiletries as being allowed in the tent overnight. The statistically significant differences were for "none of the above," water bottles, canned drinks, and toiletries.

Table 10. Knowledge of Each Item in GRTE's Food Storage Policy for Campers and Picnickers

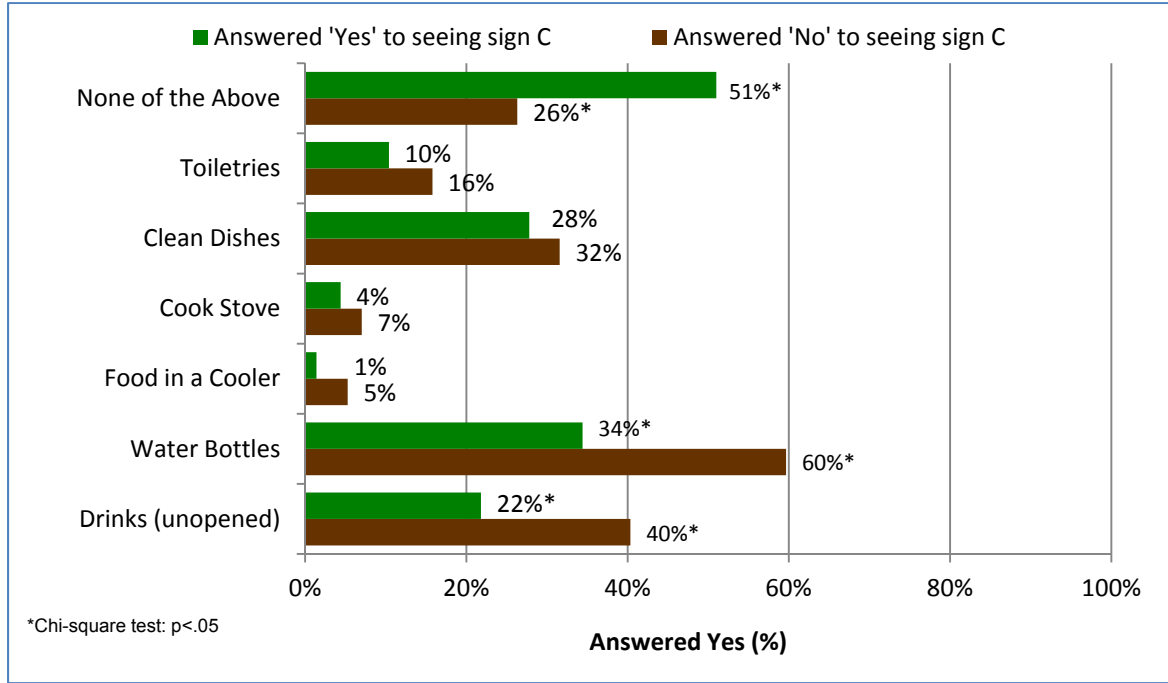
Items	Percent Saying "Yes" to Storing in a Tent Overnight		
	Campers	Picnickers	All
None of the above*	48.9%	28.4%	46.8%
Water bottles*	36.6%	64.2%	39.5%
Clean dishes	27.9%	38.8%	29.1%
Canned drinks (unopened)*	23.3%	40.3%	25.1%
Toiletries*	11.0%	20.9%	12.0%
Cook stove	4.6%	3.0%	4.4%
Any food in a cooler	1.8%	1.5%	1.7%
Uncooked food in its original wrap	1.6%	1.5%	1.6%
Pet food bowls	1.4%	0.0%	1.3%
Snacks	0.9%	3.0%	1.1%
Dry dog food	0.4%	0.0%	0.3%

Total percentages are greater than 100 because visitors could select more than one answer.

\*Chi-square test:  $p < 0.05$

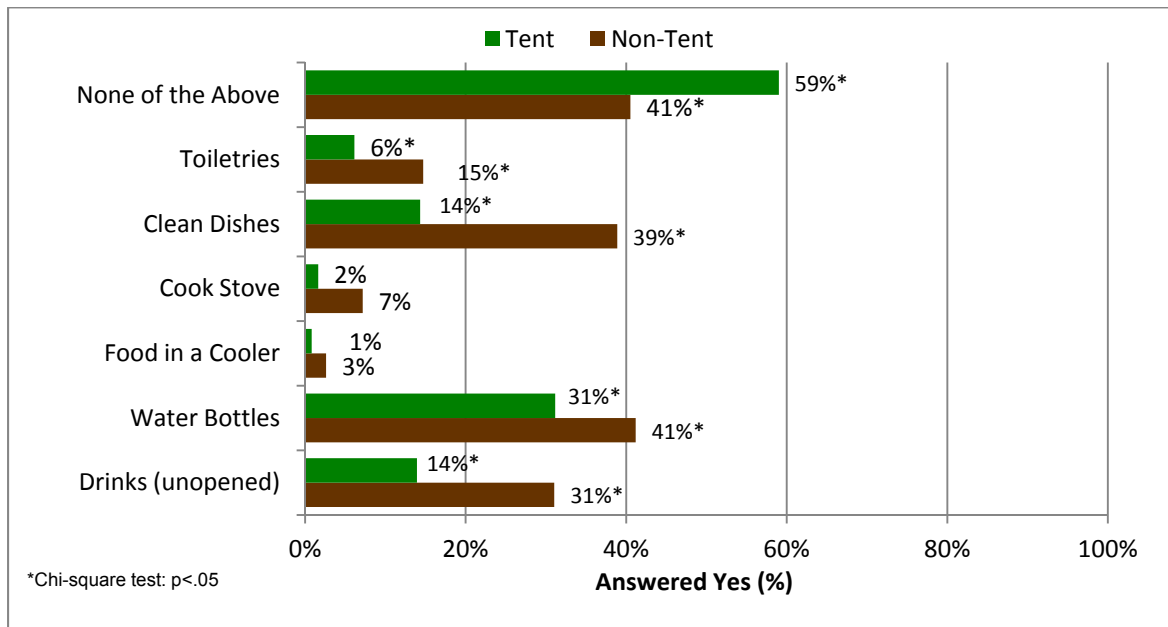
Next we evaluated campers' answers to the food storage question after controlling for where they accessed Be Bear Aware information. The only source of information that resulted in a significantly higher percentage of campers providing the correct answer was whether or not the camper had seen the sign "Be Bear Aware! Food & Odors Attract Bears" (see Figure 3). This result shows an association between seeing the sign and knowing the park's food storage policy.

Figure 3. Knowledge of Each Item in GRTE's Food Storage Policy by Sign Sighting (for only "Be Bear Aware! Food and Odors Attract Bears" sign).



We also evaluated the food storage question in light of different trip characteristics and found that knowledge of the park's food storage policy was significantly greater among those campers who were staying in a tent compared to those who were not staying in a tent (Figure 4).

Figure 4. Knowledge of Food Storage Policy by Overnight Accommodation

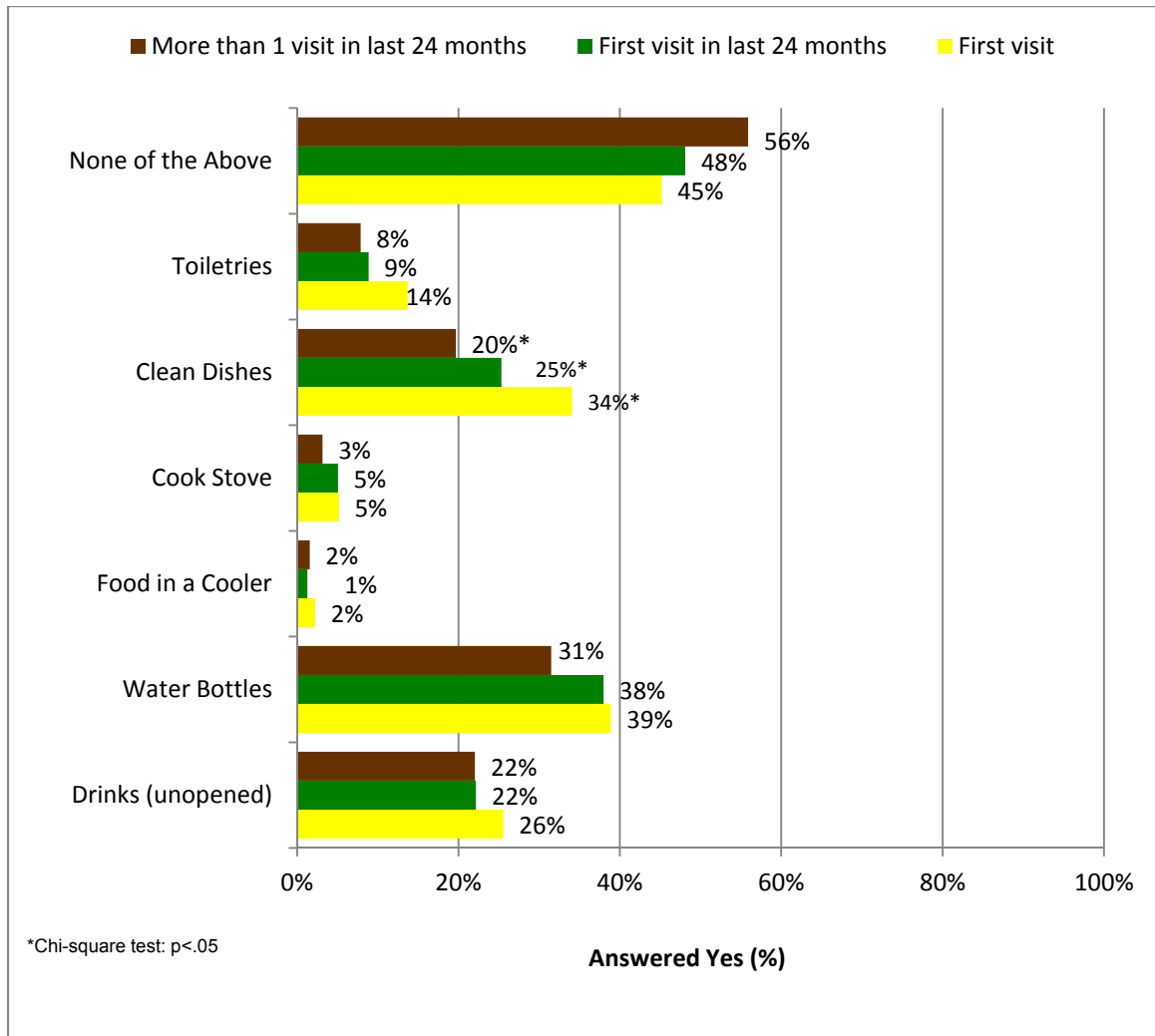


The fact that 59% of those staying in tents answered correctly ("none of the above") compared to earlier tables that showed 49% of the campers answered correctly (see Table 10), implies that

those individuals who are camping in RV's or pop-up trailers are less likely to get this answer right. Why tent campers should be more alert regarding park regulations than campers in pop-up trailers or vans is unknown. The hard-sided vans and/or campers may give some park visitors a false sense of security, as it is difficult to imagine the strength or determination of a bear to penetrate a camper for food.

Furthermore, the number of visits to GRTE was associated with knowledge on proper food storage. Fewer wrong answers were recorded among those campers who visited the park two or more times in the last 24 months compared to those campers for whom it was their first visit in the last 24 months or their first visit ever to the park (Figure 5).

Figure 5. Knowledge of Specific Conditions of Food Storage Policy by Number of Prior Visits



### 5.3. Visitor Behavior While in Bear Country

To assess visitors' behavior while in bear country, a series of questions was asked pertaining to food storage and recreation (questions 14 a-f). Survey participants were asked to respond to the questions on a scale from strongly agree to strongly disagree. Table 11 summarizes the results. The percentage of respondents' providing the correct answer was slightly higher for questions that included storage of food or garbage compared to questions on storage of personal products or leaving the car windows open for ventilation. These results suggest that most campers and

picnickers were storing food and trash in accordance with the park’s policy. However, slightly lower percentages said they were storing non-food items such as wash tubs, dishes and personal products appropriately.

Table 71. Knowledge of Proper Food Storage Behavior for Campers and Picnickers

Statement <sup>1</sup>	Campers		Picnickers		All	
	Agree	Disagree	Agree	Disagree	Agree	Disagree
Garbage must be stored in the same manner as food.	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%
I always store my food in a bear box or the car when not in use.	98.7%	0.9%	95.5%	4.5%	98.5%	1.3%
I still need to be concerned about food smells when out on a hike.	98.8%	0.9%	100.0%	0.0%	98.9%	0.8%
Wash tubs, basins & dishes must be stored in the same manner as food.*	92.2%	5.3%	83.0%	13.9%	91.2%	6.1%
Personal products must be stored in a bear box or the car.	89.3%	8.3%	89.2%	10.8%	89.3%	8.6%
Car windows should not be left open even an inch for ventilation.	87.8%	11.0%	87.5%	9.4%	87.7%	10.8%

Agree equals the combined results for “strongly agree” and “agree somewhat.”

Disagree equals the combined results for “strongly disagree” and “disagree somewhat.”

Neutral responses are not shown (see Appendix A, questions 14 a-f).

\*Chi-square test:  $p < .05$

#### 5.4. Application of Be Bear Aware Information beyond the Campground

To find out if information on how to recreate safely and responsibly while in the park was reaching visitors, a series of questions related to this topic (questions 21a-g) were asked. The questions on bear behavior were generated directly from material presented in the park’s newspaper. Campers and picnickers overwhelmingly agreed with the statement that black bears are a threat to humans, that bears move around day and night, that grizzly bears live in GRTE, and that running away from a bear can cause an aggressive response in the bear (see Table 12). Two questions on which campers and picnickers did not answer as well were: dropping food or a backpack to distract a bear, and knowing when a bear will turn aggressive (especially campers). Differences between campers and picnickers were not substantial enough to create a statistically significant difference on any of the questions.

Table 12. Knowledge of Recreating Safely While in Bear Country for Campers and Picnickers

Statement	Campers		Picnickers		All	
	Agree	Disagree	Agree	Disagree	Agree	Disagree
Running away from a bear can cause an aggressive response	98.9%	0.7%	97.0%	3.0%	98.7%	0.9%
Bears only move around at night	1.6%	98.1%	0.0%	98.5%	1.5%	98.1%
Grizzly bears live in GRTE	97.3%	2.2%	96.6%	1.7%	97.2%	2.1%
Black bears are not a threat to humans.	3.4%	95.5%	0.0%	86.5%	3.0%	96.0%
It is unlikely that a bear will enter this campground or picnic area while people are here.	9.0%	88.4%	9.2%	87.8%	8.9%	88.3%
If a bear approaches a person, a good strategy to distract the bear is dropping food or a backpack.	15.6%	82.4%	17.8%	77.5%	15.8%	81.9%
I have read so much about bears that I think I am able to predict when a bear will turn aggressive.	13.2%	81.2%	3.2%	90.5%	12.2%	82.2%

Agree equals the combined results for “strongly agree” and “agree somewhat” while Disagree equals the combined results for “strongly disagree” and “disagree somewhat.” Neutral responses are not shown (see Appendix A, questions 21 a - g).

A critical question here is whether awareness of park food storage policies is related in some measure to visitors’ beliefs about recreation in bear country. Using the **awareness** scale, the association of awareness of park policies on food storage was examined with beliefs about bear behavior. The question addressed with this analysis was whether visitors who had misinformation about bears, also carried misinformation about food storage.

Table 13. Pearson Correlation and Significance Level of Awareness and Beliefs about Bear Behavior

Statement	Pearson Correlation and Significance
I have read so much about bears that I think I am able to predict when a bear will turn aggressive.	-.113, p=.004
If a bear approaches a person, a good strategy to distract the bear is dropping food or a backpack.	-.216, p=.000
Bears only move around at night	-.041, p=.303
Grizzlies live in GRTE	-.042, p=.300
Running away from a bear can cause an aggressive response	-.053, p=.185
It is unlikely that a bear will enter this campground or picnic area while people are here.	-.040, p=.315
Bears only move around at night	-.041, p=.303

In Table 13, the awareness scale varies from 0 – 7, with zero being the most or better informed visitor about park policies. The answers to the statements on beliefs about bears vary from 1 to 5, with 1 being strongly agree to 5 being strongly disagree. Therefore, a negative association means that individuals who agree with a statement on bears (“I believe I can predict when a bear will turn aggressive”), thought more items could be stored in the tent. Similarly, those individuals who think it is appropriate to drop a backpack if a bear aggresses, also are less likely to know food storage policies. Other belief statements about bears are associated in the same direction with knowledge of bear policies. but to have two of seven belief statements about bears related to food storage policies is not a coincidence. Perhaps those individuals who think they know bears are less likely to pay attention to the food storage policies.

### 5.5. Most Important Bear Safety Information to Visitors

Campers and picnickers indicated that GRTE material (which includes signs, handouts and the park newspaper), provided the most important information in educating them about proper food storage and recreating safely in bear country (see Table 14).

Table 8. Most Important Source of Bear Safety Information for Campers and Picnickers

Information Source	Campers	Picnickers	All
GRTE material <sup>1</sup>	43.6%	43.3%	43.7%
Verbal <sup>2</sup>	27.3%	17.9%	26.3%
Personal experience	14.6%	13.4%	14.4%
Material from other parks	6.0%	12.0%	6.6%
Other <sup>3</sup>	8.5%	13.5%	9.0%

<sup>1</sup>GRTE material equals the combined results for “Grand Teton website” and “Other Grand Teton material.”

<sup>2</sup>Verbal equals the combined results for “talking with park personnel” and “talking with friends or family members.”

<sup>3</sup>Other equals the combined results for “TV programs”, “news” and “other material.”

However, verbal explanations were an important second area of information for the campers, perhaps because of the volunteers who tour the campgrounds helping to spread the “Be Bear Aware” message. Research on learning has suggested for a long time that some people learn best by reading, and others learn best by hearing. Therefore, campfire programs, visits from the Bear Brigade volunteers, and direct contact with rangers may be critically important to educating those visitors who presently do not follow the guidelines.

Of course, a number of respondents reported from their own experiences that they were wary of bears and knew how powerful a bear’s senses could be. Said one respondent, “I saw a bear tear down a tent in Yosemite for a gum wrapper.” Such an experience is likely to leave such an impression that the park visitor will store food appropriately. On the other hand, some respondents suggested that the bears they have met are rather passive, and simply move off the trail when both a human and the bear are occupying the same space. Other respondent comments are available in the appendices.

## 5.6. Identification of Camper Subgroups

Latent Class Analysis helps to identify different groups of respondents (in this case, campers) based on how they responded to the food and product storage statements. As described earlier, the LCA combines common patterns of responses to yield identifiable groups. The LCA revealed a four-group typology. Table 15 summarizes the conditional probabilities of answering “yes” to a series of items presented in the survey question: “According to the park, which of the following can be kept in a tent overnight?” For instance, a camper in Group 3 has a 74% chance of saying that it is okay to keep clean dishes in the tent overnight. 61% of the campers in Group 3 has a 61% chance of saying that it is okay to keep a water bottle in the tent overnight. For campers in group 4, there was a 41% chance of saying that it was all right to store a cook stove in the tent overnight. The last row in Table 15 presents the proportion of each group in the sample.

Table 95. Latent Class Analysis (or Latent Structure) Results for Campers on Probability of Answering “yes” to Storing an Item in a Tent Overnight

Items	Conditional probability of answering “yes” to the item being stored in a tent overnight			
	Groups			
	1 Highly Aware	2 Good Awareness	3 Some Awareness	4 Unaware
None of the above	1.00	0.00	0.00	0.01
Water bottles	0.00	1.00	0.61	0.86
Clean dishes	0.00	0.01	0.74	0.90
Canned drinks (unopened)	0.00	0.19	0.51	0.97
Toiletries	0.00	0.04	0.21	0.98
Cook stove	0.00	0.03	0.08	0.41
Any food in a cooler	0.00	0.04	0.01	0.27
Uncooked food in its original wrapping	0.00	0.00	0.01	0.39
Pet food bowls	0.00	0.02	0.01	0.28
Snacks	0.00	0.00	0.00	0.33
Dry dog food	0.00	0.00	0.00	0.07
<b>Group percent</b>	<b>49%</b>	<b>13%</b>	<b>35%</b>	<b>3%</b>

To assist the reader in understanding the LCA results, descriptions were developed with corresponding labels for each group (see Table 16). For example, for those campers with “some awareness” there was the knowledge that food should not be kept in the tent, but canned drinks, clean dishes, and toiletries were believed to be okay. Fortunately for the park, only 3% of campers – the “unaware” group – had no idea as to what can be stored in a tent overnight.

Water bottles and canned drinks were the two items that were the most frequently misidentified as acceptable items in a tent overnight. These items were followed by clean dishes and toiletries. Knowledge among campers (and possibly picnickers) could be markedly improved in about 38% of the visitors – namely the unaware and the somewhat aware groups.

Table 106. Latent Class Analysis (of Latent Structure) Subgroup Descriptions for Four Groups

LCA Group	Bear Aware Level	Label	Description
Group 1	High ↓ Low	Highly Aware	Provided the correct answer to the question – none of the above (49%)
Group 2		Great Awareness	Said yes to water bottles (13%)
Group 3		Some Awareness	Said yes to non-food items – unopened canned drinks, water bottles, and/or clean dishes (35%)
Group 4		Unaware	Expressed absolutely no idea about the park’s food storage policy (3%)

## 6. Summary

WYSAC collected information on the visibility of Be Bear Aware signs, access to and use of Be Bear Aware information, visitor knowledge of GRTE’s food storage policy and guidelines for safe recreation while in bear country, and self-reported behavior of visitors while in the park. The purpose of collecting this information was to evaluate the public education and information component of the Be Bear Aware program and to inform park managers on the effectiveness of this part of the program.

The materials created for Be Bear Aware were seen, accessed, and understood by a majority of campers and picnickers visiting the park during the summer of 2010. There is evidence, however, of gaps in park visitors’ knowledge about storage of **non-food items**, what to do (or not to do) when **encountering a bear**, and **bear behavior**.

### *Storage of Non-Food Items*

Nearly all campers and picnickers (over 98% combined) knew that they stored their food and garbage should be stored in a vehicle, a bear box, or the dumpster. The percentage of visitors who knew to store their non-food items in the same manner as food was 6 to 10 percentage points lower. Furthermore, about a third of campers incorrectly selected non-food items (i.e., water bottles, canned drinks, clean dishes) as being allowed in a tent overnight. Fortunately only 3% of campers did not know any of the park’s **food** storage policy when asked what can be stored in a tent overnight. These findings suggest that more than a third of visitors did not know or did not follow the park’s policy regarding storage of non-food items.

### *Be Bear Aware Beyond the Campground & Picnic Areas*

A surprising number of campers and picnickers (16% combined) indicated that dropping food or a backpack was a good strategy for distracting a bear if one should approach. Strategies for what to do should a visitor encounter a bear are clearly laid out in the park’s newspaper, the *Teewinot*. Although significantly fewer picnickers said they received Be Bear Aware information at the park entrance than campers (and even fewer read the information), the percentage of each group agreeing with this strategy was the same. The park newspaper also clearly stated that a bear’s behavior cannot be predicted. Yet 13% of campers said they had read enough about bears to think they could predict when a bear would turn aggressive.



Interestingly, but not too surprisingly, those individuals who believed they could predict bear behavior were less likely to be aware of the park's food storage policies. This finding may point park managers toward an additional element in the Be Bear Aware Program: to advise visitors that there is no known method to predict bear behavior.

In conclusion, there is clear evidence that the "Be Bear Aware" message is getting to park visitors, both campers and picnickers. In fact, the great majority of respondents could identify signs and messages of the program. Identifying the signs is in some sense an independent validation of the message of the program, since knowing the signs does not necessarily emerge from reading or hearing about the food storage message. However, there is apparently a small yet worrisome group of visitors who either have their own firm beliefs or do not hear or see the program message. How to reach these individuals is part of the continuing dilemma of working in the national parks, providing access to natural resources for all park visitors, yet in a manner that will assure future generations also have that access.

### **7. Possible Future Directions in the Be Bear Aware Program**

After reviewing the results of this study and talking with members of the NPS staff and Bear Brigade volunteers, we offer these suggestions for refinement in the Be Bear Aware program. We do understand that as researchers rather than staffers in the day-to-day operations of the park, we are not privy to all the limitations (and possibilities) facing program managers. We offer these suggestions as possibilities for future discussions on the Be Bear Aware program.

1. People learn both by reading and by hearing, with some people learning from only one approach. It is important not only to provide written material, but also to have constant conversations with park visitors. These conversations were in fact obvious at the various campground registration areas. However, not once in the fourteen entrances in the park over the course of this project, did this project's principal investigator hear at an entrance station, "This is bear country.....". Park officials have much to do when checking visitors into the park, but signs alone will not sufficiently warn people about dangers they create for themselves and others if they are not prepared to "Be Bear Aware." We suggest that some oral message come directly from rangers and volunteers staffing the entrance stations.
2. There is considerable traffic from Yellowstone into Grand Teton National Park, but there is virtually no staffing for that direction of traffic at the entrance to GRTE. We found this to be a noticeable lacuna in receipt of material on bear problems in Grand Teton. Over the past twenty years, grizzly bears have moved from Yellowstone into the Bridger-Teton National Forest, and into Grand Teton National Park. If one has not studied the park, or lived in the area of the parks, the history of Yellowstone as the residue of western wildlife may loom larger than the actual present conditions. Hence, visitors from Yellowstone may not be as aware of problems with bears in Grand Teton, and may need more education than they presently receive on the drive from Yellowstone to Grand Teton.
3. Finally, three of the five bear warning signs were reported being seen by at least three-quarters of the park campers and picnickers. However, the "You can help save a bear" sign, posted in virtually all of the restrooms which we visited did not receive the same measure of identification. It may be that the white background of the sign blends with the mirror background on which it is posted. Therefore, the sign color might be changed to make it more visible.

We would be pleased to discuss these findings further with the National Park Service, and the Grand Teton National Park staff. We have enjoyed this research and the opportunity to be part of the process of protecting our parks.

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## Appendices

### Appendix A. Survey Results

Detailed results from the survey are presented below. Frequency counts represent the actual number of responses for each survey question. Survey responses of *Don't Know*, *No Answer* or *Refused* are excluded from the percentage calculations. Percentages for *Mark All that Apply* survey items (i.e., questions for which multiple response choices are possible) may total more than 100%.

**Hello. I'm a researcher from the University of Wyoming, and Grand Teton National Park has asked us to help with research on their "Be Bear Aware Program." My name is \_\_\_\_\_ [first name] and I only need about 10 or 12 minutes to ask one person some important questions about your visit her in Grand Teton National Park.**

**Would you be able to help me out with this?**

**[If yes] That's great – I first need to ask you two questions before we do the survey and all information will be kept confidential. Are you at least 18 years of age?**

**[If yes] Have you taken a survey this summer while visiting Grand Teton National Park on food storage at your campsite or picnic area?**

**[If no] Great; we can continue. Let me just remind you that I need only one person to answer these questions.**

**Q2. Is this your first visit to Grand Teton National Park?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	272	48.0%	24	35.8%	296	46.7%
No	295	52.0%	43	64.2%	338	53.3%
Total	567	100.0%	67	100.0%	634	100.0%

Q2a. [If not first visit] How many times have you visited Grand Teton in the last 24 months?

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
1 time	162	55.5%	18	41.9%	180	53.7%
2 times	85	29.1%	12	27.9%	97	29.0%
3 - 5 times	29	10.0%	3	7.0%	32	9.6%
6-10 times	8	2.6%	3	7.0%	11	3.3%
11 or more times	8	2.8%	7	16.3%	15	4.4%
Total valid	294	100.0%	43	100.0%	337	100.0%
No answer	3		0		3	
System missing	270		24		294	
Total missing	273		24		297	
Total	567		67		634	

\*Chi-square test: p<.001

Q3. On this visit, how long have you been in Grand Teton? (DAYS)

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
1 day	123	26.4%	12	38.7%	135	27.4%
2 days	107	23.3%	6	19.4%	113	23.0%
3 days	86	18.9%	5	16.1%	91	18.5%
4 days	46	10.1%	3	9.7%	49	10.0%
5 - 7 days	65	13.8%	4	12.9%	69	14.1%
more than 7 days	34	7.5%	1	3.2%	35	7.2%
Total valid	455	100.0%	31	100.0%	492	100.0%
System missing	104		36		140	
Total	565		67		632	

OR

Q3. On this visit, how long have you been in Grand Teton? (Hours)

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
1	13	12.3%	13	36.1%	26	18.3%
2	17	16.0%	7	19.4%	24	16.9%
3	11	10.4%	8	22.2%	19	13.4%
4	11	10.4%	6	16.7%	17	12.0%
5	5	4.7%	0	0.0%	5	3.5%
6	12	11.3%	2	5.6%	14	9.7%
7	2	1.9%	0	0.0%	2	1.4%
8	11	10.4%	0	0.0%	11	7.7%
9	3	2.8%	0	0.0%	3	2.1%
10	1	.9%	0	0.0%	1	0.7%
11	1	1.0%	0	0.0%	1	0.7%
12	19	17.9%	0	0.0%	19	13.4%
Total valid	106	100.0%	36	100.0%	142	100.0%
System missing	455		31		486	
Total	561		67		628	

Q4. How long do you expect to stay? (DAYS)

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
1 day	27	4.7%	12	27.9%	39	6.3%
2 days	92	16.3%	7	16.3%	99	16.3%
3 days	110	19.7%	4	9.3%	114	18.9%
4 days	96	17.2%	8	18.6%	104	17.3%
5 - 7 days	153	26.5%	10	25.6%	164	26.4%
7 or more days	89	15.7%	1	2.3%	89	14.8%
Total valid	567	100.0%	43	100.0%	609	100.0%
System missing	0		25		25	
Total	567		67		634	

\*Chi-square test: p<.001

OR

Q4. How long do you expect to stay? (Hours)

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
1	0		2	8.3%	2	8.3%
2	0		2	8.3%	2	8.3%
3	0		3	12.5%	3	12.5%
4	0		1	4.2%	1	4.2%
5	0		3	12.5%	3	12.5%
6	0		4	16.7%	4	16.7%
7	0		1	4.2%	1	4.2%
8	0		6	25.0%	6	25.0%
9	0		1	4.2%	1	4.2%
12	0		1	4.2%	1	4.2%
Total valid	0		24	100.0%	24	100.0%
System missing	567		43	0.0%	602	
Total	567		67	0.0%	634	

Q5. What type of overnight facility are you using? (Mark all that apply)

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Lodge*	8	1.4%	6	9.0%	14	2.2%
RV / Van*	249	43.6%	6	9.0%	255	39.9%
Pop-up Trailer	61	10.9%	4	6.0%	65	10.4%
Tent Village	32	5.7%	1	1.5%	33	5.3%
Our own tent*	244	43.1%	7	10.4%	251	39.6%
Camping under the stars	5	0.9%	0	0.0%	5	0.8%
Staying outside the park	5	0.9%	25	37.3%	30	4.8%
Haven't decided	0	0.0%	0	0.0%	0	0.0%
Live in the area	2	0.4%	11	16.4%	13	2.1%
Not applicable	0	0.0%	2	3.0%	2	
Other / Don't know*	11	2.0%	13	19.4%	24	
Total	567		67		634	

\*Chi-square test: p<.001

Q6. [If camping] **How many people are staying at your campsite, including yourself?**

	Frequency	%
1 person	23	4.1%
2 - 3 people	293	51.7%
4 - 5 people	170	30.1%
6 or more people	80	14.1%
Total valid	566	100.0%
No answer	1	
System missing	59	
Total missing	60	
Total	626	

Q7. [If picnicker] **How many people are picnicking with you, including yourself?**

	Frequency	%
1 person	2	4.1%
2 - 3 people	17	51.6%
4 - 5 people	23	30.2%
6 or more people	24	14.1%
Total valid	66	100.0%
System missing	567	
Total	634	

Q8. **While you are in the park, do you have any food with you?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	565	99.6%	67	100.0%	624	99.7%
No	2	0.4%	0	0.0%	2	.3%
Total valid	567	100.0%	67		626	100.0%
Total	567		67		634	

Q8a. [If has food] **What kind of food do you have with you?**

(Mark all that apply)

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Drinks	545	96.5%	62	92.5%	607	96.0%
Snacks	549	97.2%	63	94.0%	612	96.8%
Foods for meals*†	539	95.4%	56	83.6%	595	94.1%
Pet food	95	16.8%	1	1.5%	96	15.2%

\*Chi-square test:  $p < .001$

Q9. **When you are not eating or preparing a meal, how do you or would you store your food when you are at your campsite or picnic table? ... What about your trash?**

(Mark all that apply)

FOOD

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
In the car	366	64.7%	47	70.1%	413	65.2%
On the table / campsite area*	31	5.5%	15	22.4%	46	7.3%
In the food storage lockers (Bear Boxes)*	107	18.9%	5	7.5%	112	17.7%
In the tent	5	0.9%	0	0.0%	5	0.8%
Hard side (RV / Van)	194	34.7%	2	3.0%	196	31.3%
Pop up tent	16	2.9%	1	1.5%	17	2.7%
Hanging in tree	0	0.0%	0	0.0%	0	0.0%
Dumpster	0	0.0%	0	0.0%	0	0.0%
Burn	0	0.0%	0	0.0%	0	0.0%

\*Chi-square test:  $p < .05$

TRASH

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
In the car	149	26.3%	20	29.9%	169	26.7%
On the table / campsite area*	51	9.0%	13	19.4%	64	10.1%
In the food storage lockers (Bear Boxes)	35	6.2%	3	4.5%	38	6.0%
In the tent	0	0.0%	0	0.0%	0	0.0%
Hard side (RV / Van)	89	15.9%	1	1.5%	90	14.4%
Pop up tent	4	0.7%	1	1.5%	5	0.8%
Hanging in tree	1	0.2%	0	0.0%	1	0.2%
Dumpster	334	59.7%	38	56.7%	372	59.4%
Burn	2	0.4%	0	0.0%	2	0.3%

\*Chi-square test:  $p < .05$



Q10. How do you or would you store your food when you are not at your campsite or picnic table? ... What about your trash? (Mark all that apply)

FOOD

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
In the car*†	370	65.7%	55	82.1%	425	67.1%
On the table / campsite area	0	0.0%	2	3.0%	2	0.3%
In the food storage lockers (Bear Boxes)	105	18.7%	4	6.0%	109	17.3%
In the tent	2	0.4%	0	0.0%	2	0.3%
Backpack	1	0.2%	0	0.0%	1	0.2%
Hard side (RV / Van)	186	33.3%	2	3.0%	188	30.0%
Pop up tent	14	2.5%	0	0.0%	14	2.2%
On person	1	0.2%	0	0.0%	1	0.2%
Hanging in tree	0	0.0%	0	0.0%	0	0.0%
Dumpster	0	0.0%	0	0.0%	0	0.0%
Burn	0	0.0%	0	0.0%	0	0.0%

\*Chi-square test: p<.05

TRASH

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
In the car*	157	27.9%	29	43.3%	186	29.6%
On the table / campsite area	3	0.5%	1	1.5%	4	0.6%
In the food storage lockers (Bear Boxes)	29	5.2%	2	3.0%	31	5.0%
In the tent	0	0.0%	0	0.0%	0	0.0%
Backpack	0	0.0%	0	0.0%	0	0.0%
Hard side (RV / Van)	73	13.1%	1	1.5%	74	11.8%
Pop up tent	3	0.5%	1	1.5%	4	0.6%
On person	1	0.2%	0	0.0%	1	0.2%
Hanging in tree	1	0.2%	0	0.0%	1	0.2%
Dumpster	374	66.9%	40	59.7%	414	66.1%
Burn	0	0.0%	0	0.0%	0	0.0%

\*Chi-square test: p<.05

Q11. [If answered food storage locker to 9 or 10, skip to 13] **Do you know what the park service's food storage lockers (Bear Boxes) are?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	361	81.3%	41	71.9%	402	80.2%
No	83	18.7%	16	28.1%	99	19.8%
Total valid	444	100.0%	57	100.0%	501	100.0%
DK/ NA	5		1		6	
System missing	118		9		127	
Total missing	123		10		133	
Total	567		67		634	

Q12. [If knows about lockers] **Where is the closest park food storage locker (Bear Box) to this site?** (Do not read answer choices).

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Identifies location	158	86.8%	19	86.4%	174	87.0%
After some time, identifies location	9	5.1%	0	0.0%	9	4.5%
Misidentifies location	15	7.9%	3	13.6%	17	8.5%
Total valid	182	100.0%	22	100.0%	204	100.0%
DK/NA	177		19		196	
System missing	204		26		230	
Total missing	381		45		426	
Total	563		67		630	

Q13. Whether you are in a tent or an RV or just picnicking, we want to know what you think the park's policy is on food storage. According to the park, which of the following can be kept in a tent overnight? (Mark as many as affirmed)

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Snacks	5	0.9%	2	3.0%	7	1.1%
Dry dog food	2	0.4%	0	0.0%	2	0.3%
Canned drinks (unopened) *	132	23.3%	27	40.3%	159	25.1%
Water bottles*	207	36.6%	43	64.2%	250	39.5%
Any food in a cooler	10	1.8%	1	1.5%	11	1.7%
Cook stove	26	4.6%	2	3.0%	28	4.4%
Pet food bowls	8	1.4%	0	0.0%	8	1.3%
Clean dishes	158	27.9%	26	38.8%	183	29.1%
Uncooked food in its original wrapping/packaging	9	1.6%	1	1.5%	10	1.6%
Toiletries*	62	11.0%	14	20.9%	76	12.0%
None of the above*	277	48.9%	19	28.4%	295	46.8%
No answer	3	0.5%	0	0.0%	3	0.5%

\*Chi-square test:  $p < .05$

This is the last set of food storage questions. Just tell me whether you strongly agree, agree somewhat, are neutral, disagree somewhat, strongly disagree or don't know for the following statements.

Q14a. I always store my food when not in use in a bear resistant container or in the car.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	532	93.8%	61	91.0%	593	93.5%
Agree somewhat	28	4.9%	3	4.5%	31	4.9%
Neutral	2	0.4%	0	0.0%	2	0.3%
Disagree somewhat	4	0.7%	3	4.5%	7	1.1%
Strongly disagree	1	0.2%	0	0.0%	1	0.2%
Total valid	567	100.0%	67	100.0%	634	100.0%
Total	567		67		634	

Q14b. Garbage must be stored in the same manner as food, or placed in bear-resistant trashcans.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	560	98.8%	66	98.5%	626	98.7%
Agree somewhat	7	1.2%	1	1.5%	8	1.3%
Neutral	0	0.0%	0	0.0%	0	0.0%
Disagree somewhat	0	0.0%	0	0.0%	0	0.0%
Strongly disagree	0	0.0%	0	0.0%	0	0.0%
Total valid	567	100.0%	67	100.0%	634	100.0%
Total	567		67		634	

Q14c. Personal products such as soap, deodorant, toothpaste, sunscreen, and bug spray do not have to be stored in bear safety containers or in the car.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	19	3.4%	4	6.2%	23	3.7%
Agree somewhat	26	4.7%	3	4.6%	29	4.7%
Neutral	14	2.5%	0	0.0%	14	2.3%
Disagree somewhat	32	5.8%	6	9.2%	38	6.1%
Strongly disagree	462	83.7%	52	80.0%	514	83.2%
Total valid	553	100.0%	65	100.0%	618	100.0%
Don't know	14		2		26	
Total	567		67		634	

Q14d. Wash tubs, basins, and dishes must be stored in the same manner as food.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	467	84.4%	45	69.2%	512	82.3%
Agree somewhat	43	7.8%	9	13.8%	52	8.4%
Neutral	14	2.5%	2	3.1%	16	2.6%
Disagree somewhat	18	3.3%	7	10.8%	25	4.0%
Strongly disagree	11	2.0%	2	3.1%	13	2.1%
Total valid	553	100.0%	65	100.0%	618	100.0%
Don't know	6		2		8	
Total	559		67		626	

\*Chi-square test:  $p < .05$

Q14e. When I store food in the car, I can leave the windows cracked one inch or less for ventilation.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	22	4.1%	4	6.3%	26	4.3%
Agree somewhat	37	6.9%	2	3.1%	39	6.5%
Neutral	8	1.5%	2	3.1%	10	1.7%
Disagree somewhat	36	6.7%	5	7.8%	41	6.8%
Strongly disagree	444	81.2%	51	79.7%	495	81.0%
Total valid	547	100.0%	64	100.0%	611	100.0%
Don't know	19		3		22	
No Answer	1		0		1	
Total missing	20		3		23	
Total	567		67		634	

Q14f. When out on a hike, I still need to be concerned about smells from any food I carry.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	527	93.6%	65	97.0%	592	94.0%
Agree somewhat	29	5.2%	2	3.0%	31	4.9%
Neutral	2	0.4%	0	0.0%	2	0.3%
Disagree somewhat	0	0.0%	0	0.0%	0	0.0%
Strongly disagree	5	0.9%	0	0.0%	5	0.8%
Total valid	563	100.0%	67	100.0%	630	100.0%
Don't know	4		0		4	
Total	567		67		634	

Now I want to ask you some questions about the park's Be Bear Aware program. Grand Teton National Park has been trying to educate visitors about safe and responsible recreation in bear country. We want to know how much you might know about this program and its message. There are no right or wrong answers; the best answers tell us what you really remember.

Q15. When planning your trip to the park, did you access the web site for Grand Teton?

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	305	54.4%	32	48.5%	337	53.7%
No	256	45.6%	34	51.5%	290	46.3%
Total valid	561	100.0%	66	100.0%	627	100.0%
Don't know / No answer	6		1		7	
Total	567		67		634	

Q15a. [If viewed a website] Did you read any of the information on proper food storage on the website?

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	147	51.6%	11	35.5%	158	50.0%
No	94	33.0%	12	38.7%	106	33.5%
Didn't notice it on the site	44	15.4%	8	25.8%	52	16.5%
Total valid	285	100.0%	31	100.0%	316	100.0%
Don't know / No answer	20		1		21	
System missing	258		35		293	
Total missing	278		36		314	
Total	563		67		630	

Q16. Did you receive any printed material when you entered the park regarding safe and responsible recreation in bear country?

	Campers		Picnickers		All	
	N	%	N	%	N	%
Yes	405	72.6%	40	60.6%	445	71.3%
No	139	24.9%	19	28.8%	157	25.5%
No, I already had copies of the information.	14	2.5%	7	10.6%	21	3.4%
Total valid	558	100.0%	66	100.0%	624	100.0%
Don't know / No answer	9		1		10	
Total	567		67		634	

\*Chi-square test:  $p < .05$

Q16a. [If received materials at park entry] **Did you read that material?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes, I read all of it	204	50.5%	12	30.8%	216	48.8%
Yes, I read some of it	131	32.4%	13	33.3%	144	32.5%
I haven't gotten around to reading it	19	4.7%	5	12.8%	24	5.4%
I didn't read the parts about bear awareness	2	0.5%	0	0.0	2	.5%
I haven't read any of it	48	12.1%	9	23.1%	57	13.0%
Total valid	404	100.0%	39	100.0%	443	100.0%
DK/NA	160		27		2	
System missing	1		1		187	
Total missing	161		28		189	
Total	565		67		632	

\*Chi-square test:  $p < .05$

Q17. **Did you receive any printed material when you entered the campground or picnic area regarding safe and responsible recreation in bear country?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	419	77.4%	7	10.8%	426	70.7%
No	110	20.3%	58	89.2%	168	27.7%
No, I already had copies of the information.	12	2.2%	0	0.0%	12	2.0%
Total valid	541	100.0%	65	100.0%	606	100.0%
DK/NA	26		2		28	
Total	567		67		634	

\*Chi-square test:  $p < .001$



Q17a. [If received materials at campground or picnic area] **Did you read that material?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes, I read all of it	218	52.4%	4	57.1%	222	52.5%
Yes, I read some of it	119	28.6%	2	28.6%	121	28.6%
I haven't gotten around to reading it yet	23	5.5%	0	0.0%	23	5.4%
I didn't read the parts about bear awareness	1	0.2%	0	0.0%	1	.2%
I haven't read any of it	55	13.2%	1	14.3%	56	13.2%
Total valid	416	100.0%	7	100.0%	423	100.0%
DK/NA	3		0		3	
System missing	145		60		205	
Total missing	148		60		208	
Total	564		67		631	

Q18. **Did you receive a spoken explanation about the importance of safe and responsible recreation in bear country?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	315	57.9%	14	21.9%	329	54.1%
A little	40	7.5%	2	3.1%	42	7.0%
No	187	34.9%	48	75.0%	235	39.2%
Total valid	542	100.0%	64	100.0%	606	100.0%
DK/NA	23		3		26	
Total	565		67		632	

\*Chi-square test:  $p < .001$

Q18a. [If received spoken explanation] **Where did you receive that explanation?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
In a campfire program	23	6.5%	1	6.3%	23	6.5%
At campground registration*	271	76.8%	6	37.5%	277	75.1%
From a ranger on patrol	33	9.3%	2	12.5%	35	9.5%
At the visitor center	32	9.1%	3	18.6%	35	9.5%
From a campground host/concessionaire on patrol	39	11.0%	2	12.5%	41	11.1%
Other*	34	9.6%	4	25.0%	37	10.3%
DK/NA	5	1.4%	0	0.0%	5	1.3%

\*Chi-square test:  $p < .001$

→See Appendix I. 'Other' responses to most valuable information in bear country

Q19. **Lots of people have told us that they get information about safety in bear country from a variety of sources. Of all the information you have received on safety in bear country, which one had the greatest impression?**

	Campers		Picnickers		All	
	N	%	N	%	N	%
TV programs	18	3.3%	1	1.5%	19	3.1%
Grand Teton website	17	3.1%	0	0.0%	17	2.8%
Grand Teton material	223	40.6%	29	43.3%	252	40.9%
Talking with park personnel	106	19.3%	5	7.5%	111	18.0%
Talking with friends & family	44	8.0%	7	10.4%	51	8.3%
Other Parks	33	6.0%	8	12.0%	41	6.6%
Other material (books, articles, bear spray info, visuals)	14	2.6%	3	4.5%	17	2.8%
Personal experience	80	14.6%	9	13.4%	89	14.4%
News (Newspaper, News media, Yellowstone Grizzly attack)	14	2.6%	5	7.5%	19	3.1%
Total valid	549	100.0%	67	100.0%	616	100.0%
No answer	17		0		10	
Total	567		67		626	

→See Appendix I. 'Other' responses to most valuable information in bear country

**Q20. There are many different Bear Aware signs you might have seen on this trip. Not everybody sees every sign, so as I show you a sign, please let me know whether or not you remember seeing this sign on this trip to Grand Teton, and if you have seen where it was and how many times. (Note: Number of times seen was not recorded)**

**Q20a. Footprint – Be Bear Aware**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
No	71	12.7%	19	28.4%	90	14.4%
Yes	489	87.3%	48	71.6%	537	85.6%
Total valid	560	100.0%	67	100.0%	627	100.0%
Don't know	6		0		6	
No answer	1		0		1	
Total missing	7		0		7	
Total	567		67		634	

→See Appendix J. - for complete list of locations where signs were witnessed.

**Q20b. Warning – BEAR Frequenting Area**

	Campers		Picnickers		All	
	N	%	N	%	N	%
No	356	64.7%	42	62.7%	398	64.7%
Yes	194	35.3%	25	37.3%	219	35.3%
Total valid	550	100.0%	67	100.0%	617	100.0%
Don't know	14		0		14	
No answer	3		0		3	
Total missing	17		0		17	
Total	567		67		634	

→See Appendix J.- Q20b. Warning – BEAR Frequenting Area. for complete list of locations where signs were witnessed.

**Q20c. Be Bear Aware – Food and Odors Attract Bears**

	Campers		Picnickers		All	
	N	%	N	%	N	%
No	55	9.8%	13	19.7%	68	10.8%
Yes	508	90.2%	53	80.3%	561	89.2%
Total valid	553	100.0%	66	100.0%	629	100.0%
Don't know	3		1		4	
No answer	1		0		1	
Total missing	4		1		5	
Total	567		67		634	

→See Appendix J. - Q20c. Be Bear Aware – Food and Odors Attract Bears. for complete list of locations where signs were witnessed.

**Q20d. You Can Help Save a Bear**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
No	188	33.4%	29	43.3%	217	34.4%
Yes	375	66.6%	38	56.7%	413	65.6%
Total valid	563	100.0%	67	100.0%	630	100.0%
Don't know	4		0		4	
Total missing	4		0		4	
Total	567		67		634	

→See Appendix J. - Q20d. You Can Help Save a Bear. for complete list of locations where signs were witnessed.

**Q20e. Trail closed due to Bear activity**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
No	500	89.1%	57	86.4%	557	88.9%
Yes	61	10.9%	9	13.6%	70	11.1%
Total valid	561	100.0%	66	100.0%	627	100.0%
Don't know	3		1		3	
No answer	3		0		4	
Total missing	6		1		7	
Total	567		67		634	

→See Appendix J. - Q20e. Warning – Trail closed due to Bear activity. for complete list of locations where signs were witnessed.

**Q20f. Be Bear Aware – Food Storage Required**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
No	122	22.1%	15	22.7%	137	22.2%
Yes	429	77.9%	51	77.3%	480	77.8%
Total valid	551	100.0%	66	100.0%	617	100.0%
Don't know	14		1		15	
No answer	2		0		2	
Total missing	16		1		17	
Total	567		67		634	

→See Appendix J. -

Q20f. Be Bear Aware – Food Storage Required. See Appendix J - for complete list of locations where signs were witnessed.

Q21. Now I have a few statements about safety in bear country. Please tell me whether you strongly agree, agree somewhat, are neutral, disagree somewhat, or strongly disagree or don't know with the following statements.

Q21a. I have read so much about bears that I think that I am able to predict when a bear will turn aggressive.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	23	4.2%	1	1.6%	24	3.9%
Agree somewhat	50	9.0%	1	1.6%	51	8.3%
Neutral	31	5.6%	4	6.3%	35	5.7%
Disagree somewhat	56	10.1%	6	9.5%	62	10.1%
Strongly disagree	393	71.1%	51	81.0%	444	72.1%
Total valid	553	100.0%	63	100.0%	616	100.0%
Don't know	14		4		18	
Total	567		67		634	

Q21b. Black bears are not a threat to humans

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	7	1.3%	0	0.0%	7	1.1%
Agree somewhat	12	2.1%	0	0.0%	12	1.9%
Neutral	6	1.1%	0	0.0%	6	1.0%
Disagree somewhat	53	9.5%	3	4.5%	56	8.9%
Strongly disagree	481	86.0%	64	95.5%	545	87.1%
Total valid	559	100.0%	67	100.0%	626	100.0%
Don't know	8				8	
Total	567		67		634	

Q21c. If a bear approaches a person, a good strategy to distract the bear is dropping food or a backpack.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	34	6.5%	6	9.7%	40	6.8%
Agree somewhat	48	9.1%	5	8.1%	53	9.0%
Neutral	11	2.1%	3	4.8%	14	2.4%
Disagree somewhat	40	7.6%	4	6.5%	44	7.5%
Strongly disagree	394	74.8%	44	71.0%	438	74.4%
Total valid	527	100.0%	62	100.0%	589	100.0%
Don't know	38		5		43	
No Answer	2		0		2	
Total missing	39		5		44	
Total	567		67		634	

Q21d. Grizzly bears live in Grand Teton National Park.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	441	85.8%	50	84.7%	491	85.7%
Agree somewhat	59	11.5%	7	11.9%	66	11.5%
Neutral	3	0.6%	1	1.7%	4	0.7%
Disagree somewhat	4	0.8%	0	0.0%	4	0.7%
Strongly disagree	7	1.4%	1	1.7%	8	1.4%
Total valid	514	100.0%	59	100.0%	573	100.0%
Don't know	53		8		61	
Total	567		67		634	

Q21e. Running away from a bear can cause an aggressive response in the bear.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	516	92.6%	62	92.5%	578	92.6%
Agree somewhat	35	6.3%	3	4.5%	36	6.1%
Neutral	2	0.4%	0	0.0%	2	0.3%
Disagree somewhat	1	0.2%	1	1.5%	2	0.3%
Strongly disagree	3	0.5%	1	1.5%	4	0.6%
Total valid	557	100.0%	67	100.0%	624	100.0%
Don't know	10		0		10	
Total	567		67		634	

Q21f. It is unlikely that a bear will enter this campground or picnic area while people are here.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	11	2.0%	1	1.5%	12	1.9%
Agree somewhat	39	7.0%	5	7.6%	44	7.0%
Neutral	15	2.7%	2	3.0%	17	2.7%
Disagree somewhat	72	12.8%	9	13.6%	81	12.9%
Strongly disagree	424	75.6%	49	74.2%	473	75.4%
Total valid	561	100.0%	66	100.0%	627	100.0%
Don't know	6		1		7	
Total	557		67		634	

Q21g. Bears only move around at night.

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Strongly agree	1	0.2%	0	0.0%	1	0.2%
Agree somewhat	8	1.4%	0	0.0%	8	1.3%
Neutral	1	0.2%	1	1.5%	2	0.3%
Disagree somewhat	32	5.6%	1	1.5%	33	5.1%
Strongly disagree	521	92.5%	65	97.0%	586	93.0%
Total valid	563	100.0%	67	100.0%	630	100.0%
Don't know	4		0		4	
Total	567		67		634	



**Q22. How many times have you seen a bear roaming freely?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
0	57	10.1%	6	9.0%	63	9.9%
1	50	8.8%	6	9.0%	55	8.8%
2	65	11.5%	9	13.4%	73	11.7%
3	44	7.9%	5	7.5%	49	7.7%
4	38	6.7%	2	3.0%	40	6.3%
5	38	6.7%	6	9.0%	44	6.9%
6	39	6.9%	6	9.0%	45	7.1%
7	11	1.9%	0	0.0%	11	1.7%
8	11	1.9%	1	1.5%	12	1.9%
9	3	0.5%	0	0.0%	3	0.5%
10	37	6.5%	3	4.5%	40	6.3%
11	2	0.4%	0	0.0%	2	0.3%
12	34	6.1%	4	6.0%	38	6.1%
14	2	0.4%	0	0.0%	2	0.3%
15	5	0.8%	1	1.5%	6	0.8%
16	1	0.2%	0	0.0%	1	0.2%
20	34	6.1%	5	7.5%	39	6.2%
21	1	0.2%	0	0.0%	1	0.2%
24	6	1.1%	1	1.5%	7	1.1%
25	15	2.6%	2	3.0%	17	2.7%
26	1	0.2%	0	0.0%	1	0.2%
30	14	2.5%	0	0.0%	14	2.2%
32	0	0.0%	1	1.5%	1	0.2%
35	1	0.2%	0	0.0%	1	0.2%
40	8	1.4%	3	4.5%	11	1.8%
50	15	2.7%	4	6.0%	19	3.0%
70	1	0.2%	0	0.0%	1	0.2%
75	2	0.4%	0	0.0%	2	0.3%
100	22	3.9%	1	1.5%	23	3.6%
200	5	0.9%	0	0.0%	5	0.8%
250	1	0.2%	0	0.0%	1	0.2%
300	2	0.4%	0	0.0%	2	0.3%
415	1	0.2%	0	0.0%	1	0.2%
500	1	0.2%	0	0.0%	1	0.2%
800	0	0.0%	1	1.5%	1	0.2%
Total valid	567	100.0%	67		634	100.0%

**Q23. How many times have you seen a bear in Grand Teton National Park?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
0	284	56.0%	32	52.5%	316	55.7%
1	96	19.0%	10	16.4%	106	18.7%
2	38	7.5%	5	8.2%	43	7.6%
3	23	4.6%	1	1.6%	24	4.3%
4	8	1.6%	0	0.0%	8	1.4%
5	5	1.0%	7	11.5%	12	2.1%
6	13	2.6%	0	0.0%	13	2.3%
7	3	0.6%	0	0.0%	3	0.5%
8	3	0.6%	1	1.6%	4	0.7%
9	1	0.2%	0	0.0%	1	0.2%
10	9	1.8%	1	1.6%	10	1.8%
11	1	0.2%	0	0.0%	1	0.2%
12	4	0.8%	1	1.6%	5	0.9%
13	1	0.2%	0	0.0%	1	0.2%
15	3	0.6%	2	3.3%	5	0.9%
20	7	1.4%	0	0.0%	7	1.3%
25	3	0.6%	0	0.0%	3	0.5%
50	3	0.6%	1	1.6%	4	0.7%
220	1	0.2%	0	0.0%	1	0.2%
Total valid	506	100.0%	61	100.0%	559	100.0%
No answer	5		0		5	
System	56		6		62	
Total missing	61		0		67	
Total	567		67		634	

**Q24. Have you ever had an encounter with a bear, not including seeing a bear from a distance (e.g., the bear walked near or through your campsite, had damaged property while you were asleep or away from the campsite).**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	275	49.6%	33	50.0%	308	49.7%
No	201	36.1%	21	31.8%	222	35.6%
No, but someone I know did	79	14.3%	12	18.2%	91	14.7%
Total valid	555	100.0%	66	100.0%	621	100.0%
Don't know / No answer	12		1		13	
Total	567		67		634	

**Q24a. Could you describe that encounter? For example, where did it happen? How long did it last?**

→ See Appendix K. Descriptions of bear encounters for complete text listings of responses to Q24a.

**Q24b. How would you characterize the encounter? For example, were you scared or excited?**

(Probe then record whether experience was more positive or negative)

→ See Appendix K.

**I have a few questions to ask about you, for sampling purposes.**

**Q25. In what year were you born? (Recoded into age groups)**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
18-25	29	5.1%	5	7.5%	34	5.4%
26-40	102	18.0%	10	14.9%	112	17.7%
41-55	223	39.3%	31	46.3%	254	40.1%
56-70	187	33.0%	18	26.9%	205	32.3%
70 +	26	4.6%	3	4.5%	29	4.6%
Total valid	567	100.0%	67	100.0%	634	100.0%

**Q26. What is the highest level of education you have completed?**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Some high school	5	0.9%	1	1.5%	6	.9%
High school graduate or GED	51	9.0%	5	7.5%	54	8.8%
Some college or technical school	135	23.8%	13	19.4%	148	23.3%
Bachelor's degree	200	35.3%	25	37.3%	225	35.5%
Graduate degree	176	31.0%	23	34.3%	199	31.4%
Total valid	559	100.0%	67	100.0%	626	100.0%

**Q27. In what state or country do you live?**

	<b>Frequency</b>	<b>Valid Percent</b>
AK	3	0.5%
AL	1	0.2%
AR	5	0.8%
Austria	1	0.2%
AZ	21	3.2%
British Columbia	1	0.2%
CA	65	9.9%
Canada	9	1.4%
China	1	0.2%
CO	48	7.3%
CT	2	0.3%
England	2	0.3%
FL	24	3.7%
France	4	0.6%
GA	2	0.3%
Germany	1	0.2%
Holland	1	0.2%
IA	10	1.5%
ID	29	4.4%
IL	22	3.2%
IN	2	0.3%
Jordan	1	0.2%
KS	8	1.2%
KY	3	0.5%
MA	2	0.3%
MD	5	0.8%
Mexico	1	0.2%
MI	15	2.3%
MN	19	2.9%
MO	17	2.6%
MS	2	0.3%
MT	7	1.1%
NC	4	0.6%
ND	2	0.3%
NE	9	1.4%
Netherlands	3	0.5%
NH	4	0.6%
NJ	2	0.3%
NM	7	1.1%
NV	11	1.7%
NY	9	1.4%
OH	7	1.1%
OK	3	0.5%
OR	23	3.5%

PA	8	1.2%
RI	1	0.2%
SC	2	0.3%
SD	4	0.6%
South Africa	1	0.2%
Switzerland	2	0.3%
Taiwan	1	0.2%
Thailand	1	0.2%
TN	5	0.8%
TX	36	5.6%
United Kingdom	1	0.2%
UT	66	10.0%
VA	8	1.3%
VT	1	0.2%
WA	28	4.3%
WI	21	3.2%
WY	30	4.6%
No answer	23	3.5%
Total	657	100.0%

Q28. Respondent's gender. (Do not ask)

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Male	340	60.8%	37	55.2%	377	60.2%
Female	219	39.2%	30	44.8%	249	39.8%
Total valid	559	100.0%	67	100.0%	626	100.0%
No answer	8		0		8	
Total	567		67		634	

**Thank you so much for your help! Is there anything else you would like to tell us about your visit to Grand Teton?**

→ See Error! Reference source not found. for complete text listings of responses to Q28.

## Screening Questions

(Fill in before or after conducting survey)

### Campground

	Frequency	Valid Percent
Arizona Island	2	0.3%
Colter Bay-Campground	166	25.3%
Colter Bay-Group Site	17	2.6%
Colter Bay-RV	56	8.5%
Colter Bay-Tent Village	33	5.0%
Chapel - Sacred Heart	3	0.5%
Colter Bay	7	1.1%
Cottonwood Creek	1	0.2%
Flag Ranch-Campground	41	6.2%
Flag Ranch-RV	48	7.3%
Grassy Meadow	2	0.3%
Gros Venture	129	19.6%
Jenny Lake	28	4.3%
Lakeview	9	1.4%
Lizard Creek	30	4.6%
random picnic table	1	0.2%
Sergeants Bay	2	0.3%
Signal Mountain	38	5.8%
String Lake	39	5.9%
Taggard	2	0.3%
Two Ocean Lake	2	0.3%
Total valid	657	100.0%

### Food compliance: (Check all that apply)

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	521	93.9%	65	97.0%	586	94.2%
No, drinks not secured	9	1.6%	0	0.0%	9	1.4%
No, food/dishes not secured	13	2.3%	1	1.5%	14	2.3%
No, personal items left out	13	2.3%	1	1.5%	14	2.2%
No, cooler left out	5	0.9%	0	0.0%	5	0.8%
No, trash left out	6	1.1%	0	0.0%	6	1.0%

**Evidence of children:**

	Campers		Picnickers		All	
	Frequency	%	Frequency	%	Frequency	%
Yes	346	62.0%	35	53.8%	381	61.1%
No	212	38.0%	30	46.2%	242	38.9%
Total valid	558	100.0%	65	100.0%	623	100.0%
System missing	7		2		9	
Total	565		67		632	

Appendix B. 'Other' responses to location food was stored while at campsite (q9.food).

- Camp site. (3)
- Hard side (RV, trailer). (198)
- Soft side (Tent, pop up tent). (17)

Appendix C. 'Other' responses to location trash was stored while at campsite (q9.trash).

- Bear box.
- Burn. (2)
- Camp site. (7)
- Dumpster. (375)
- Hard side (RV, trailer). (114)
- Recycle.
- Soft side (Tent, pop up tent). (5)
- Trees.

Appendix D. 'Other' responses to location food was stored while not at campsite (q10.food).

- Backpack
- Camp site. (4)
- Hard side (RV, trailer). (187)
- On person.
- Soft side (Tent, pop up tent). (15)

Appendix E. 'Other' responses to location trash was stored while not at campsite (q10.trash).

- Camp site. (2)
- Dumpster. (417)
- Hard side (RV, trailer). (92)
- Soft side (Tent, pop up tent). (4)
- Trees.

Appendix F. 'Other' responses to 'received any printed material when entered the park regarding safe and responsible information in bear country' (q16).

- Glacier.
- Not entered park. (5)
- Yellowstone. (61)

Appendix G. 'Other' responses to 'did you read that material' (16.a).

- Get it at Rocky.
- Know the info.



Appendix H. 'Other' responses to location of spoken explanation received (Q18a).

- Asked about it but didn't get it.
- Backcountry Ranger. (2)
- Climbers ranch.
- Danny Cornell – Manager at Signal Mountain.
- Dear Camper note. (2)
- Family member.
- Ferry boat captain – Jenny Lake. (6)
- Friends
- Getting backcountry permit.
- Glacier/Yellowstone
- Jenny Lake captain.
- Moran Junction Park entrance.
- No one here.
- Outside of Grand Teton National Park
- Overheard at registration.
- Park Entrance.
- People in next tent site
- Ranger at ranger station-bought bear spray.
- Ranger talks-amphitheater.
- Ranger.
- Ranger Station
- Registration at hotel.
- Rocky Mountain National Park
- Shoshoni National Park
- Snake River guide.
- Stores, asking questions.
- Yellowstone (3)

Appendix I. 'Other' responses to most valuable information in bear country (q19)

- Alaska & Montana Department Fish & Wildlife
- All material (Yellowstone, Teton).
- Articles. (2)
- Back packing experience.
- Backpack magazine.
- Bear group website
- Bear lecture in Wilson, WY.
- Bear safety video for entering backcountry.
- Bear spray info. (2)
- Bear spray website.
- Bears in area in past.
- Books (5)
- Boy scouts. (2)
- Campers at the next site
- Camping at Yosemite.
- Camping in bear country.
- Canadian park information.
- Canadian Park System.
- Current news—grizzly bear attack in Yellowstone.
- Dear Camper note. (3)
- Don't know.
- Experience – charcoal and lighter placed in bear box.
- Fellow campers.
- Glacier National Park information.
- Glacier National Park signs.
- Glacier Park Personnel
- Grew up here.
- Guide books.
- Hearing about bear attacks—especially in Yellowstone.
- Hunters Peak, Shoshone NF – campground hosts.
- Island Park Idaho Bear Aware pamphlet.
- Jackson Hole Daily.
- Kids Ranger Video.
- Live near bears in Colorado (CO).
- Local newspaper. (3)
- Local programs about bear awareness.
- Material in Yellowstone.
- N/A
- News (2)
- News articles (internet).
- News report on Yellowstone Grizzly Attack.
- Newspaper articles in local papers.
- Newspaper. (3)
- NRA Hunting Magazine
- Other park's info (Great Smokey Mountain).
- Other parks. (2)
- Personal Experience (82)
- Pictures at Flag Ranch
- Pictures in the registration Do's and Don't
- Pictures of bear.
- Previous trip.
- Printed material.
- Ranger in Glacier

- Ranger station
- Ranger talk at Mt. Rainier.
- Ranger talk in Yellowstone & Glacier
- Ranger talks.
- REI Websites.
- Save the bear's life campaign/signs.
- Scout Leader
- Sequoia NP material.
- Shoshoni National Park—camp host verbal explanation.
- Survey takers making sure we're getting the point.
- Talking to people at Rocky.
- Talking with rangers in Yellowstone.
- Television – grizzly bear attack.
- Teton campground talk
- Trained on outdoor trips.
- Trip to Alaska (AK)
- Trips to Mcneil River, Alaska.
- UDAP bear spray bear site
- Video in visitor center.
- Visit to Yellowstone years ago.
- Visitor Center—bison video.
- Volunteer at campsite.
- Volunteering in Oregon State Park & Rocky Mountain National Park
- Working at Grand Teton – Marina.
- Works with the department of wildlife in Utah.
- Yellowstone. (2)
- Yellowstone film to enter backcountry.
- Yellowstone Grizzly Attack. (6)
- Yellowstone info in the past.
- Yellowstone material.
- Yellowstone National Park Guide—book and dvd expedition guide.
- Yellowstone National Park material.
- Yellowstone National Park ranger program.
- Yellowstone National Park signs.
- Yellowstone National Park.
- Yellowstone Newsletter.
- Yellowstone Newspaper
- Yellowstone Newspaper—had more info about bear encounter.
- Yellowstone NP videos.
- Yellowstone Park campground.
- Yellowstone Park Personnel. (3)
- Yellowstone video
- Yellowstone Website. (2)
- Yellowstone.
- Yellowstone—info at fishing bridge
- Yosemite – Talked with Park Personnel.
- Yosemite National Park. (3)
- Yosemite National Park—must read and sign park info.

Appendix J. 'Other' responses to location of signs displayed. (q20)

Q20a. Footprint – Be Bear Aware.

- Bear Box. (8)
- Campground. (3)
- Don't know. (3)
- Dumpster. (14)
- Entrance. (4)
- Everywhere. (3)
- Registration. (3)
- Restroom. (3)
- Road. (5)
- Store
- Table. (2)
- Trails
- Visitor Center

Q20b. Warning – BEAR Frequenting Area.

- Campground (3)
- Don't know (2)
- Other Buildings
- Picnic Area
- Registration
- Road (3)
- Trails (2)
- Yellowstone (2)

Q20c. Be Bear Aware – Food and Odors Attract Bears.

- Campground
- Don't know (2)
- Dumpster
- Grand Teton Material (3)
- Picnic Area (2)
- Registration (2)
- Restroom (3)
- Store
- Table (35)

Q20d. You Can Help Save a Bear.

- Don't know (3)
- Grand Teton Material (2)
- Registration (8)
- Restroom (17)
- Store (2)

Q20e. Warning – Trail closed due to Bear activity.

- Don't know.
- Trails

Q20f. Be Bear Aware – Food Storage Required.

- Bear Box (2)
- Campground
- Don't know (4)
- Entrance (5)
- Everywhere
- Posts
- Restroom (2)
- Road (21)
- Trails (2)

Appendix K. Descriptions of bear encounters (q24)

- 50 feet away I saw a bear. Look at me, I looked at him and the bear walked off.
- 7 bears walked through campsite.
- A bear was on trail at Moose Ponds. The bear walked towards us then turned away. We changed our direction.
- A friend's camper. A bear broke in, tore out side window and got friend's food.
- Arkansas –sightings.
- As a little kid a bear roamed through the campground. Another time 30 years ago a bear opened up an ice chest.
- Backpacking, 30+ of us vs. 1 bear, we were aggressive.
- Bear came over the fence and climbed a tree and fell asleep in back yard.
- Bear came towards house; tried to get into trash. Grunted, snorted and tore down my bird feeder.
- Bear. In truck. Going for cooker. Hit bear with board.
- Big horns. Car torn open.
- Black bear at Strawberry Reservoir. Bear was mischievous and removed.
- Bow hunting for elk. I packed an elk, I had blood on me. The bear climbed up a tree after me. I flashed the bear with a camera.
- Cabin in Lake Tahoe, I left trash by garage door and heard a bear tearing in the garbage at night.
- Came into neighborhood outside of house.
- Camping in the Smokey Mountains. A bear rubbed back on the camper. The bear's hair stuck in puddy that seals the corners of the camper.
- Campsite – small black bear – looking for food in NW Arkansas.
- Dark and rainy night, a black bear was on the road and hit it with the car. Died.
- Grand Teton National Park—hiking on Jenny Lake trail with family and heard a bear.
- Grizzly and brown bear walked across hiking path in Glacier.
- Hiking in a group, a bear came along—Glacier National Park.
- Hiking on trail I met a bear, the bear veered off the trail.
- Hiking. Met a mama bear and her cub on Surprise Lake trail.
- I came across them hiking, then turned and ran. The bears were on the front porch of house during summer for past 10 years.
- In Alaska, claw marks on cabins and trees.
- In Yellowstone when a kid—bear smashed nose against window.
- Next to campsite area the other, boy scared bear away.
- Sequoia National Park sitting by fire—tub of food on bench knocked over by bear.
- Sister—bears took down bird feeders.
- Sitting in front of a tent eating dehydrated ice cream saw a bear. Backpacking—driving a convertible—bear managed to get into trunk for a piece of granola. I saw a bear tear down a tent in Yosemite for a gum wrapper. Bear came in and unstrung everybody's food in Denali, Alaska.
- The bear busted into a friend's camper through the skylight and went through the screen door. My friend wasn't home.
- Trail hike. Eating berries. Teeth gnashing.
- While backpacking, Grizzly bear ate fish that we caught, the bear left the site.
- Yosemite—sister's camping site next to them had a bear get into the truck.

Appendix L. Characterization of bear encounter (q24a)

- Adrenaline rush.
- Angry
- Anxious, excited, captured my attention.
- Calm
- Disappointment – didn't get to see bear or finish hike.
- Don't know. (2)
- Enjoyable, Funny.
- Excited—little bit
- Freaked out
- Frightened. (3)
- Kind of cool. Routine habit of bear, not stressful.
- Memorable. Scary.
- NA
- Neutral, don't know.
- Neutral.
- No Answer.
- Pleasant, exciting.
- Scared. (9)
- Unfortunate
- We were aggressive