National Park Service U.S. Department of the Interior



Social Science Division

Expedited Ap	proval for	NPS-Spons	sored Public	Surveys

Expe	lited Approval for N	NPS-Sponsored Public Surveys
1.	Project Title Submission Date:	Evaluation of Grand Teton National Park's "Be Bear Aware" Message to Visitors August 28, 2009
2.	Abstract:	This research will assist managers at Grand Teton National Park (GRTE) in the evaluation of the public information and education portion of the park's 'Be Bear Aware' program. Of particular concern to GRTE managers is the program's success in minimizing human-bear conflicts by improving food storage compliance in the campground and picnic areas. We will conduct face-to-face interviews with a sample of park visitors during the summer of 2010 to evaluate whether information in the 'Be Bear Aware' program is reaching park visitors and translates into compliance with park regulations. (not to exceed 150 words)
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Project Information Grand Teton National Park Park(s) For Which Research is to be Conducted: 08/06/2010 **Survey Dates:** 06/29/2010 (mm/dd/yyyy) to (mm/dd/yyyy) Type of Information Collection Instrument (Check ALL that Apply) Mail-Back □ On-Site X Face-to-Face **Telephone** Focus **Ouestionnaire Ouestionnaire Interviews** Survey Groups Other (explain)

8. Survey Justification:
(Use as much space as needed; if necessary include additional explanation on a separate page.)

Social science research in support of park planning and management is mandated in the *NPS Management Policies 2006* (Section 8.11.1, "Social Science Studies"). The NPS pursues a policy that facilitates social science studies in support of the NPS mission to protect resources and enhance the enjoyment of present and future generations (National Park Service Act of 1916, 38 Stat 535, 16 USC 1, et seq.). NPS policy mandates that social science research will be used to provide an understanding of park visitors, the non-visiting public, gateway communities and regions, and human interactions with park resources. Such studies are needed to provide a scientific basis for park planning, development, operations, management, education, and interpretive activities.

Management Justification

This survey of visitors to Grand Teton National Park determines if the information in the park's 'Be Bear Aware' program is reaching park visitors and is effective in promoting compliance with food-storage rules designed to minimize human-bear conflicts. Grand Teton National Park (GRTE) initiated the 'Be Bear Aware' program in 2007. The program is an integrated strategy consisting of 5 elements: 1) public information and education; 2) removal of human food sources; 3) enforcement of food storage regulations; 4) management and control of problem bears; and 5) research. 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 entrances 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 rolled up).

The park also developed several guidelines on how to safely and responsibly recreate in bear country. These guidelines have been widely disseminated throughout the park, including a full page in the "Teewinot," the park's newspaper. The newspaper, handed to all park visitors as they arrive at entrance stations, gives information on food storage, behavior during a bear encounter, differences between black and brown bears, and safety on trails.

Despite these increased efforts, park employees still observe noncompliance with GRTE's food storage policy. Because of this, the park continues to have to allocate limited resources to managing problem bears, defined as bears who actively seek out sources of human food. In the interest of protecting park visitors. If bears become habituated toward human food and show no fear of humans, they are euthanized. Six bears were euthanized in GRTE from 2006 to 2008 (K. Wilmot, Bear Management Office, GRTE, personal communication, July 3, 2009).

In the interest of protecting park visitors and preserving the park's bears, GRTE managers need to understand the effectiveness of the public information and education portion of the 'Be Bear Aware' program. Results will be used to inform future visitor education efforts. Specifically, to evaluate whether the information in the 'Be Bear Aware' program is in fact reaching park visitors, and is effective, we will conduct intercept interviews with a sample of park visitors in the summer of 2010. The survey instrument consists of six sections: 1) trip characteristics; 2) food storage; 3) beliefs about food storage; 4) Bear Aware program questions; 5) Bear Aware and safety questions; and 6) demographics. The need for survey and its practical utility to park managers are discussed below.

GRTE managers have gone to considerable lengths to develop educational materials for the public as part of the 'Be Bear Aware' program. Therefore, questions in sections on "Food Storage" and "Beliefs about Food Storage" are designed to elicit visitors' actions, as well as beliefs, regarding proper food storage. Answers to these questions will inform park managers if their message is being seen, read, and/or heard, and whether park visitors are translating the 'Be Bear Aware' message into the desired behavior (i.e., proper food storage, what to do when a bear is encountered). Because GRTE managers are interested in message penetration, all visitors to campgrounds and picnic areas are in the population universe to be sampled, whether they have food with them or not.

In addition, park managers are keenly interested in the message that is most salient to visitors in affecting compliance with park rules. To address salience, we ask a series of questions on where visitors might have received information on recreating safely and responsibly in bear country. We also include a set of questions asking park visitors if they remember seeing particular 'Be Bear Aware' signs, where they remember seeing the signs, and how many times. Further, we ask visitors to tell us which of these signs made the greatest impression on them. We understand that information obtained outside of the park (e.g., a television program, talking with friends or family members) may be most influential in influencing a visitor to comply with park regulations, so a question is included about these other information sources. Knowledge of bears acquired elsewhere is still useful to GRTE managers in that the format (e.g., verbal or video) and/or content (e.g., a friend's experience, a bear's life history) could be incorporated into future educational efforts.

<u>Literature Review</u>. Previous research on human-bear interactions in Yosemite Park found that bear-related messages targeted at visitors' beliefs about perceived risk of human-bear interactions are most effective (Lackey and Ham, 2003). A second study in New York's Adirondack Park suggested that risk perception influences visitors' beliefs and attitudes and thus their receptivity toward educational messages (Gore, Knuth, Curtis & Shanahan, 2007). One factor identified as affecting visitor risk perception is frequency of bear encounters while camping in the park (Gore *et al.*, 2007). We address risk perception by asking visitors how strongly they agree or disagree with the statement: "it is very unlikely that a bear will enter this campground or picnic area while I am here." We believe, based on research by others, that visitors who strongly agree with this statement will be less inclined to follow park regulations.

The Yosemite study also found that experienced park visitors believed they "knew about bears" and that familiarity tended to lessen perceived risk if the visitors' own direct experience lacked negative bear encounters (Lackey and Ham, 2003). Based on these results, we ask visitor's to recall their own past experience with bears. We believe visitors who have prior knowledge of, or experience with ,a bear that led to a negative outcome will be more likely to follow park regulations.

References Cited

Gore, M. L., B. A. Knuth, P. D. Curtis, and J. E. Shanahan. (2007). Campground manager and user perceptions of risk associated with negative human-black bear interactions. *Human Dimensions of Wildlife*, 12, 31-43.

Lackey, B. K. and S. H. Ham. (2003). Final report: Human element assessment focused on human-bear conflicts in Yosemite National Park. Moscow, Idaho: University of Idaho.

9. Survey Methodology: (Use as much space as needed; if necessary include additional explanation on a separate page.)

(a) Respondent universe:

The respondent universe consists of all visitors 18 years of age and older using NPS-managed frontcountry campsites and picnic areas in GRTE during the survey period. Those occupying campsites will likely be overnighters in the park, while those individuals at picnic areas are likely to be day visitors. The questionnaire does provide for identifying picnickers who are also campers. The NPS manages approximately 1,165 campsites and another 100 picnic sites in the park.

(b) Sampling plan/procedures:

In each campground we will stop at every 4th site to intercept an occupant for the survey. Sampling will be concentrated during two periods: morning hours (8:30 a.m. - 11:00 a.m.) when most campers are awake and are still at their sites, and early evening (4:30 p.m. -7:00 p.m.) when new campers are arriving to occupy their sites. Because the campgrounds are used as a home base for exploring the park, it's likely that even during peak occupancy hours some occupied sites will have no campers present to be interviewed (untended sites). In this case, we will return one time (that evening or the next morning) and attempt to complete an interview. If the site is still untended on this return visit, the site will be replaced with the next site occupied by a group that has not yet been interviewed. Additionally, the interviewers will attempt to alternate between a male and female respondent over age 18 at each campsite. This approach should reduce the risk of sampling bias that may occur if those individuals who spend much of the day away from their campsite are distinctly different in some important ways from individuals who are at their campsite during the day. This process assures that we will have the requisite number of interviews completed, as well as minimizing potential sampling bias.

Picnic areas are quite varied and are generally clumped 4 – 6 tables per site along major roads in the park Two large picnic areas each have approximately 24 tables. We will take 12 completed interviews at these areas and 3-4 at each of the other 8 picnic sites. Additionally, there are scattered tables for eating outside several of the camp stores. We will round out the 63 picnic area interviews at these sites.

Based on previous observation, we expect that, on average, 97% of the campsites and 60% of the picnic sites will be occupied during the study period. Campers occupy a site on average for 2 nights, while picnickers are replaced each day. We will be interviewing on 15 days distributed over a 20-day period, which means that there are potentially 8,475 camper site occupations ((20/2) x $[0.75(.97x1165 \text{ sites})] = 10 \times 847.5 = 8,475$) camping site occupations. For picnickers, the equivalent number of sites is 900 picnic site occupations (15 x 0.60(100 sites) = 900). Since we want approximately 625 completed surveys, and approximately 10% of all sites are picnic sites, we will take completed interviews from 63 picnic sites.

The sampling numbers for the initial potential universe of camping contacts will

use the average proportion of occupied sites by size of the campground. We will need approximately 562 completed interviews from campers. The number of completed interviews will be: 63 picnickers + 562 campers = 625. At the 95% confidence level, completion of 625 interviews yields a margin of error of $\pm 4\%$ for sample estimates of the population true value.

(c) Instrument administration:

The procedure for collection of information will be face-to-face interviews led by the 2 PIs. In addition, at least one undergraduate researcher will be hired to work with the PIs on interviews. We will use scannable forms for recording responses to aid in the transfer of answers from paper to an electronic data file.

The following contact script will be used:

"Hello. I'm a researcher from the University of Wyoming. Grand Teton National Park has asked us to help with research on their "Be Bear Aware Program." I only need about 10 or 12 minutes to ask you some important questions about your visit here in Grand Teton National Park. Your answers are completely voluntary and anonymous. Would you be able to help me out with this?"

If YES: "Thank you. Are you at least 18 years of age?" "Have you taken this survey at another campsite or picnic area in the park?"

If NO: "I understand. Could I ask you just 3 questions for comparison purposes?"

If YES: In what year were you born? _____ What is the highest level of school you have completed? In what state do you live? Gender (observed)

(d) Expected response rate/confidence levels:

Intercept interviews in national parks tend to have high response rates. For example, our face-to-face interview at Rocky Mountain National Park completed in 2003-2004 had a response rate of 93%/ We expect a similar rate at Grand Teton National Park (as defined by the AAPOR standards).

(c) Strategies for dealing with potential non-response bias:

Although we expect high response rates, there nonetheless may be campers or picnic visitors who for reasons of privacy or time cannot cooperate in the study. Or for other reasons the response rate may fall below 80%. In this case, we will compare respondents and non-respondents on age, education, and residence. Non-response bias, if any, will be reported and the implications for interpreting the results discussed in the final report.

(d) Description of any pre-testing and peer review of the methods and/or instrument (recommended):

The questionnaire was revised after our first meeting with the NPS science officer and ranger in charge of the "Be Bear Aware" program. It was revised again after meeting with park employees and after conducting a focus group with park visitors in Jackson, WY in 2009 (n=7). This consultation and pretesting has resulted in a well-tailored questionnaire for the evaluation of the "Be Bear Aware" Program.

10.	Total Number of Initial Contacts Expected Respondents:	11. Estimated Time to Complete Initial Contact Instrument (mins.):
	13. Reporting Plan:	Instrument (mins.):

"BE BEAR AWARE" FACE-TO-FACE INTERVIEW FORM

Grand Teton National Park

"Hello. I'm a researcher from the University of Wyoming. Grand Teton National Park has asked us to help with research on their "Be Bear Aware Program." I only need about 10 or 12 minutes to ask you some important questions about your visit here in Grand Teton National Park. Your answers are completely voluntary and anonymous. Would you be able to help me out with this?"

LOCATION AND VISITATION

1. Survey location	
O Gros Ventre O Jenny Lake O Colter Bay O Signal Mountain O Lizard O Flagg Ranch O Grassy Meadow	Cottonwood Creek Cotton
Is this your first visit to G Teton National Park?	Grand O yes } skip to #4 O no [1. VISITHIS1]
How many times have y VISITHIS3]	ou visited Grand Teton National Park in the last 12 months? [1.
Number of OR	ave you stayed in Grand Teton National Park? [3. TRIPC11] hours, if less than 24 hours days, if 24 hours or more
Number of OR	to stay in total? [Topic Area 2 – Trip/Visit Characteristics] hours, if less than 24 hours days, if 24 hours or more
O Lodge O RV/van	hat type of overnight facility are you using? <i>(check all that apply)</i> [3. Variation TRIPC15] O Camping under the stars O Staying outside the park O Haven't decided O Live in the area

 (If CAMPER) How many people are staying at your campsite, including yourself? [Topic Area 1 – Individual Characteristics] (ASK IF NECESSARY) Is this a group campground site? O yes O no [Topic Area 3 – Individual Activities & Uses of Park Resources]
7a. (If PICNICKER) How many people are picnicking with you, including yourself? [Topic Area 3 – Individual Activities & Uses of Park Resources]
FOOD STORAGE
Now we have a few questions about how you store your food and personal items while you are in the park.
8. While you are in the park, do you have any food with you? [Topic Area 2 – Trip/Visit Characteristics] O yes If yes, where do you keep that food? O in my vehicle O in my backpack or picnic basket O at my campsite/picnic table O in my tent
O no O DK/NA
8a. What kind of food do you have with you? (check all that apply) [Topic Area 2 – Trip/Visit Characteristics O drinks O snacks O food for meals O pet food O other
9. When you are not eating or preparing a meal, how do you store your food when you are at your campsite/picnic table? (check all that apply) [Topic Area 3 – Individual Activities & Uses of Park Resources] O in the car O on the table/campsite area O in the food storage lockers (Bear Boxes) O in the tent O other O DK/ NA
10. How do you store your food when you are not at your campsite/picnic table? (check all that apply) [Topic Area 3 – Individual Activities & Uses of Park Resources] O in the car O on the table/campsite area O in the food storage lockers (Bear Boxes) O in the tent O other O DK/ NA
11. (If 9 or 10 answered "food storage lockers," SKIP) Do you know what the park service's food storage lockers (Bear Box) are? [Topic Area 1 – Individual Characteristics] O yes O no O no, never seen one O DK/NA

12.	Where is the closest park food storage locker (Bear Box) to this site? [Topic Area 6 - Individual
	Perceptions of their park Experiences]
	O identifies location
	O after some time, identifies location
	O misidentifies location (e.g., identifies a trash container)
	O DK/NA

BELIEFS ABOUT FOOD STORAGE

13. 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? (*read list; mark as many as affirmed*) [Topic Area 3 – Individual Activities & Uses of Park Resources]

O Snacks	O Uncooked food in its original wrapping/packaging
O Dry dog food	O Clean dishes
O Canned drinks (unopened)	O Pet food bowls
O Water bottles	O Toiletries
O Any food in a cooler	O None of the above
O Cook stove	O DK/NA

14. 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. [Topic Area 3 – Individual Activities & Uses of Park Resources]

	Strongly Agree	Agree Somewhat	Neutral	Disagree Somewhat	Strongly Disagree	DK/ NA
 a. I/we always store my/our food when not in use in a bear resistant container or in the car. 	0	0	0	0	0	0
 b. Garbage must be stored in the same manner as food, or placed in bear- resistant trashcans. 	0	0	0	0	0	0
 Personal products such as soap, deodorant, toothpaste, sunscreen, and bug spray do not have to be stored in bear safety containers or the car. 	0	0	0	0	0	0
d. Wash tubs/basin/dishes must be stored in the same manner as food.	0	0	0	0	0	0
When I store food in the car, I can leave the windows cracked for one inch or less for ventilation.	0	0	0	0	0	0
 f. When out on a hike, I still need to be concerned about smells from any food I carry. 	0	0	0	0	0	0

BEAR AWARE QUESTIONS

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 is no right or wrong answer; the best answer is one that tells us what you really remember. The rest of this survey will take about five minutes.

15. When planning your trip to the park, did you access the web site for Grand Teton National Park or

some other website? [2. Variation TPLAN11]	
O yes, I accessed the Grand Teton National Park website O I accessed another website (<i>if so, which one</i> O no, I didn't access a website O no, I didn't know about it O I didn't actually plan to stop here at Grand Teton O DK/NA) to #16
15a. Did you read any of the information on proper foo Individual Activities and Uses of Park Resources] Uses of Park Resources] O yes O no O didn't notice it on the site O DK/NA	
16. Did you receive any printed material when you entered the recreation in bear country? [Topic Area 3 – Individual Action O yes O no, I already had copies of the information O no O DK/NA	
16a. Did you read that material? ? [Topic Area 3 – Ind Resources] O yes, I read all of it O yes, I read some of it O I haven't gotten around to reading it yet O I didn't read the parts about bear awareness O I haven't read any of it O DK/NA	
17. Did you receive any printed material when you entered the responsible recreation in bear country? [Topic Area 3 – In O yes O no, I already had copies of the information O no O DK/NA	

	BEAR AWARE and SAFETY
	O DK/NĀ
	O at the visitor center O other
	O campground host/concessionaire on patrol
	O it was at campground registration O from a ranger on patrol
	O it was in a campfire program
	18a. Where did you receive that explanation? (read list; check all that apply) [Topic Area 3 – Individual Activities & Uses of Park Resources]
	O yes O a little O no O DK/NA Skip to #19
18.	Did you receive a spoken explanation about the importance of safe and responsible recreation in bear country? [Topic Area 3 – Individual Activities & Uses of Park Resources]
	O I didn't read the parts about bear awareness O I haven't read any of it O DK/NA
	O yes, I read some of it O I haven't gotten around to reading it yet

17a. Did you read that material? [Topic Area 3 – Individual Activities & Uses of Park Resources]

O yes, I read all of it

19. 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 you remember seeing this sign on this trip to Grand Teton National Park. [Topic Area 6 – Individual Perceptions of their Park Experiences] (INTERVIEWER SHOWS CARDS WITH SIGNS TO RESPONDENT)

	DK	No	Yes	If YES, where did you see it?	DK	How many times?	DK
a. Footprint – Be Bear Aware	0	0	0				
b. Warning – BEAR Frequenting Area	0	0	0				
c. Be Bear Aware – Food and Odors Attract Bears	0	0	0				
d. You Can Help Save a Bear	0	0	0				
e. Warning – Trail closed due to Bear activity	0	0	0				
f. Be Bear Aware – Food Storage Required	0	0	0				

20. 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. [Topic Area 6 – Individual Perceptions of their Park Experiences]

	Strongly Agree	Agree Somewhat	Neutral	Disagree Somewhat	Strongly Disagree	DK/ NA
I have read so much about bears that I think that I am able to predict when a bear will turn aggressive.	0	0	0	0	0	0
b. Black bears are not a threat to humans.	0	0	0	0	0	0
c. If a bear approaches a person, a good strategy to distract the bear is dropping food or a backpack	0	0	0	0	0	0
d. Grizzly bears live in Grand Teton National Park.	0	0	0	0	0	0
e. Running away from a bear can cause an aggressive response in the bear.	0	0	0	0	0	0
f. It is unlikely that a bear will enter this campground or picnic area while people are here.	0	0	0	0	0	0
g. Bears only move around at night.	0	0	0	0	0	0

are here.									
Bears only move around at night.	0	0	0	0	0	О			
21. 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 source had the greatest impression? [Topic Area 7 – Individual Opinions on Park Management] O didn't get any information OR O Grand Teton National Park website O other Grand Teton National Park material (Teewinot newspaper, handouts, signs) O talking with park personnel (verbal) O talking with friends or family member O TV program O other									
22. How many times have you actually see 25)	en a bear r	oaming freely	?	(If none, SK	P to			
Topic Area 6 – Individual Perceptions of t	heir Park E	xperiences]							
23. How many times have you seen a bea [Topic Area 6 – Individual Perceptions of t			al Park?						
24. Have you ever had an encounter with a (e.g. the bear walked near or through y away from the campsite, etc.) [Topic A	our campsi	ite, had dama	ged prope	erty while you	were aslee				

O no, but someone I know did (e.g., family member or friend)

O no O DK/NA

Experiences] For example, where did it happen? How long did it last?	
PROBE THEN RECORD: How would you characterize the encounter? For example, wh you scared? Excited? Happy? [Top Area 6 – Individual Perceptions of their Park Experiences]	
DEMOGRAPHIC QUESTIONS	
I just have a few questions to ask about you so that we can make certain we have a representative sample.	
25. In what year were you born? [1. AGE1]	
26. What is the highest level of education you have completed? [1. ED1] O Some high school O High school diploma/GED O Some college or tech school O Bachelor's degree O Graduate degree	
27. Where do you live? [1. RES1] City State ZIP' Country (if not US)	
28. RECORD GENDER (do not ask) O Male O Female	
THANK YOU so much for your help. Is there anything else you would like to tell us about your visit to Grand Teton National Park ? [6. OPMGMT7]	

*Additional Information Provided upon Request.

16 U.S.C. 1a-7 authorizes collection of this information. This information will be used by park managers to better serve the public. Response to this request is voluntary. No action may be taken against you for refusing to supply the information requested. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

BURDEN ESTIMATE STATEMENT: Public reporting burden for this form is estimated to average **12 minutes** per response. Direct comments regarding the burden estimate or any other aspect of this form to:

Sue Consolo-Murphy Chief, Science and Resource Management Grand Teton National Park PO Drawer 170 Moose, WY 83012 Phone 307-739-3481 Sue_Consolo-Murphy@nps.gov

GRTE "Be Bear Aware" SURVEY LOG

Date:			Weather:				Interviewer						
ID Number	Time of Contact	Refused	Previously Sampled	Type of Site	Location	Food Compliance Y/N: comments?	Age 18?	Year Born	Education	State	M/F	Comments/Reason for refusal (language, time, etc.)	

Type of site – **camp**ground; **group** campground; **picnic** area Location – campground areas: **Gros** Ventre; South **Jenny** Lake; **Signal** Mountain; **Colter** Bay; **Lizard** Creek; **Grassy** Meadows Picnic areas: Moose, Taggart, Jenny, String, Turnaround, Signal, Chapel, Dam, Colter, Leeks, Arizona Island – and about three more.