

Grizzly Bear Outreach Project Evaluation

Final Report

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Jim Davis
Conservation Partnership Center
2219 Fir Street S.E.
Olympia, WA 98501
jimdavispc@comcast.net

Chris Morgan
Insight Wildlife Management
P.O. Box 28656
Bellingham, WA 98228
chrismorgan@insightwildlife.com

www.bearinfo.org

Background on Grizzly Bears and Their Recovery in the North Cascades

Before Europeans arrived, grizzly bears were thriving in all western states ranging as far south as Mexico. Population levels in the lower 48 states are estimated to have been between 50,000 to 100,000 bears. Grizzly bears played a critical role in maintaining natural ecosystems throughout the west. Native Americans co-existed with grizzly bears for thousands of years. During a 32-year period in the mid 1800's, 3,788 grizzly bear hides were processed through Hudson Bay forts in the North Cascades area. The decimation of the grizzly bear population continued for more than a century with commercial trapping, habitat loss, and unregulated hunting the leading causes of mortality.

Currently, grizzly bears are present in less than 2% of their former range, with fewer than 1,100 bears in the lower 48 states. The estimated resident population in Washington's North Cascades is 5 to 20 bears. The estimated resident population in British Columbia's North Cascades is also 5 to 20 bears. There may be some movement of bears across the Canadian/US border.

Grizzly bears have good eyesight (much like humans), an excellent sense of smell (better than a dog), and very good hearing. They are intelligent, curious, and have a good memory (particularly regarding food sources). The standing behavior often shown in magazines is not a threatening posture, but instead is the bear's way of fully viewing its surroundings. The grizzly bear's claws are used mainly for digging roots.

Grizzly bears are most often found on upper elevation slopes, in avalanche chutes, and in lower elevation wetlands. Females usually require 50-300 square miles of range, while males require 200-500 square miles. Individual bear's ranges overlap, with several bears sharing an area. Grizzly bears den from late October to November and leave dens in late March to April.

Grizzly bears are omnivores with a typical diet of less than 10% fish or meat. Much of the meat is carrion from winter killed deer and elk. Grizzly bears in coastal areas are an exception: for these bears, fish (salmon) comprise a larger proportion of their diet. More than 100 plants in the North Cascades have been identified as part of the grizzly bear's diet. Grizzly bears visit wetlands in the spring for plants high in nutrients. Summer foods include thistle, cow parsnip, mushrooms, roots, spawning fish and wild berries. In late summer, they add clusters of moths from high-elevation areas. Fall foods include berries (very important), plants, and ants.

In 1975, the grizzly bear was listed as "Threatened" under the US Endangered Species Act. In 1983, the Interagency Grizzly Bear Committee (IGBC) was established with the goal of recovering the grizzly bear population in the lower 48 states. The IGBC includes representatives from the US Fish and Wildlife Service, National Park Service, USDA Forest Service, US Geological Survey, state Fish and Wildlife Departments, and the British Columbia Ministry of Water, Air, and Land Protection. The IGBC was charged with identifying good areas where recovery should occur and the specific actions to recover the population.

The IGBC identified six ecosystems for recovery, ranging from Yellowstone to the North Cascades. The North Cascades recovery area is bounded by the Canadian border, approximately the west boundary of the Mount Baker/Snoqualmie National Forest, the I-90 corridor, and approximately the east border of the Wenatchee/Okanogan National Forest and the Loomis State Forest. The North Cascades recovery area is one of the largest in the US, encompassing nearly 10,000 square miles. More 40% of the recovery area is designated wilderness, 90% is federally owned, and 68% has no motorized access.

Grizzly bears are often portrayed by the media as voracious predators. In fact, they are very reclusive and usually not aggressive. They may act aggressive when they are startled or feel threatened by human actions around cubs or food sources. Much misinformation about grizzly bears circulates in local communities. The public has a poor understanding of how humans and grizzly bears can safely co-exist. There is a clear need for education about grizzly bears in the North Cascades.

Background on the Grizzly Bear Outreach Project

The Grizzly Bear Outreach Project (GBOP) is an independent project guided and implemented by community members. The primary purpose of the GBOP is to provide accurate information on grizzly bears and the grizzly bear recovery process so that local residents can make more informed and effective comments during a future EIS process on grizzly bear recovery. The GBOP also provides education on how local residents can co-exist safely with bears in the North Cascades. GBOP activities in the North Cascades have been funded by multiple partners including the US Fish and Wildlife Service, USDA Forest Service, National Park Service, Interagency Grizzly Bear Committee, Washington Department of Fish and Wildlife, Northwest Ecosystem Alliance, Defenders of Wildlife, Woodland Park Zoo, and Seattle City Light.

The GBOP was first implemented in 2002 as a pilot in Okanogan County (the northeastern portion of the recovery area). The east side GBOP has been continued, while the project has also been expanded to the west side of the North Cascades in Skagit and Whatcom Counties. It is the west side project that is being evaluated under the Skagit Wildlife Research Grant program managed by Seattle City Light. The two-year evaluation of the west side project consists of baseline and follow-up telephone surveys, quarterly key informant interviews, and a media content analysis. The results reported in this document are derived from the baseline and follow-up surveys, key informant interviews, and media content analysis conducted in Skagit and Whatcom Counties. The evaluation results apply only to these geographic areas.

An array of educational methods were used during the 18 month community-based Grizzly Bear Outreach Project. At the core of the project were two community groups (one in Skagit County and one in Whatcom County) that received in-depth education on grizzly bears and help to plan the GBOP education project. Approximately 12 individuals were regularly involved in the community groups during the project period.

Important information was exchanged through one-on-one personal meetings (120 meetings) with local citizens, agency representatives, organization representatives, the media, and elected officials. These meetings provided an opportunity to discuss facts and figures about grizzly bears, the history of grizzly bear decline in the North Cascades, actions that local residents can take to live safely with bears, the grizzly bear recovery process, and local concerns about grizzly bear recovery. An additional 20 in-depth telephone conversations covered the same material as the one-on-one meetings. GBOP staff set up booths and met with numerous members of the public at 12 community events in Skagit and Whatcom Counties. GBOP sponsored two community events inviting local residents on a bear walk and a trip to Woodland Park Zoo for bear appreciation day. GBOP slide show presentations were delivered to 36 community groups, school classes, agency meetings, government meetings, and community festivals.

Written materials were also a primary means of communicating with local residents. More than 6,000 GBOP brochures were distributed through 33 sites in Whatcom and Skagit Counties that were stocked on a regular basis. GBOP fact sheets (700+), bear identification fact sheets (400+), Bear Smart fact sheets (400+), and Bear Smart flyers (1,500+) were distributed through established community sites or through door drops in high density rural communities. GBOP posters were also placed at more than 30 sites, including trailheads, campgrounds, and businesses. The GBOP Bear Smart Assessment (report on potential human-bear conflict situations in Skagit and Whatcom Counties) was distributed to more than 100 people.

Media coverage of grizzly bears, the grizzly bear recovery process, and the GBOP was encouraged by distribution of four press releases, multiple meetings with reporters and editors, and writing and submission of two newspaper articles by GBOP staff. As indicated below in the media content analysis section, this aggressive GBOP approach to media coverage resulted in a total of 23 published media articles during the 18 month period that focused on GBOP issues. Another 20 grizzly bear related articles or other media occurrences also happened during the 18 month project period. A GBOP web page was also up and running throughout the project period and attracted many visitors who were able to review all of the information provided in GBOP publications, presentations, and reports (e.g., Bear Smart Assessment Report).

Survey Methods

Study Design: Most of the information provided in this report is from the baseline survey and the follow-up survey of the Seattle City Light funded evaluation of the GBOP in Whatcom and Skagit Counties. The overall pre-post evaluation of the GBOP education program used a split-panel study design to achieve adequate statistical power, while testing to determine whether participation in the baseline interviews biased responses in the follow-up interviews. A total of 508 Skagit and Whatcom County adults were randomly selected to complete the baseline interview. A randomly selected subset of 338 from this baseline group was assigned to the panel. Panel members were called again in 18 months to complete the follow-up interview. Loss to follow-up resulted in 246 completed follow-up interviews with panel members. An additional 266 adults (not interviewed at baseline) were randomly selected to also participate in the follow-up interviews. There were a total of 512 completed interviews at follow-up for this analysis. Since there were no significant statistical differences between the panel and non-panel respondents at follow-up, the panel and non-panel samples were merged for comparison to the baseline sample using statistical methods for cross-sectional surveys. This study design provided an eighteen-month period for implementation of GBOP education activities and consequent changes in public knowledge and attitudes regarding grizzly bear recovery.

Survey Sample Selection

GBOP education activities were expected to have an impact on all residents in Skagit and Whatcom Counties. However, the study evaluation focused only on rural residents who lived within 15 miles of the North Cascades Grizzly Bear Recovery Area (i.e., those most likely to be effected by grizzly bear recovery). All participants in the survey lived east of Highway 9 in Skagit and Whatcom Counties and at least three miles from Sedro-Wooley. Limitation of survey respondents to this geographic area was facilitated through use of census data and screener questions at the beginning of the survey questionnaire. The survey was limited to adults age 18 and older.

Survey Contact Method

A telephone survey method was used to interview study participants. The telephone survey included random digit dialing, standardized callback procedures (i.e., five calls distributed over weekends, weekdays, and evenings), and supervision methods that assure quality control. Each telephone interview took about 10 to 15 minutes to complete.

Questionnaire Content

Content for the telephone interview questionnaire (appendix 1) was developed by Jim Davis based on information obtained from past qualitative interviews conducted in Skagit County, an earlier telephone survey questionnaire developed by Responsive Management to assess attitudes toward grizzly bears, and a review of secondary documents that reveal public concerns about grizzly bear recovery (e.g., comments on grizzly bear recovery from the Selway-Bitterroot Recovery Area). Questionnaire items were reviewed by the GBOP Steering Committee (i.e., representatives from collaborating agencies and other funding partners).

The questionnaire focused primarily on knowledge and attitudes regarding grizzly bears and grizzly bear recovery in the North Cascades. Response options on attitude questions included *strongly agree*, *moderately agree*, *neither agree nor disagree*, *moderately disagree*, *strongly disagree*, and *don't know*. Several questions examined respondent trust of wildlife agencies and willingness to work with the agencies to develop acceptable grizzly bear recovery strategies. One question identified respondent sources of information on grizzly bears. Demographic information was also collected. The baseline and follow-up questionnaires were identical, except for the addition in the follow-up of a new question asking about information sources associated with the GBOP (e.g., personal meetings, presentations, brochure, etc.)

Survey Implementation

The baseline survey telephone interviews were conducted during September and October of 2003 and the follow-up interviews were conducted during March of 2005. Responsive Management (Harrisonburg, Virginia) was contracted to implement the telephone survey. The overall participation rate in the survey (i.e., percent of randomly selected residential phone numbers that resulted in a completed interview) was 46% for the baseline and 56% for non-panel members completing the follow-up interviews (new people contacted at follow-up). The participation rate was 73% for panel members completing the follow-up interviews (people contacted at baseline and follow-up). These participation rates were calculated in a way that included answering machines and busy signals where an individual person was not directly contacted. The participation rate for individuals actually contacted at baseline was 62%, with 299 individuals declining to participate at the beginning of the interview and 19 individuals terminating in the middle of an interview. Most of the early refusals occurred before the individual even knew the topic of the survey. Generally, most individuals who refuse to participate after hearing the topic are not interested in the topic. Most individuals with well-formed opinions on a survey topic will complete a telephone questionnaire.

Survey Data Analysis

SAS Programs were used to manage the survey data and develop frequency tables on participant responses to questionnaire items. The large sample sizes for the baseline survey (n=508) and follow-up survey (n=512) provided good statistical power for analyzing the results. The results provided in this report are accurate to within plus or minus 4%. Logistic regression was used to identify predictors of knowledge and attitudes and identify any differences between baseline and follow-up responses.

Survey Data Presentation

In this report, response frequencies for all questionnaire items in the surveys (baseline and follow-up) are provided in bar charts (appendix 2, figures 1-44) with the numbers after each bar indicating the percent of survey participants that provided that response. Statistical information on selected questionnaire items is provided in tables 1-9 in the report narrative. Several of these tables show responses to questionnaire items by demographic characteristics, with an indication of whether significant differences were at the $p=.05$, $p=.01$, or $p=.001$ level. Other tables compare changes from baseline to follow-up. Statistical significance of changes is indicated by p values in each table, with all values $\leq .10$ highlighted in bold font.

Key Informant Interview Methods

Information from key informants in a community can often supplement and help interpret findings from a quantitative survey. Key informants were used in this study to discover whether local residents were making comments regarding grizzly bears outside of a formal comment situation like a survey or agency meeting. This study included repeated telephone interviews with eight individuals from eastern Skagit and Whatcom Counties. The eight individuals were in positions to encounter local residents on a regular basis in contexts in which grizzly bear recovery might be important. Participants included elected officials, federal and state agency employees, environmental educators, forest industry employees, ranchers, and local business owners.

The key informant interviews focused on what the respondent had heard about grizzly bears from other people in the local community since the last interview. Comments from key informants on their own opinions about recovery were not recorded. The interviews were guided by an open ended qualitative questionnaire that identified topic areas for prompting participant recall. During the 18 month period, key informants were asked about anything they had heard regarding US and Canadian grizzly bear recovery activities, environmental organization litigation regarding grizzly bears, sighting of a grizzly bear near Republic to the east of the recovery area, media coverage of the GBOP or the Bear Smart Assessment, and

the full range of attitude questions included on the telephone survey questionnaire. One open-ended question asked about anything else that the respondent had heard from local residents about grizzly bears.

The initial study designed included a goal of ten key informants and six quarterly interviews with each throughout the 18 month project period. This proved to be an overly ambitious goal with two of the original participants unexpectedly dropping out part way through the study. As discussed more fully below, key informants reported very few comments from local residents regarding grizzly bears or grizzly bear recovery. This discouraged some participants from regular participation in interviews, since they had nothing to report. This resulted in only three to four completed interviews per key informant.

Media Content Analysis Methods

The GBOP evaluation included a review of multiple local media for comments regarding grizzly bears and grizzly bear recovery. A total of 25 sources were reviewed on a regular basis (monthly at least) throughout the project period (appendix 3). Media sources included daily and weekly newspapers in Skagit and Whatcom Counties, local business journals, meeting minutes and websites of environmental organizations and chambers of commerce, and meeting minutes of city councils and county commissions throughout Skagit and Whatcom Counties. For every potential media source, each edition was read from beginning to end (sources accessed via paper copies) or was scanned for mention of the word “bear” using electronic search tools (sources accessed via the internet). Websites were revisited and electronically searched on a monthly basis to detect any new content related to grizzly bears.

Parallel to key informant findings, there was very little media focus on grizzly bears or grizzly bear recovery during the 18 month review period. Only 43 media occurrences were detected the entire time and 23 of these occurrences were the direct result of a GBOP press release (i.e., newspaper articles with sections often taken verbatim from the press release), were written by GBOP staff for submission to the source, or were the direct result of a GBOP presentation (e.g., GBOP presentation to government committee covered in committee meeting minutes). Media occurrences that were a direct result of GBOP activities were excluded from the analysis because they did not represent normal media coverage of grizzly bears.

Given the relatively small number of media occurrences available for the content analysis (i.e., 20), only a simplified conceptual analysis was completed without computer assistance. A total of 27 concepts were identified to use in coding the media occurrences (appendix 4). These concepts were organized under six categories (i.e., safety, losses, government control, biocentric value, personal value, and social value). Each media occurrence was reviewed for content related to the 27 concepts and coded under one of the concepts. Each time a concept was coded, it was also scored positive or negative toward grizzly bears and/or grizzly bear recovery. Scores for each concept and category were calculated, plus a composite score was calculated showing the overall level of support or opposition for grizzly bears and/or grizzly bear recovery.

Survey Results

Attitudes Toward Grizzly Bear Recovery And Related Variables

Appendix 2, Figures 1 through 44 show attitudes toward grizzly bear recovery in the North Cascades and demographics at baseline and follow-up. At baseline, 52% strongly supported recovery and 24% moderately supported recovery (figure 27). Only 11% strongly opposed grizzly bear recovery at baseline. Results at follow-up were similar, with 54% strongly supporting recovery, 25% moderately supporting recovery, and only 8% strongly opposed. Changes in support are examined statistically in the next section.

Several questions examined whether support for recovery would increase or decrease if certain actions were associated with grizzly bear recovery (Figures 28 thru 33). In general, more respondents expressed increased support for each of the recovery associated actions that were examined. Augmentation (adding 5-10 bears),

landuse restrictions, garbage disposal restrictions, compensation for grizzly bear related livestock losses, and more frequent interaction between local residents and agency wildlife managers were all acceptable to most respondents. Statistical analyses of these results are found in the next section.

A second set of baseline and follow-up survey questions examined respondent attitudes toward federal and state agency wildlife managers and biologists (Figures 34 thru 38). These results were similar to results for support of recovery, with a strong majority of respondents saying that they trusted agency biologists, that wildlife managers would involve them in recovery, that agencies would be responsive to their concerns about recovery, that agencies would promptly remove problems bears, and that the public would want to participate in recovery decisions.

Baseline To Follow-Up Changes In Attitudes Toward Grizzly Bear Recovery And Related Variables

Table 1 shows the results of logistic regression analyses of changes in attitudes toward recovery from baseline to follow-up. Respondents were asked whether they strongly support, moderately support, neither support nor oppose, moderately oppose, or strongly oppose grizzly bear recovery in the North Cascades. Although overall support increased by 3% from baseline to follow-up (see appendix 2, figure 27), the increase was not statistically significant ($p=.7816$) when adjusted for demographic variables. However, strong opposition to grizzly bear recovery decreased from 11% to 8%. When the data were collapsed into those who strongly oppose recovery versus all other respondents, logistic regression revealed a weak statistically significant decrease ($p=.0790$), when adjusted for demographic characteristics.

Table 1 also reveals that there were no significant increases or decreases in support for actions associated with recovery (i.e., augmentation, landuse restrictions, or garbage restrictions). The follow-up survey revealed increased public trust ($p=.0169$) in the findings of agency biologists responsible for managing grizzly bear recovery in the North Cascades. However, the follow-up survey also revealed a statistically significant decrease in the proportion of respondents who strongly agree that wildlife managers will promptly remove problem grizzly bears ($p=.0341$). Respondents were also significantly less likely to expect that their neighbors would participate in the recovery process ($p=.0585$). There were no significant changes in attitudes toward agency commitment to citizen involvement or responsiveness to citizen concerns.

Table 1. Changes In Support For Grizzly Bear Recovery Actions From Baseline To Follow-Up.

Attitudinal Variables	Effect Est.	P Value
Increased Support For Recovery	.0347	.7816
Decreased Strong Opposition To Recovery (dichotomous)	.3899	.0790
Decreased Opposition To Augmentation (Add 5 To 10 Bears)	.1886	.3281
Decreased Opposition To Landuse Restrictions	.1743	.3963
Decreased Opposition To Garbage Disposal Restrictions	.0830	.8334
Increased Trust In Information Provided By Agency Biologists	.2504	.0527
Increased Trust That Local Citizens Will Be Involved In Recovery	-.1270	.3093
Increased Trust That Citizen Concerns Will Be Addressed	.0602	.6313
Increased Trust That Agencies Will Remove Problem Bears	-.2823	.0341
Increased Expectation Of Citizen Participation In Recovery Process	-.2394	.0585

Other Attitudes Associated With Support For Grizzly Bear Recovery

Questions 43 thru 52 in the follow-up questionnaire asked whether respondents agreed or disagreed with various statements about grizzly bears and grizzly bear recovery (see appendix 1). Table 2 shows the degree of association between these attitudinal variables and the primary attitudinal outcome variable (i.e., support or non-support for grizzly bear recovery). Only four of these attitudinal variables were statistically related to support for grizzly bear recovery at or below the $p=.05$ level. All four statements were positive about grizzly

bears or grizzly bear recovery. They included statements that grizzly bears are essential to the North Cascades ecosystem (p=.0006), that grizzly bears were here first and have an inherent right to exist in the North Cascades (p=.0001), that grizzly bears should be preserved for future generations (p=.0048), and that the respondent would derive satisfaction from knowing the grizzly bears are present in the North Cascades (p=.0001). Only one negative statement about grizzly bears (i.e., bears will come down from mountains into local communities) was significantly related to support for grizzly bear recovery (p=.0899).

Table 2. Other Attitudes Associated With Support For Grizzly Bear Recovery.

Attitudinal Variables	Effect Est.	P Value
Grizzly Bears Essential For North Cascades Ecosystem	.4463	.0006
Grizzly Bears Are Dangerous To Humans	-.1327	.1263
Grizzly Bears Will Kill Livestock	-.0325	.7579
Grizzly Bears Were Here Before Us And Have An Inherent Right	.4586	.0001
The Is No Need For Grizzly Bears In The North Cascades	-.0802	.5344
Grizzly Bears Are A Symbol Of Our Natural Heritage	.2066	.1275
Grizzly Bears Will Come Down From Mountains Into Communities	-.1527	.0899
Grizzly Bears Should Be Preserved For Future Generations	.4545	.0048
People Can Prevent Almost All Problems With Grizzly Bears	.2470	.1096
Respondent Derives Satisfaction From Knowing Bears Present	.5869	.0001

Demographic Characteristics Associated With Attitudes Toward Grizzly Bear Recovery

The study collected information on six basic demographic characteristics (appendix 1). Table 3 shows the relationships between these characteristics and responses to nine questions exploring attitudes toward grizzly bear recovery and associated attitudes. Gender clearly played the largest role in determining attitudes, with five of the nine attitudinal variables significantly related to gender. Females were more supportive of grizzly bear recovery (p=.0087), more concerned about augmentation as a recovery tool (p=.0189), less concerned about landuse restrictions (p=.0095), less concerned about garbage disposal restrictions (p=.0197), and more likely to trust wildlife managers to respond to citizen concerns about bears (p=.0149). Respondents with family income associated with the forest held significantly different attitudes than other respondents on four

Table 3. Support And/Or Opposition To Grizzly Bear Recovery Actions By Demographics.

Attitudinal Variables	Gender	County	Age	Edu.	Inc.*	Use**
Support For Grizzly Bear Recovery	Female ²	Whatcom ¹	Younger ³	-	-	-
Strong Opposition To Recovery	Male ³	-	Older ³	-	-	-
Opposition To Augmentation	Female ¹	Skagit ¹	Older ²	-	-	-
Opposition To Landuse Restrictions	Male ²	-	-	-	Yes ²	-
Opposition To Garbage Restrictions	Male ¹	-	-	-	-	-
Trust In Agency Biologist Information	-	-	Younger ²	-	No ²	No ¹
Trust Citizens Involved In Recovery	-	-	-	-	-	-
Trust Citizen Concerns Addressed	Female ²	-	-	-	No ²	-
Trust Agencies Remove Problem Bears	-	-	-	-	-	-
Expectation Of Citizen Participation	-	-	-	Low ²	No ³	-

* Family Income Dependent Upon The Forest

** Use Forest For Camping, Hiking, Etc.

¹ Significant at the p=.05 level

² Significant at the p=.01 level

³ Significant at the p=.001 level

of the nine items. These respondents expressed more concern about potential landuse restrictions associated with recovery ($p=.0016$), were less likely to trust the information provided by agency biologists ($p=.0030$), were more likely to doubt their concerns would be addressed during recovery ($p=.0052$), and more likely to doubt that local citizens would participate in the recovery process ($p=.0014$). Age also played an important role in determining attitudes, with older respondents being less supportive of recovery ($p=.0001$) and augmentation ($p=.0058$) and less trusting of the information provided by agency biologist $p=.0145$). County of residence (i.e., Whatcom versus Skagit) was also related to attitudes with Whatcom County residents being more supportive of recovery ($p=.0310$) and less concerned about grizzly bear augmentation ($p=.0486$). The remaining two demographic characteristics were linked to only one attitudinal variable each, with lower education respondents more likely to agree that citizens would participate in recovery ($p=.0067$) and frequent users of the forest (camping, hiking, etc.) being less likely to trust the information provided by agency biologists ($p=.0162$).

Information Sources Associated With Attitudes Toward Grizzly Bear Recovery

Although a causal relationship cannot be determined, it is interesting to look at associations between support for grizzly bear recovery and sources of information on grizzly bears (table 4). For the more generic question used at baseline and follow-up (question 41 in appendix 1), receipt of information on grizzly bears from brochures ($p=.0420$) and environmental organization newsletters ($p=.0049$) were positively associated with support for grizzly bear recovery. Receipt of information from other sources (e.g., newspapers, TV, friends, family, etc.) was not associated with attitudes toward recovery. Respondents that reported no information at all on grizzly bears held statistically similar attitudes toward recovery as those who listed one or more information sources.

Table 4. Information Sources Associated With Support/Opposition To Grizzly Bear Recovery.

Information Sources	Eff. Est.	P Value
No Information Sources On Grizzly Bears	-.3363	.1455
Newspapers Or Magazines	-.0317	.8727
Television Or Films	-.0088	.9673
Internet	-.1829	.1199
Public Meetings	.5544	.4460
Brochures	1.0212	.0420
School	1.2775	.1017
Environmental Organization	2.1257	.0049
Social Or Recreational Organizations	.9203	.1985
Production Organizations	.8324	.5516
Professional Organizations	.4733	.5517
Federal Or State Agencies	.8868	.1982
Friends	.0019	.9954
Family	-.4077	.2773
Personal Experience	-.0586	.8597

A more specific question about GBOP information sources was included in the follow-up interview (table 5). The analysis for this question revealed that support for recovery was positively associated with receipt of information from multiple GBOP sources. These included newspaper articles ($p=.0836$), environmental organization newsletters such as the Northwest Ecosystem Alliance ($p=.0144$), the GBOP brochure ($p=.0527$), the GBOP fact sheet ($p=.0251$), the GBOP slideshow presentation ($p=.0932$), the GBOP poster ($p=.0646$), and personal discussion with a GBOP staff at a community event ($p=.0237$).

Table 5. GBOP Information Sources Associated With Support/Opposition To Grizzly Bear Recovery.

GBOP Information Source	Eff. Est.	P Value
Newspaper Article That Mentions GBOP	.4509	.0836
Radio Ad That Mentions GBOP	-1.0629	.1210
Organization Newsletter That Mentions GBOP	1.4029	.0144
GBOP Bear Smart Program	.3734	.6031
GBOP Brochure	.6604	.0527
GBOP Fact Sheet	2.4057	.0251
GBOP Slideshow Presentation	1.9455	.0932
GBOP Poster	1.2680	.0646
Discussion With GBOP Staff At Community Event	1.4855	.0237
Personal Meeting Or Phone Call With GBOP Staff	.3492	.5518
GBOP Web Page	14.3325	.9781

Knowledge About Grizzly Bear Recovery

Appendix 2 includes bar charts showing knowledge about grizzly bears and grizzly bear recovery at baseline and follow-up (figures 1 through 14). In general, the majority of respondents report correct knowledge about grizzly bears (i.e., how common grizzly bears were in the past and are now in the North Cascades, the adequacy of grizzly bear food sources in the North Cascades (most responded adequate to good), how to store food and garbage at campsites, the most common reasons for bear attacks, and the fact that it is legal to kill a grizzly bear in self defense). In contrast, many respondents had poor knowledge of grizzly bear recovery (i.e., number of bears at recovery and number of years to recovery), the grizzly bear diet (a majority think that the diet is comprised of mostly meat and fish), the number of people killed or injured by grizzly bears, and the fact that it is illegal to kill a grizzly bear to stop an attack on livestock (38% think it is legal).

Baseline To Follow-Up Changes In Knowledge About Grizzly Bear Recovery

There was very little change in knowledge regarding grizzly bears and grizzly bear recovery from baseline to follow-up (table 6). There was a statically significant change in knowledge about the number of grizzly bears that would need to be present in the North Cascades to declare the population recovered, with more respondents at follow-up reporting closer to the correct number of 200-400 bears (p=.0944). The only other statistically significant change was a decrease in the knowledge that it is illegal to kill a grizzly bear to protect livestock from attack (p=.0412).

Table 6. Changes In Knowledge About Grizzly Bear Recovery From Baseline To Follow-Up.

Knowledge Variables	Eff. Est.	P Value
Low Percent Of Grizzly Bear Diet That Is Meat Or Fish	.0504	.6947
Adequacy Of Food Source For Grizzly Bears In The North Cascades	.1859	.1347
High Abundance Of Grizzly Bears In North Cascades Before Europeans	.1966	.1655
Low Abundance Of Grizzly Bears Today	-.0599	.6989
Number Of Grizzly Bears Needed To Recover The Population (200-400)	.3009	.0944
High Number Of Years It Will Take To Reach Recovery	.0382	.7912
Low Number Of People Killed Each Year By Grizzly Bears	-.0602	.6856
Low Number Of People Injured Each Year By Grizzly Bears	.1348	.3488
Legal To Kill Grizzly Bears In Self-Defense	-.1910	.3384
Illegal To Kill Grizzly Bears To Protect Livestock	-.2976	.0412

Demographic Characteristics Associated With Knowledge About Grizzly Bear Recovery

Table 7 reveals associations between knowledge about grizzly bears (and grizzly bear recovery) and demographic variables. Age was most highly associated with knowledge regarding grizzly bears, although there was no clear pattern across all of the ten knowledge variables. Older respondents were more accurate in assessing the percentage of meat and fish in a grizzly bear's diet ($p=.0121$), food resources in the North Cascades ($p=.0004$), years to grizzly bear recovery ($p=.0109$), number of people hurt by grizzly bears ($p=.0001$), and the legality of killing grizzly bears in self-defense ($p=.0061$). Younger respondents were more accurate for grizzly bear population before Europeans arrived ($p=.0179$), number of people killed by grizzly bears ($p=.0001$), and the illegal status of killing a grizzly bear to protect livestock ($p=.0002$).

Of the ten knowledge variables examined, gender was important in predicting six. Generally, males exhibited better knowledge about grizzly bears than females. Male responses were more accurate for diet ($p=.0001$), years to recovery ($p=.0415$), number of people killed by grizzly bears ($p=.0001$), and number of people injured by grizzly bears ($p=.0001$). In contrast, females were more knowledgeable about the abundance of bears before Europeans arrived ($p=.0041$) and the current grizzly bear population ($p=.0012$).

Table 7. Knowledge About Grizzly Bear Recovery By Demographics.

Knowledge Variables	Gender	County	Age	Edu.	Inc.*	Use**
Percent Of Diet That Is Meat Or Fish	Male ³	-	Older ²	Higher ³	-	-
Adequacy Of Food Source	-	-	Older ³	-	-	Yes ²
Abundance Of Bears Before Europeans	Female ²	-	Younger ²	-	No ¹	-
Abundance Of Grizzly Bears Today	Female ³	-	-	Higher ¹	-	-
Number Of Bears Needed For Recovery	-	-	-	-	-	-
Number Of Years To Reach Recovery	Male ¹	-	Older ²	Higher ³	-	-
Number Of People Killed Each Year	Male ³	-	Younger ³	-	-	Yes ³
Number Of People Injured Each Year	Male ³	-	Older ³	-	Yes ²	Yes ²
Legal To Kill In Self-Defense	-	-	Older ²	-	-	Yes ¹
Illegal To Kill To Protect Livestock	-	-	Older ³	Higher ¹	No ¹	-

* Family Income Dependent Upon The Forest

** Use Forest For Camping, Hiking, Etc.

¹ Significant at the $p=.05$ level

² Significant at the $p=.01$ level

³ Significant at the $p=.001$ level

Education was also a strong predictor of knowledge. Respondents with higher education provided more accurate answers for diet ($p=.0010$), for current grizzly bear population ($p=.0170$), for number of years to recovery ($p=.0001$), and for the illegal status of killing a grizzly bear to protect livestock ($p=.0509$). Higher frequency of forest use (i.e., camping, hiking, etc.) was associated with better assessment of food source adequacy ($p=.0042$), the number of people killed by grizzly bears ($p=.0001$), the number of people injured by grizzly bears ($p=.0207$), and the legal status of killing grizzly bears in self defense ($p=.0168$). Respondents with a family income from the forest were less aware of grizzly bear populations before Europeans ($p=.0318$) and more aware of the small number of people that are hurt by grizzly bears ($p=.0043$).

Information Sources About Grizzly Bear Recovery

Appendix 2, figure 15 shows reported information sources on grizzly bears for the baseline and follow-up surveys. Newspapers/magazines and television/films clearly provided the most information to the general public on grizzly bears. Friends and personal experience were also key sources of information. Others sources (e.g., family, brochures, federal and state agencies, organizations, schools, and the internet) were much less important for providing information on grizzly bears. Oddly, a much larger percentage at follow-

up (20%) reported “Don’t Have Any Information” than at baseline (5%). This may have been caused by the insertion of a new question on GBOP information sources (see below) just before the general information source question in the follow-up.

Appendix 2, figure 16 indicates the “penetration” of GBOP information sources into the target audience (i.e., rural residents in eastern Whatcom and Skagit Counties). Overall, 27% of respondents remembered receiving information on grizzly bears from at least one GBOP source. Newspaper articles about grizzly bears that mentioned the GBOP or Bear Smart Program were the most common source of information (14%). The GBOP brochure was recognized as a source by 9% of respondents. This is a very high exposure rate in a general population for a written education material like the GBOP brochure. Substantially fewer respondents reported exposure to grizzly bear information from other GBOP sources, although again, GBOP information sources such as posters and direct contact with project staff were unexpectedly high for a community wide project.

Demographic Characteristics Associated With Information Sources About Grizzly Bear Recovery

Grizzly bear information sources were more or less effective depending on demographic characteristics (table 8). Younger (p=.0206), less educated (p=.0465), and forest non-users (p=.0367) were more likely to report that they had no information sources on grizzly bears. Newspapers/magazines were more likely to reach males (p=.0216), older respondents (p=.0001), and higher educated respondents (p=.0104). In contrast, less educated respondents were more likely to report TV/films as an important information source (p=.0547). Males were more likely to report brochures as an information source (p=.0079). Environmental organization newsletters and federal and state agencies were more likely to be reported as information sources by higher educated respondents (p=.0107 and p=.0021 respectively). As expected, younger respondents were more likely to report grizzly bear information from schools (p=.0005).

Table 8. Reported Information Sources On Grizzly Bears By Demographics.

Information Sources	Gender	County	Age	Edu.	Inc.*	Use**
No Information On Grizzly Bears	-	-	Younger ¹	Lower ¹	-	No ¹
Newspapers Or Magazines	Males ¹	-	Older ³	Higher ²	-	-
Television Of Films	-	-	-	Lower ¹	-	-
Internet	-	-	-	-	-	-
Public Meetings	-	-	-	-	-	-
Brochures	Males ²	-	-	-	-	-
School	-	-	Younger ³	-	-	-
Environmental Organization	-	-	-	Higher ²	-	-
Social Or Recreational Organization	-	-	-	-	-	-
Production Organization	-	-	-	-	-	-
Professional Organization	-	-	-	-	-	-
Federal Or State Agency	-	-	-	Higher ²	-	-
Friends	-	-	-	-	-	-
Family	-	-	-	-	-	-
Personal Experience	-	-	-	-	-	-

* Family Income Dependent Upon The Forest

** Use Forest For Camping, Hiking, Etc.

¹ Significant at the p=.05 level

² Significant at the p=.01 level

³ Significant at the p=.001 level

The penetration of some, but not all, GBOP information sources also varied by demographic characteristics (table 9). Newspapers that mentioned GBOP were more likely to be read by respondents that were older

(p=.0422), had more education (p=.0084), and had a family income dependent on the forest (p=.0354). Brochures were more likely to be reported as a source by Skagit County residents (p=.0427), higher educated respondents (p=.0280), and users of the forest (p=.0521). Higher educated respondents were also more likely to report that they had received information from a GBOP slideshow presentation (p=.0351) or via conversations with project staff at a community event (p=.0412) or during a personal meeting or phone conversation (p=.0429).

Table 9. Reported GBOP Information Sources By Demographics.

GBOP Information Sources	Gender	County	Age	Edu.	Inc.*	Use**
Newspaper Article That Mentions GBOP	-	-	Older ³	Higher ²	Yes ¹	-
Radio Ad That Mentions GBOP	-	-	-	-	-	-
Org. Newsletter That Mentions GBOP	-	-	-	-	-	-
GBOP Bear Smart Program	-	-	-	-	-	-
GBOP Brochure	-	Skagit ¹	-	Higher ¹	-	Yes ¹
GBOP Fact Sheet	-	-	-	-	-	-
GBOP Slideshow Presentation	-	-	-	Higher ²	-	-
GBOP Poster	-	-	-	-	-	-
Discussion GBOP Staff At Comm. Event	-	-	-	Higher ¹	-	-
Meeting Or Phone Call With GBOP Staff	-	-	-	Higher ¹	-	-
GBOP Web Page	-	-	-	-	-	-

* Family Income Dependent Upon The Forest

** Use Forest For Camping, Hiking, Etc.

¹ Significant at the p=.05 level

² Significant at the p=.01 level

³ Significant at the p=.001 level

Key Informant Interview Results

The key informant portion of the study was much more informative for what we did not hear, than for what was reported by participants. During the entire 18 month study period, eight key informants reported only eight comments by local residents about grizzly bears or grizzly bear recovery. The comments varied substantially by the characteristics of the person making the comment.

A rancher was reported to have expressed concerns about grizzly bears attacking calves. Two comments from recreation visitors focused on safety concerns while hiking and camping in areas where bears were present. One agency representative made the general comment, “Everyone who says anything about grizzly bear recovery is against it.” It was reported that a friend from British Columbia had stated that grizzly bears would be introduced at a distance from the border and that they probably would not cross into the US. The environmental educator heard from two people that grizzly bears are an important part of the North Cascades and from one person that it would be great to see grizzly bear recovery in the area.

Key informants did not report a single comment about the GBOP, the Bear Smart Assessment, or any of the GBOP education activities that occurred during the 18 month period. This was despite the fact that 27% of local residents in the area received information from the GBOP during the study period. There were also no comments reported regarding federal and state agency recovery actions in the US or the sighting of a grizzly bear near Republic. In general, it appears that local residents have very little concern about grizzly bear recovery in their area.

Media Content Analysis Results

Table 10 shows the results of the media content analysis on the 20 media occurrences identified during the project period. The table highlights the categories in bold and identifies the concepts that fall under each of these categories in non-bold type. “Safety” refers to several concepts that are directly or indirectly related to grizzly bear safety issues. Safety is clearly the issue most often addressed in the media (i.e., encountered 33 times). For the most part, safety mentions are negative, with multiple statements that grizzly bears are dangerous and several stories about injuries being the most common. “Problem grizzly bears will be controlled” is a conceptual construct of respondent’s belief that state and federal agencies will adequately control grizzly bears before they become a safety hazard to humans. This was a positive concept for grizzly bears with the two statements expressing belief that bears would be controlled before causing problems. “Grizzly bear problems are preventable” is a construct of respondent’s belief that they can take personal actions that reduce their chance of encountering a grizzly bear and/or surviving an encounter. This was predominantly positive, with all but one statement indicating that grizzly bear problems can be prevented.

Table 10. Media content analysis of grizzly bear related media occurrences during the project period.

Categories / Concepts	Positive	Negative
Safety	12	21
Grizzly bears are dangerous	2	8
Grizzly bears attack humans	0	2
Grizzly bears kill humans	0	1
Grizzly bears injure humans	0	9
Problem grizzly bears will be controlled	2	0
Grizzly bear problems are preventable	8	1
Losses	0	4
Grizzly bears cause agricultural losses	0	1
Grizzly bears kill pets	0	0
Grizzly bears damage campsite equipment	0	1
Grizzly bears scare away tourists	0	1
Grizzly bear recovery limits access to favorite places	0	1
Government Control	8	6
Grizzly bear recovery limits forest access	0	0
Grizzly bears lead to excessive regulations	0	1
Agencies provide misleading information on GB	0	1
Agencies ignore citizen concerns about grizzly bears	0	0
Government is too slow to act	5	1
Government imposes grizzly bears on local citizens	0	3
Government ignores grizzly bears	3	0
Biocentric Value	7	0
Grizzly bears are essential to the ecosystem	1	0
Grizzly bear habitat destroyed	4	0
Grizzly bear extinction	2	0
Grizzly bear inherent right to exist	0	0
Personal Value	12	0
Existence value	0	0
Wildlife viewing	4	0
Bears killed by humans	8	0
Social Value	1	0
National heritage	1	0
Future generations	0	0

“Losses” refers to both economic losses or other losses that may occur associated with grizzly bear recovery in an area. This appeared to be only a minor issue in the media occurrences covered by this study. Losses were only mentioned four times, including concerns about livestock, campsites, tourism, and limited access to favorite forest sites.

Government control (either positive or negative) associated with grizzly bear recovery appeared to be a major issue in the media occurrences covered by this study. For the most part, these statements were positive toward grizzly bears and grizzly bear recovery. Several media occurrences focused on government’s inability to move quickly enough to protect grizzly bears (five) or on government’s inability to act at all to protect grizzly bears (3). In contrast, other occurrences stressed how grizzly bear recovery was being imposed on local citizens (3).

“Biocentric Value” was also important in media occurrences with all being favorable toward grizzly bears and grizzly bear recovery. Most of these statements focused on grizzly bear habitat destruction and the potential for grizzly bear extinction. “Personal Value” was an even more important category with 12 statements positive toward grizzly bears. Most of these focused on the undesirability of killing grizzly bears in human-bear conflict situations (12), but others were positive toward grizzly bears as important objects for wildlife viewing (4). “Social Value” was addressed much less frequently with only one statement referring to grizzly bears as part of our national heritage.

Discussion

Support for Grizzly Bear Recovery

As indicated in appendix 2, figure 27, rural residents from Skagit and Whatcom Counties reported substantial support for grizzly bear recovery in the North Cascades at both the baseline and follow-up assessments. A majority of respondents reported strong support for recovery and a substantial number reported moderate support for recovery. Combining these two categories indicates that more than three-quarters of respondents supported grizzly bear recovery. Very few (11% at baseline and 8% at follow-up) said that they strongly oppose grizzly bear recovery and even fewer said that they moderately oppose recovery. This support translates into very little concern in the community (very few negative statements discovered through the key informant interviews and media content analysis) about grizzly bear recovery. Also, this support persists despite multiple media statements focused on injuries associated with grizzly bears encounters.

The decrease in strong opposition to grizzly bear recovery from baseline (11%) to follow-up (8%) was statistically significant at $p < .10$. Although the study design did not include control groups that would allow a definitive answer, this change in attitude toward recovery could be attributed to the intensive community-based activities associated with GBOP during the 18 month education phase between the baseline and follow-up surveys. Although there was only a three point change, the reduction in strong opposition could be very important in determining the feasibility of grizzly bear recovery in the North Cascades. This change represented a 27% reduction (3% divided by 11%) in the number of people opposed to grizzly bear recovery. A small and very vocal minority of residents can often have a disproportionate influence on policy decisions.

Wildlife agencies managing grizzly bear recovery have not yet determined whether grizzly bears will be added (i.e., augmentation) to the North Cascades to recover the population. The survey revealed that 33% at baseline and 24% at follow-up said that they would be “more supportive” of grizzly bear recovery in the North Cascades if 5-10 bears had to be added (figure 28). Only 15% at baseline and 14% at follow-up said they would be “less supportive” if bears had to be added. Changes from baseline to follow-up were not statistically significant. There were, however, three statements uncovered in the media content analysis that indicate some concern about government imposing grizzly bears on local residents. Despite these three media statement, clearly, there isn’t a groundswell of opposition among Skagit and Whatcom County

residents to augmentation of the grizzly bear population in the North Cascades. Concern that recovery may require augmentation should not be a barrier to federal and state agencies moving forward on grizzly bear recovery in the North Cascades.

Figure 30 reveals respondent attitudes toward landuse changes that may be needed to recover grizzly bears in the North Cascades. On balance, Skagit and Whatcom County residents would be “more supportive” of recovery if some land use restrictions were required, such as closing some roads and trails at certain times of the year. However, a substantial number of respondents (27% at baseline and 18% at follow-up) were concerned about this issue and reported that they would be less supportive of recovery if landuse changes were needed. When analysis of this question was limited to respondents who were neutral or supportive of grizzly bear recovery (i.e., those where a change would make a difference in overall support), there was a decrease from baseline (18%) to follow-up (14%) in those saying they would be less supportive, indicating that the GBOP community-based approach may also have reduced opposition to grizzly bear recovery associated with landuse changes. Although not a major issue, local concern about landuse changes probably deserves more attention from state and federal agencies responsible for grizzly bear recovery.

Figure 31 shows that respondents would be substantially “more supportive” of recovery if stronger restrictions on garbage disposal methods were required to prevent problems with grizzly bear recovery. For the follow-up survey, 42% said they would be more supportive, while only 5% said they would be less supportive. The 5% finding at follow-up was reduced from 8% for the same question at baseline. This willingness to accept garbage disposal restrictions is also reflected in frequent media statements expressing concern that bears had to be killed because they came into conflict with humans.

Majorities of respondents also reported that they would be “more supportive” of grizzly bear recovery if a program was available to compensate ranchers for grizzly bear related livestock losses (figure 32) and if agency wildlife managers would meet more frequently with residents to discuss recovery (figure 33). This finding is compatible with relatively frequent statements in the media content analysis emphasizing government actions as a major concern with grizzly bear recovery (both negative and positive).

Support for grizzly bear recovery and associated actions varied by demographics (table 3). Females and males differed substantially on six of the ten variables examined. Other than augmentation, females were more supportive of grizzly bear recovery. Whatcom County residents were more likely to support recovery and augmentation than Skagit County residents. This may be due in part to the fact that many residents of eastern Whatcom County are more oriented toward recreation, while some residents of eastern Skagit County are more focused on agriculture. There were also substantial differences by age. Younger residents were far more likely to support recovery, indicating that overall community support for recovery may increase in the decades to come. Education level was only a very minor predictor of attitudes toward recovery and associated actions. The survey revealed opposition to landuse restrictions and distrust of federal and state agencies responsible for recovery among respondents whose family income was dependent on the forest. Since these findings were adjusted for other demographic variables, it is possible that distrust among some of these respondents is due to negative interactions with agency staff about landuse decisions in the past. Respondents who camped, hunted, fished, or used the forest in some other recreational capacity were also found to be slightly less trusting of agency biologist.

Attitudes Toward Grizzly Bears

Figures 17 through 26 show respondent attitudes toward grizzly bears. For the most part, results for these attitudinal items parallel the results for level of support for grizzly bear recovery. Overwhelming majorities of respondents agreed with positive statements about grizzly bears as shown in figures 17, 20, 22, 24, 25, and 26. Nearly everyone agreed with the statement, “Residents and visitors to the North Cascades can prevent almost all problems with grizzly bears by taking a few precautions such as keeping a clean campsite and avoiding areas with heavy bear activity (figure 24). This finding was reinforced by statements revealed by the media content analysis on the preventability of grizzly bear problems.

Majorities, and in some cases strong majorities, of respondents disagreed with negative statements about grizzly bears (figures 18, 19, 21, and 23). Clearly, a substantial proportion of rural residents from Whatcom and Skagit Counties do not hold the negative attitudes toward grizzly bears that are reported for some segments of the human population in the Montana, Wyoming, and Idaho.

Figure 21 provides responses to the statement, “There is no need for grizzly bears in the North Cascades Mountains.” A strong majority disagreed with this statement, and a majority strongly disagreed. Figure 20 provides responses to the statement, “Grizzly bears were here before humans and have an inherent right to live in the North Cascades.” Results from this questionnaire item were very similar to respondent support for grizzly bear recovery, with a majority strongly agreeing with the statement and many others moderately agreeing with the statement. Although not included in a table, it appears that age was the primary predictor of responses to these two questionnaire items, with older respondents being more likely to agree there was no need for grizzly bears and younger respondents more likely to agree that they had an inherent right to live in the North Cascades. These two statements highlight major value differences between those who support or oppose grizzly bear recovery.

Attitudes Toward Wildlife Management Agencies

Attitudes toward wildlife management agencies were mixed, with many people expressing support, but a few doubting that agencies will meet their needs with regard to grizzly bear recovery. Trust in the accuracy of information provided by biologists increased significantly from baseline to follow-up. Although the study design can not prove a causal connection, it is expected that this was due in part to concerted efforts by GBOP staff to establish trust with local residents and to share scientific information. Unfortunately, more than one-third of respondents (38% at baseline and 34% at follow-up) did not report trust in the accuracy of information provided by biologists. Trust in agency science would seem to lie at the core of establishing a good relationship with the public.

The other four agency related variables showed relatively high levels of trust at baseline and at follow-up. However, levels of trust decreased from baseline to follow-up for citizen involvement, responsiveness to citizen concerns, and commitment to removing problem bears. There was also a significant reduction in the expectation that citizens would be willing to participate in the recovery process. These survey findings were reinforced by the media content analysis, which revealed multiple statements about government being too slow to respond to citizen concerns. Apparently, the GBOP community-based approach did not reassure local residents (and the media) about agency commitment to citizen involvement. These findings indicate that important work remains to be accomplished in establishing trust between local residents and state and federal agencies.

Knowledge About Grizzly Bears and Grizzly Bear Recovery

Respondent knowledge about grizzly bears and grizzly bear recovery was very mixed (appendix 2, figures 2 through 14) with some responses right on target and others substantially incorrect. Respondent estimates of past (figure 2) and current (figure 3) grizzly bear population levels in the North Cascades were fairly accurate, with grizzly bears actually being common to abundant in the past and rare today. The majority of respondents (52% at baseline and 50% at follow-up) reported that they did not know the current grizzly bear population (figure 4).

Most respondents appeared to accurately recognize that food sources for grizzly bears in the North Cascades are adequate to good (figure 5), while not as excellent as food sources in coastal areas. The presence of good grizzly bear food sources in the North Cascades has been confirmed by research conducted by the USDA Forest Service and other land management agencies with responsibility for grizzly bear recovery in the North Cascades. Very few respondents (only 1%) realized that the diet of grizzly bears in the North Cascades is often less than 10% meat and fish (figure 6). The diet of grizzly bears along the coast (where they are more commonly known as brown bears) can include substantially more fish.

Respondent knowledge about the grizzly bear recovery process was very poor. Only 8% at baseline and 9% at follow-up knew that a fully recovered grizzly bear population in the North Cascades would include only 250 to 400 bears (figure 7). Even fewer knew that it would take around 100 years to achieve full recovery (figure 8).

Survey participants were fairly well informed about aspects of grizzly bears that directly affect their safety (not unexpected since a strong majority of respondents reported forest related recreation activities). Figure 9 shows that two-thirds or more of respondents recognized that hanging food and garbage at least 15 feet off the ground is the best way to store it. Figure 10 shows that a substantial proportion also correctly identified the primary circumstances under which a grizzly bear is likely to attack a human (i.e., protecting a cub or during a surprise encounter). This knowledge will help hikers and others avoid problems with grizzly bears. A substantial proportion of respondents (27% at baseline and 26% at follow-up) were concerned about encountering grizzly bears in a campsite. Although this may be strong motivation for enhancing campsite sanitation, it also represents a relatively poor understanding of grizzly bear behaviors and undue concern for safety in grizzly bear habitat, even when appropriate sanitation practices are performed.

Most respondents (81% at baseline and 85% at follow-up) knew that it is legal to kill a grizzly bear in self-defense or in defense of other people (figure 11). Unfortunately, too many (31% at baseline and 38% at follow-up) incorrectly believe that it is legal to kill a grizzly bear to stop an attack on livestock (figure 12). Given the already severe human related impacts on recovering grizzly bear populations, this is clearly an issue that would benefit from more education.

Most respondents were generally aware that very few people are killed (figure 13) or injured (figure 14) by grizzly bears each year in the western United States. However, very few were familiar with statistics that show extremely few deaths and injuries from grizzly bears. Records indicate that, only 18 people have been killed by grizzly bears during the past 100 years in the western United States. More than one-third of respondents either did not know or substantially over estimated the number of people killed. Even a larger proportion of respondents (more than 50%), either did not know or substantially over estimated the number of people injured each year. These data reveal that a substantial proportion of Skagit and Whatcom County residents may have unwarranted fears about personal safety regarding grizzly bears.

Respondent Information Sources

Figure 15 displays respondent sources of information on grizzly bears and grizzly bear recovery. Respondents could and did occasionally select more than one primary source, thus the percentages listed in figure 15 add to more than 100%. As expected, newspapers, magazines, and television were the primary sources of information. Personal experience (undefined) and friends were also major sources of information. Unfortunately, all of the work that goes into programs and educational materials (i.e., brochures) sponsored by wildlife and land management agencies appears to reach very few people. Despite the fact that the survey respondents live less than 15 miles from the recovery area, more than one-third knew nothing about grizzly bear recovery in the North Cascades (figure 1). Less than 10% at baseline and follow-up reported that they knew a great deal about recovery. Environmental organizations seem to fare nearly as well as agencies in reaching local residents with information about grizzly bears. Very few respondents listed social, recreational, professional, or production organizations as their primary source of information on grizzly bears and grizzly bear recovery, indicating that grizzly bear recovery is not a controversial social issue on the west side of the North Cascades.

Conclusions

The level of support for grizzly bear recovery among rural residents in Skagit and Whatcom Counties (i.e., those living east of Highway 9) was unknown before these surveys were completed. Anecdotal reports from this area and other parts of Washington indicated that a substantial proportion of rural residents might be strongly opposed to grizzly bear recovery, especially if it were occurring near their homes. In contrast to this expectation, these surveys revealed strong support for grizzly bear recovery in the North Cascades among rural residents in Skagit and Whatcom Counties. Although there were minor differences, the survey also revealed a preponderance of strong support from every demographic segment of the population.

These survey findings were strongly reinforced by results from the key informant and media content analysis portions of the study. These components of the evaluation revealed very limited community discussion or concern about grizzly bear recovery among the general public or in the media. This contrasts sharply with the GBOP pilot study experience in Okanogan County on the east side of the North Cascades, where introduction of the GBOP prompted outspoken responses from several elected officials, several negative newspaper articles, and at least one letter-to-the-editor opposing grizzly bear recovery. Key informant interviews and a media content analysis were not conducted on the east side, so informal comments by local residents, both negative and positive, were missed by GBOP staff.

Support for grizzly bear recovery among Skagit and Whatcom County residents appears to be rooted in attitudes toward grizzly bears that are based on broader values. Most Skagit and Whatcom County residents (82% at baseline and follow-up) perceive grizzly bears as a symbol of the American frontier and part of our national heritage that should be preserved, especially for future generations. A strong majority (78% at baseline and 81% at follow-up) also recognizes the importance of grizzly bears to the North Cascades ecosystem. More than three-quarters also agree that grizzly bears have an inherent right to live in the North Cascades, a biocentric attitude that places value on nature above and beyond instrumental uses by humans. Grizzly bear related biocentric, personal, and social values held by local citizens were also clearly revealed by the media content analysis.

The surveys also showed a clear understanding and appreciation by Skagit and Whatcom County residents that they may need to make minor changes in their lifestyles to recover grizzly bears in a way that would be safe for both bears and humans. Support for recovery increases when Skagit and Whatcom County residents are told that a few roads and trails might need to be closed part of the year to assist grizzly bear recovery. Most Skagit and Whatcom County residents support stronger restrictions on garbage disposal if they are necessary to achieve grizzly bear recovery. Almost everyone recognizes that most problems with grizzly bears can be prevented by changes in human behaviors.

The extent to which the GBOP modified attitudes toward grizzly bears and grizzly bear recovery cannot be fully quantified from this study, due to the fact that control groups were not included in the pre-post study design (these would have been prohibitively expensive). However, the cross sectional baseline and follow-up surveys did show that there were some significant changes during the GBOP. Although overall support for recovery did not increase significantly (it was already so high there was realistically very little room for improvement), there was a significant decrease in strong opposition to recovery. This could make an important difference in whether grizzly bear recovery will succeed or fail in Whatcom and Skagit Counties.

There was also significantly improved trust in the information that is provided by agency biologists on grizzly bear issues. Unfortunately, the survey revealed substantial opportunity for further improvement in public trust of wildlife and land management agencies responsible for grizzly bear recovery in the North Cascades. About one-quarter to one-third of rural residents in Skagit and Whatcom Counties have doubts about agency science, the meaningfulness of public participation processes, and the commitment of wildlife managers to public safety during grizzly bear recovery. There is a clear need for more direct interaction between agency staff and local citizens to explain the results of scientific research on grizzly bears, to communicate how the recovery process will respond to citizen concerns, and to outline actions that will be

taken by wildlife managers to assure public safety. GBOP may be able to further help facilitate confidence building when the state and federal agencies move into a more active recovery phase.

There were also a few, but not many, significant changes in knowledge regarding grizzly bears. Survey results clearly show that Skagit and Whatcom County residents need more information on grizzly bears and grizzly bear recovery. Very few people at baseline or follow-up knew that meat and fish comprise only 10% of the grizzly bear's diet in the North Cascades. Substantial proportions of Skagit and Whatcom County residents do not appreciate how few people are killed or injured by grizzly bears each year in western states. Very few realize that full recovery of the grizzly bear population in the North Cascades will take around 100 years and that only about 250 to 400 bears will need to be present when agencies declare the population recovered. Alarming, about one-third of Skagit and Whatcom County residents do not know that it is illegal to kill a grizzly bear that is attacking livestock. Although it occurs infrequently, intentional killing of grizzly bears threatening livestock can be a major factor in preventing recovery in a population that is critically dependent on the health and reproduction of every individual bear.

The GBOP needs to strengthen educational efforts, involve agency personnel in project activities, and reach a broader audience in Skagit and Whatcom Counties. The limited opposition to grizzly bear recovery revealed by this survey may be even further diminished when Skagit and Whatcom County residents receive additional information about grizzly bears and learn to place more trust in the agencies responsible for grizzly bear recovery in the North Cascades.

Some might question the accuracy of the survey results and challenge whether they represent the opinions of rural residents in Skagit and Whatcom Counties. However, the large sample sizes in these surveys (i.e., 508 at baseline and 512 at follow-up) yield point estimates that are accurate to within plus or minus 4%. Results from the baseline and follow-up survey were very similar (except as indicated above). The large number of people completing the survey and similar findings at baseline and follow-up give us confidence that the results (e.g., 76% - 79% support for grizzly bear recovery) accurately represent the opinions of rural residents in Skagit and Whatcom Counties. Anecdotal reports indicated that study participants might be supportive of grizzly bear recovery, but that they might be opposed to adding bears to the North Cascades to accomplish recovery. However, there appears to be no major concern among Skagit and Whatcom County residents about augmentation of the grizzly bear population.

In conclusion, based on these research results, it appears that Skagit and Whatcom County residents are ready for active steps toward grizzly bear recovery in the North Cascades. Additional education and confidence building that is needed to support recovery can be delivered effectively while other recovery actions are on-going.

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Appendix 1.

Grizzly Bear Outreach Project Evaluation

Follow-Up Survey Questionnaire

(Computer Assisted Questionnaire Used During Interviews)

1. PRESS RETURN WHEN INTERVIEW BEGINS

START

TIMER STARTS AFTER THIS SCREEN

2. Time when interview began

TIME1 1:1-5

|_|_|_|_|_|_|_|

3. SURVEY NAME

SNAME 1:6

(CHECK ONLY ONE ANSWER)

|_| 1. GBOP2005

4. ENTER SAMPLE FROM CALL SHEET.

SAMPLE 1:7

(CHECK ONLY ONE ANSWER)

|_| 1. Invalid answer. Select another. (GO TO QUESTION 4)

|_| 2. Old (GO TO QUESTION 5)

|_| 3. New (GO TO QUESTION 9)

5. ENTER GENDER FROM CALL SHEET.

GEN1 1:8

(CHECK ONLY ONE ANSWER)

|_| 1. Invalid answer. Select another. (GO TO QUESTION 5)

|_| 2. Male

|_| 3. Female

|_| 4. Unknown

6. Determines introduction.

CALC1 1:9

(CHECK ONLY ONE ANSWER)

|_| 1. man

|_| 2. woman

COMPUTE IF (#5 = 2) 1

COMPUTE IF (#5 = 3) 2

7. Determines introduction.

CALC2 1:10

(CHECK ONLY ONE ANSWER)

- 1. he
- 2. she

COMPUTE IF (#5 = 2) 1
 COMPUTE IF (#5 = 3) 2

8. Hello, my name is _____, and I'm calling on behalf of Responsive Management and we are conducting a research project about grizzly bears in Washington. Our records indicate that a ___ age ___ participated in the survey in 2003. Is ___ available to assist us with our follow-up research? (MUST GET THIS PERSON. IF RESPONDENT IS A NEW RESIDENT, ASK FOR PHONE NUMBER OF FORMER RESIDENT.)

CONPER 1:11-12

(CHECK ONLY ONE ANSWER)

- 1. Correct person, good time to do survey (GO TO QUESTION 14)
- 2. Bad time/schedule recall (CB - do not save) (GO TO QUESTION 10)
- 3. AM, NA, BZ (do not save)
- 4. TM (GO TO QUESTION 78)
- 5. RF
- 6. NE
- 7. DS
- 8. BG
- 9. DL
- 10. Bad Number (missing digit, begins with zero, etc.)

SKIP TO QUESTION 77

=====

9. Hello, my name is _____, and I'm calling on behalf of Responsive Management. We are conducting a research project about grizzly bears in Washington. We are not selling anything. Do you have time to answer some questions?

CONPER2 1:13-14

(CHECK ONLY ONE ANSWER)

- 1. Correct person, good time to do survey (GO TO QUESTION 11)
- 2. Bad time/schedule recall (CB - do not save) (GO TO QUESTION 10)
- 3. AM, NA, BZ (do not save)
- 4. TM (GO TO QUESTION 78)
- 5. RF
- 6. NE
- 7. DS
- 8. BG
- 9. DL
- 10. Bad Number (missing digit, begins with zero, etc.)

SKIP TO QUESTION 77

=====

10. I'd be happy to call back at a more convenient time. When would be the best time for me to call back? Thank you for your time.

WHENCALL

ENTER DAY AND TIME ON CALLSHEET (CB)

SKIP TO QUESTION 77

=====

11. First, we just want to verify the location of your residence. Do you currently live east of Highway 9?

EAST9 1:15

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 11)
- 2. Yes (GO TO QUESTION 12)
- 3. No
- 4. Don't know

SKIP TO QUESTION 13

=====

12. Do you currently live at least 3 miles away from the Sedro Woolley city center?

SWCC 1:16

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 12)
- 2. Yes (GO TO QUESTION 14)
- 3. No
- 4. Don't know

13. I'm sorry, but right now we are only interviewing those residents that live east of Highway 9 AND live at least 3 miles from the Sedro Woolley city center. Thank you very much for your time and cooperation.

SORRY

PRESS ENTER TO CONTINUE

SKIP TO QUESTION 77

=====

14. Grizzly bears are listed as a threatened species under the U.S. Endangered Species Act. They lived throughout Washington and other western states until the early 1900's when bear populations were reduced dramatically by human inhabitants. An inter-agency effort has been underway for more than a decade to recover or sustain a viable population of grizzly bears in a 10,000 square mile area of the North Cascades Mountains.

Prior to this survey, would you say you have heard a great deal, a moderate amount, a little, or nothing about this grizzly bear recovery program?

(READ SCALE AS NECESSARY)

BACKGRND 1:17

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 14)
- 2. A great deal
- 3. A moderate amount
- 4. A little
- 5. Nothing
- 6. Don't know

15. How common would you say grizzly bears were in the North Cascades Mountains before the early 1900s? Would you say grizzly bears were abundant, common, rare, or absent from the North Cascades? (READ LIST AS NECESSARY)

BEFORE 1:18

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 15)
- 2. Abundant
- 3. Common
- 4. Rare
- 5. Absent
- 6. Don't Know

16. How common would you say grizzly bears are in the North Cascades today? Would you say grizzly bears are abundant, common, rare, or absent from the North Cascades? (READ LIST AS NECESSARY)

AFTER 1:19

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 16)
- 2. Abundant
- 3. Common
- 4. Rare
- 5. Absent
- 6. Don't Know

17. What is your estimate of the CURRENT NUMBER of grizzly bears in the North Cascades Mountains? (ENTER ? FOR DON'T KNOW)

NUMNOW 1:20-24

|_|_|_|_|_|_|_|

IF (#17 = 0) GO TO #18

SKIP TO QUESTION 19

=====

18. Did you mean to enter zero?

ZERO1 1:25

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 18)
- 2. Yes
- 3. No (return to previous question) (GO TO QUESTION 17)

19. How good do you think the food source is for grizzly bears in the North Cascades Mountains? Would you say it is excellent, good, adequate, poor, or very poor (READ SCALE AS NECESSARY)

FOODSRCE 1:26

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 19)
- 2. Excellent
- 3. Good
- 4. Adequate
- 5. Poor
- 6. Very poor
- 7. Don't Know

20. For grizzly bears in the North Cascades, what percent of their diet do you think is meat or fish? (ENTER ? FOR DON'T KNOW)

PCTMEAT 1:27-29

|_|_|_|%
|_|_|_|_|

IF (#20 = 0) GO TO #21

SKIP TO QUESTION 22

=====

21. Did you mean to enter zero?

ZERO2 1:30

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 21)
- 2. Yes
- 3. No (return to previous question) (GO TO QUESTION 20)

22. About how many grizzly bears do you think there will need to be in the U.S. portion of the North Cascades Mountains before the population is fully recovered? (ENTER ? FOR DON'T KNOW)

RECOVER 1:31-35

|_|_|_|_|_|_|_|_|_|
|_|_|_|_|_|_|_|_|_|

IF (#22 = 0) GO TO #23

SKIP TO QUESTION 24

=====

23. Did you mean to enter zero?

ZERO3 1:36

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 23)
- 2. Yes
- 3. No (return to previous question) (GO TO QUESTION 22)

24. About how many years do you think it will take for the grizzly bear population to fully recover in the North Cascades? (ENTER ? FOR DON'T KNOW; 8,888.8 FOR NEVER)

YRSRCOVR 1:37-41

|_|,|_|_|_|.|_| years

IF (#24 = 0) GO TO #25

SKIP TO QUESTION 26

=====

25. Did you mean to enter zero?

ZERO4 1:42

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 25)
- 2. Yes
- 3. No (return to previous question) (GO TO QUESTION 24)

26. Now I'd like to ask some questions about your knowledge of grizzly bears.

Which of the following best describes the way in which food and garbage should be stored when camping in bear country? (READ LIST; CHECK ONLY ONE ANSWER)

GARBAGE 1:43

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 26)
- 2. Hang food and garbage 15 feet or more off the ground
- 3. Store food and garbage in a tent
- 4. Store food and garbage in a vehicle
- 5. Bury food and garbage, or
- 6. No special storage means are necessary
- 7. DNR: Other
- 8. DNR: Don't Know

SKIP TO QUESTION 30

=====

27. YOU MAY NOT SELECT MORE THAN TWO ANSWERS.

ONLYTWO

PRESS ENTER TO TRY AGAIN

SKIP TO QUESTION 30

=====

28. IF RESPONDENT CHOSE A REASON, UNSELECT DON'T KNOW. IF RESPONDENT DID NOT CHOOSE ANY REASONS, UNSELECT THE INAPPROPRIATELY CHECKED RESPONSE.

NODK

PRESS ENTER TO TRY AGAIN

SKIP TO QUESTION 30

=====

29. YOU DID NOT USE YOUR SPACE BAR

NOSPAC99

PRESS ENTER TO TRY AGAIN

30. Grizzly bears may attack humans for a number of reasons. Please tell me the TWO most likely reasons why you think a grizzly bear may attack a human? (READ LIST; CHECK ONLY TWO ANSWERS)

ATTACK 1:44-48

(CHECK ALL THAT APPLY)

- 1. Defending itself after being shot by a hunter
- 2. Looking for food in a campsite
- 3. A surprise encounter with a bear in the backcountry
- 4. Protecting a bear cub during an encounter
- 5. Don't know

IF (#30 = 0) GO TO #29

IF (#30 @ 1 AND #30 @ 2 AND #30 @ 3) GO TO #27

IF (#30 @ 1 AND #30 @ 2 AND #30 @ 4) GO TO #27

IF (#30 @ 1 AND #30 @ 3 AND #30 @ 4) GO TO #27

IF (#30 @ 2 AND #30 @ 3 AND #30 @ 4) GO TO #27

IF ((#30 @ 5) AND (#30 @ 1 OR #30 @ 2 OR #30 @ 3 OR #30 @ 4)) GO TO #28

31. Since grizzly bears are protected under the endangered species act, do you think it is legal or illegal to kill a grizzly bear in self-defense or in defense of other people? (READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

LEGLKILL 1:49

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 31)
- 2. Legal
- 3. Illegal
- 4. Don't Know

32. Since grizzly bears are protected under the endangered species act, do you think it is legal or illegal to kill a grizzly bear to stop an attack on livestock? (READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

LIVESTCK 1:50

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 32)
- 2. Legal
- 3. Illegal
- 4. Don't Know

33. How many people would you say are killed by grizzly bears in the western United States each year, not including Alaska? (ENTER ? FOR DON'T KNOW)

PPLKILL 1:51-54

|_|,|_|_|_| people

IF (#33 = 0) GO TO #34

SKIP TO QUESTION 35

=====

34. Did you mean to enter zero?

ZERO5 1:55

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 34)
- 2. Yes
- 3. No (return to previous question) (GO TO QUESTION 33)

35. How many people would you say are injured by grizzly bears in the western United States each year, not including Alaska? (ENTER ? FOR DON'T KNOW)

PPLHURT 1:56-59

|_|,|_|_|_| people

IF (#35 = 0) GO TO #36

SKIP TO QUESTION 39

=====

36. Did you mean to enter zero?

ZERO6 1:60

(CHECK ONLY ONE ANSWER)

|_| 1. Invalid answer. Select another. (GO TO QUESTION 36)

|_| 2. Yes

|_| 3. No (return to previous question) (GO TO QUESTION 35)

SKIP TO QUESTION 39

=====

37. YOU DID NOT USE YOUR SPACE BAR

NOSPAC1

PRESS ENTER TO TRY AGAIN

SKIP TO QUESTION 39

=====

38. YOU HAVE SELECTED INCONSISTENT ANSWERS

INCONS

PRESS ENTER TO TRY AGAIN

39. The Grizzly Bear Outreach Project (GBOP) has been providing information in your area on grizzly bears and black bears. Have you received information during the past 18 months on grizzly bears or black bears from any of the following GBOP sources?

(READ LIST; CHECK IF YES; CHECK ALL THAT APPLY)

GETINF 1:61-74

(CHECK ALL THAT APPLY)

- 1. Newspaper article about bears that mentions the GBOP or Bear Smart
- 2. Program (GO TO QUESTION 39)
- 3. Radio ad about bears that mentions the GBOP or Bear Smart Program
- 4. Organization newsletter article about bears that mentions the GBOP
- 5. or Bear Smart Program (GO TO QUESTION 39)
- 6. Bear Smart Assessment Report
- 7. GBOP brochure
- 8. GBOP fact sheet
- 9. GBOP slide show presentation
- 10. GBOP poster
- 11. Discussion with GBOP staff at a booth or table at a community event
- 12. Personal meeting or telephone conversation with GBOP staff
- 13. GBOP web page
- 14. DNR: None of these

IF (#39 = 0) GO TO #37

IF ((#39 @ 14) AND (#39 @ 1 OR #39 @ 3 OR #39 @ 4)) GO TO #38

IF ((#39 @ 14) AND (#39 @ 6 OR #39 @ 7 OR #39 @ 8)) GO TO #38

IF ((#39 @ 14) AND (#39 @ 9 OR #39 @ 10 OR #39 @ 11)) GO TO #38

IF ((#39 @ 14) AND (#39 @ 12 OR #39 @ 13)) GO TO #38

SKIP TO QUESTION 41

=====

40. YOU DID NOT USE
YOUR SPACE BAR

NOSPAC50

PRESS ENTER TO TRY AGAIN

41. Where have you received most of your information about grizzly bears and grizzly bear recovery? (DNR LIST; CHECK ALL THAT APPLY)

GETIN2 1:75-92

(CHECK ALL THAT APPLY)

- 1. Don't have any information
- 2. Newspapers and magazines
- 3. Television and films
- 4. Internet
- 5. Public meetings
- 6. Brochures
- 7. School
- 8. Environmental organizations (e.g., Northwest Ecosystem Alliance)
- 9. Social/Recreational organizations (e.g., Backcountry Horsemen)
- 10. Production organizations (e.g., Farm Bureau)
- 11. Professional organizations (e.g., Realtors Association)
- 12. Federal and state agencies
- 13. Grizzly Bear Outreach Project
- 14. Friends
- 15. Family
- 16. Personal experience
- 17. Other
- 18. Don't know

IF (#41 = 0) GO TO #40
IF (#41 @ 17) GO TO #42

SKIP TO QUESTION 43

=====

42. ENTER OTHER SOURCE OF INFORMATION.

GETIN2ST 2:1-240

43. Some people like grizzly bears while others dislike them. I'm going to read several statements about grizzly bears and I'd like you to tell me if you agree or disagree with each statement.

The first statement is: Grizzly bears are an important and essential part of the North Cascades ecosystem. Do you agree or disagree with this statement?

(READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

ESSNTIAL 2:241

(CHECK ONLY ONE ANSWER)

1. Invalid answer. Select another. (GO TO QUESTION 43)
 2. Strongly agree
 3. Moderately agree
 4. Neither agree nor disagree
 5. Moderately disagree
 6. Strongly disagree
 7. Don't know

44. Grizzly bears are very dangerous to humans. Do you agree or disagree with this statement?

(READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

DANGROUS 2:242

(CHECK ONLY ONE ANSWER)

1. Invalid answer. Select another. (GO TO QUESTION 44)
 2. Strongly agree
 3. Moderately agree
 4. Neither agree nor disagree
 5. Moderately disagree
 6. Strongly disagree
 7. Don't know

45. Grizzly bears from the North Cascades Mountains will kill many livestock and pets. Do you agree or disagree with this statement? (READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

KLLVSTCK 2:243

(CHECK ONLY ONE ANSWER)

1. Invalid answer. Select another. (GO TO QUESTION 45)
 2. Strongly agree
 3. Moderately agree
 4. Neither agree nor disagree
 5. Moderately disagree
 6. Strongly disagree
 7. Don't know

46. Grizzly bears were here before humans and have an inherent right to live in the North Cascades. Do you agree or disagree with this statement? (READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

BEFOREUS 2:244

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 46)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

47. There is no need for grizzly bears in the North Cascades Mountains. Do you agree or disagree with this statement? (READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

NONEED 2:245

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 47)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

48. Grizzly bears are a symbol of the American frontier and should be preserved as part of our national heritage. Do you agree or disagree with this statement?

(READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

SYMBOL 2:246

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 48)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

49. Grizzly bears will frequently come down out of the North Cascades Mountains into local communities. Do you agree or disagree with this statement?

(READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

COMEDOWN 2:247

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 49)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

50. Grizzly bears in the North Cascades Mountains should be preserved for future generations. Do you agree or disagree with this statement? (READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

PRESERVE 2:248

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 50)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

51. Residents and visitors to the North Cascades can prevent almost all problems with grizzly bears by taking a few precautions such as keeping a clean campsite and avoiding areas with heavy bear activity. Do you agree or disagree with this statement?

(READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

PREVENT 2:249

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 51)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

52. I would derive satisfaction from just knowing that grizzly bears are present in the North Cascades Mountains. Do you agree or disagree with this statement?

(READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

PRESENT 2:250

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 52)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

53. As indicated earlier, a program has been initiated to recover the grizzly bear population in a 10,000 square mile area of the North Cascades Mountains. A fully recovered population will include somewhere between 200 and 400 bears on the US side of the border. It is believed that it will take up to 100 years to fully recover the population in the North Cascades Mountains. At this time, it has not been determined exactly how the grizzly bear population will be recovered in the North Cascades.

In general, do you support or oppose grizzly bear recovery in the North Cascades Mountains?

(READ SCALE AS NECESSARY; PROMPT FOR DEGREE)

PROGOP 3:1

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 53)
- 2. Strongly support
- 3. Moderately support
- 4. Neither support nor oppose
- 5. Moderately oppose
- 6. Strongly oppose
- 7. Don't Know

54. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if recovery required adding 5-10 bears into the North Cascades Mountains from another wild population in the US? (READ SCALE AS NECESSARY)

ADD5TO10 3:2

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 54)
- 2. More supportive
- 3. The same
- 4. Less supportive
- 5. Don't Know

55. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if it could be done without adding bears into the North Cascades Mountains?

(READ SCALE AS NECESSARY)

NOADD 3:3

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 55)
- 2. More supportive
- 3. The same
- 4. Less supportive
- 5. Don't Know

56. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if some land use restrictions were required, such as closing some roads and trails at certain times of the year? (READ SCALE AS NECESSARY)

LANDUSE 3:4

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 56)
- 2. More supportive
- 3. The same
- 4. Less supportive
- 5. Don't Know

57. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if stronger restrictions on garbage disposal methods were required to prevent problems with grizzly bears?
(READ SCALE AS NECESSARY)

RESTRICT 3:5

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 57)
- 2. More supportive
- 3. The same
- 4. Less supportive
- 5. Don't Know

58. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if funds were available to compensate ranchers for livestock losses that may occur from grizzly bears?
(READ SCALE AS NECESSARY)

FUNDS 3:6

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 58)
- 2. More supportive
- 3. The same
- 4. Less supportive
- 5. Don't Know

59. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if agency wildlife managers were able to meet more frequently with local residents to discuss grizzly bear recovery?
(READ SCALE AS NECESSARY)

AGWILD 3:7

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 59)
- 2. More supportive
- 3. No impact
- 4. Less supportive
- 5. Don't Know

60. Agency biologists and wildlife managers are responsible for coordinating and implementing grizzly bear recovery in the North Cascades Mountains. I am going to read several statements about agency biologists and wildlife managers. Please tell me if you agree or disagree with each statement.

Agency biologists provide the most accurate information available for understanding and managing the grizzly bear population in the North Cascades. Do you agree or disagree with this statement? (PROMPT FOR DEGREE; READ SCALE AS NECESSARY)

AGBIOL 3:8

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 60)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

61. Agency wildlife managers will involve local citizens in all major decisions about how grizzly bears will be recovered in the North Cascades Mountains. Do you agree or disagree with this statement? (PROMPT FOR DEGREE; READ SCALE AS NECESSARY)

CTZNNVLV 3:9

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 61)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

62. Agency wildlife managers will pay attention to local citizen concerns about grizzly bear recovery in the North Cascades Mountains. Do you agree or disagree with this statement?
(PROMPT FOR DEGREE; READ SCALE AS NECESSARY)

CITCNCRN 3:10

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 62)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

63. Agency wildlife managers will promptly remove any grizzly bears that linger in areas of high human use, act aggressively toward humans, or kill livestock. Do you agree or disagree with this statement? (PROMPT FOR DEGREE; READ SCALE AS NECESSARY)

REMOVE 3:11

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 63)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

64. Local citizens in and near the North Cascades will be willing to work with wildlife management agencies to determine the best way to recover grizzly bears in the North Cascades Mountains. Do you agree or disagree with this statement? (PROMPT FOR DEGREE; READ SCALE AS NECESSARY)

BESTWAY 3:12

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 64)
- 2. Strongly agree
- 3. Moderately agree
- 4. Neither agree nor disagree
- 5. Moderately disagree
- 6. Strongly disagree
- 7. Don't know

65. Great, we are almost finished. The final few questions are for background information and help us analyze the survey results.

DEMO

PRESS ENTER TO CONTINUE

66. Have you ever camped, hunted, fished, or participated in any other outdoor recreation activities in Washington's North Cascades Mountains?

EVERDONE 3:13

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 66)
- 2. Yes
- 3. No
- 4. Don't know

67. Has your or your family's income been dependent on the forest or a forestry related industry at any time in the past five years?

FOREST 3:14

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 67)
- 2. Yes (GO TO QUESTION 68)
- 3. No
- 4. Don't know

SKIP TO QUESTION 69

=====

68. What job did you or someone else in your family have that was dependent on the forest or was forestry related?

FORESTST 4:1-240

69. What is the highest grade level you have completed in school?
(READ LIST AS NECESSARY)

LEVED 4:241

(CHECK ONLY ONE ANSWER)

- 1. (DNR: Invalid answer. Select another.) (GO TO QUESTION 69)
- 2. Grades 1 - 12, but no HS diploma
- 3. High school graduate or equivalent
- 4. Some college/2-Year degree
- 5. Completion of trade school
- 6. College graduate (4-year degree)
- 7. Graduate or professional degree
- 8. (DNR: REFUSED)

70. Finally, may I ask your age?
(ENTER ? FOR DON'T KNOW; 888 FOR REFUSED)

AGE 4:242-244

|_|_|_|

LOWEST VALUE = 1

71. That's the end of the questionnaire,
thank you very much for your time and cooperation!
(IF RESPONDENT HAS ANYTHING TO ADD PLEASE TYPE IT
HERE; PUT IN FIRST PERSON: 240 CHARACTERS)

END 5:1-120

72. ENTER COUNTY FROM CALLSHEET.

COUNTY 5:121

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 72)
- 2. Skagit
- 3. Whatcom
- 4. MISSING

73. OBSERVE AND RECORD GENDER

GENDER 5:122

(CHECK ONLY ONE ANSWER)

- 1. Invalid answer. Select another. (GO TO QUESTION 73)
- 2. Don't know
- 3. Male
- 4. Female

74. TIME INTERVIEW WAS COMPLETED

ENDTIME 5:123-127

|_|_|_|_|_|_|_|

75. Please enter your initials.

INTVRINT 5:128-130

|_|_|_|_|

76. Enter the area code and telephone number of number dialed.

TELEPHON 5:131-140

|_|_|_|_|-|_|_|_|_|-|_|_|_|_|_|

LOWEST VALUE = 1

Appendix 2.

Grizzly Bear Outreach Project Evaluation

Baseline and Follow-Up Survey

Variable Frequencies

(As Bar Charts)

Figure 1. Prior to this survey, would you say that you have heard a great deal, a moderate amount, a little, or nothing about this grizzly bear recovery program?

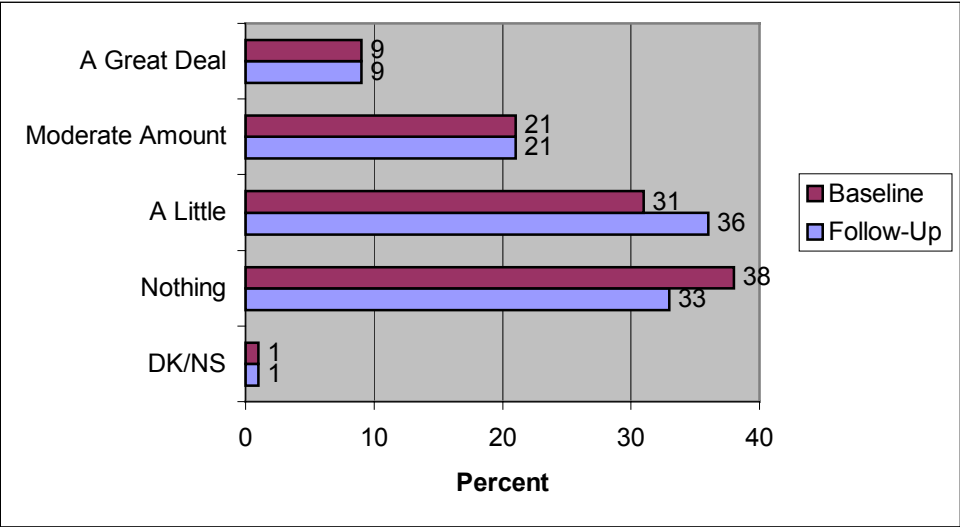


Figure 2. How common would you say grizzly bears were in the North Cascades Mountains before the early 1900s?

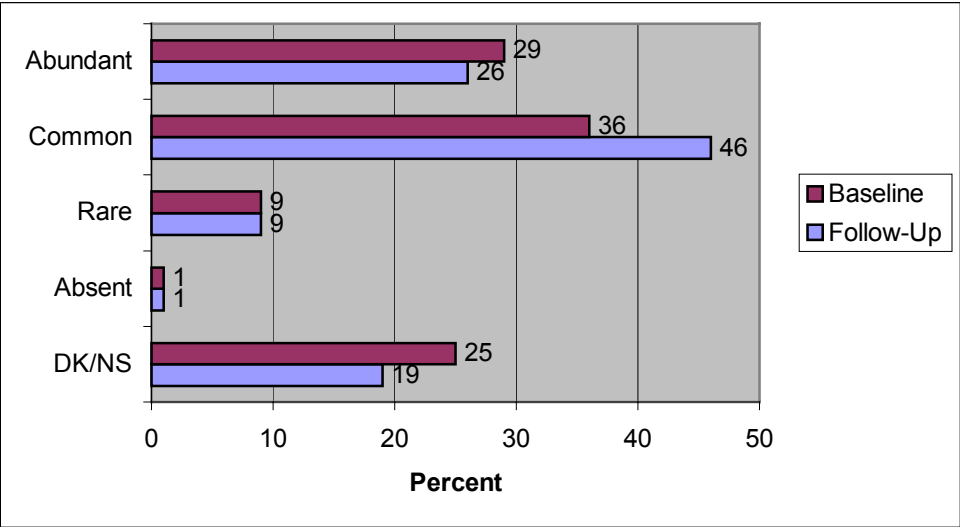


Figure 3. How common would you say grizzly bears are in the North Cascades today?

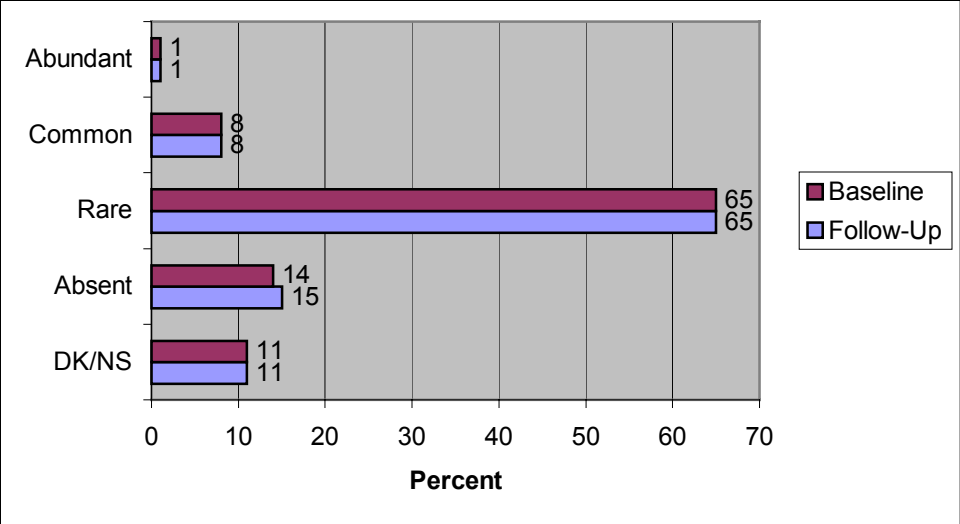


Figure 4. What is your estimate of the current number of grizzly bears in the North Cascades?

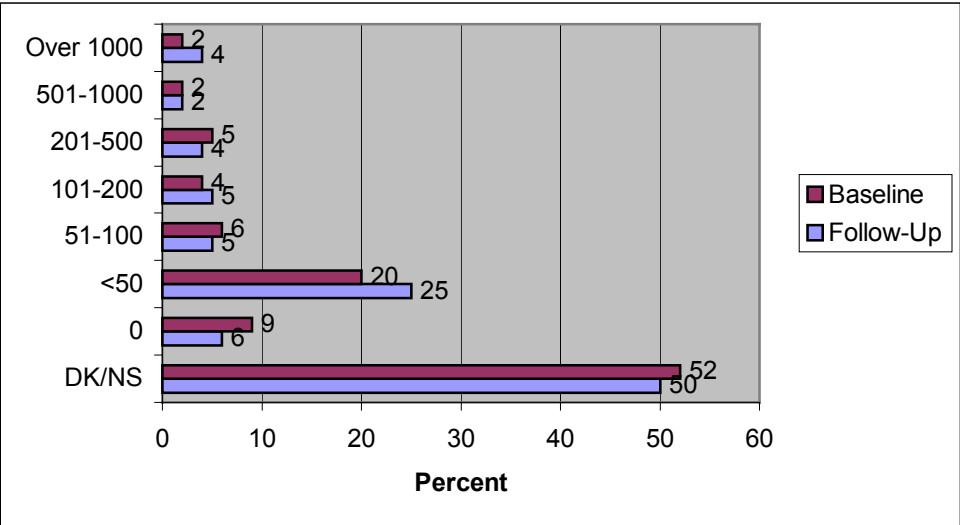


Figure 5. How good do you think the food source is for grizzly bears in the North Cascades?

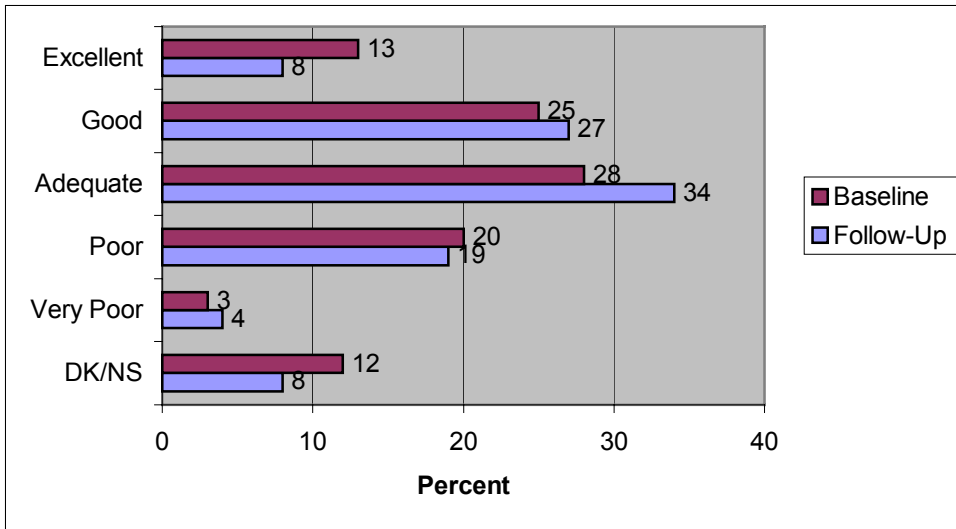


Figure 6. For grizzly bears in the North Cascades, what percent of their diet do you think is meat or fish?

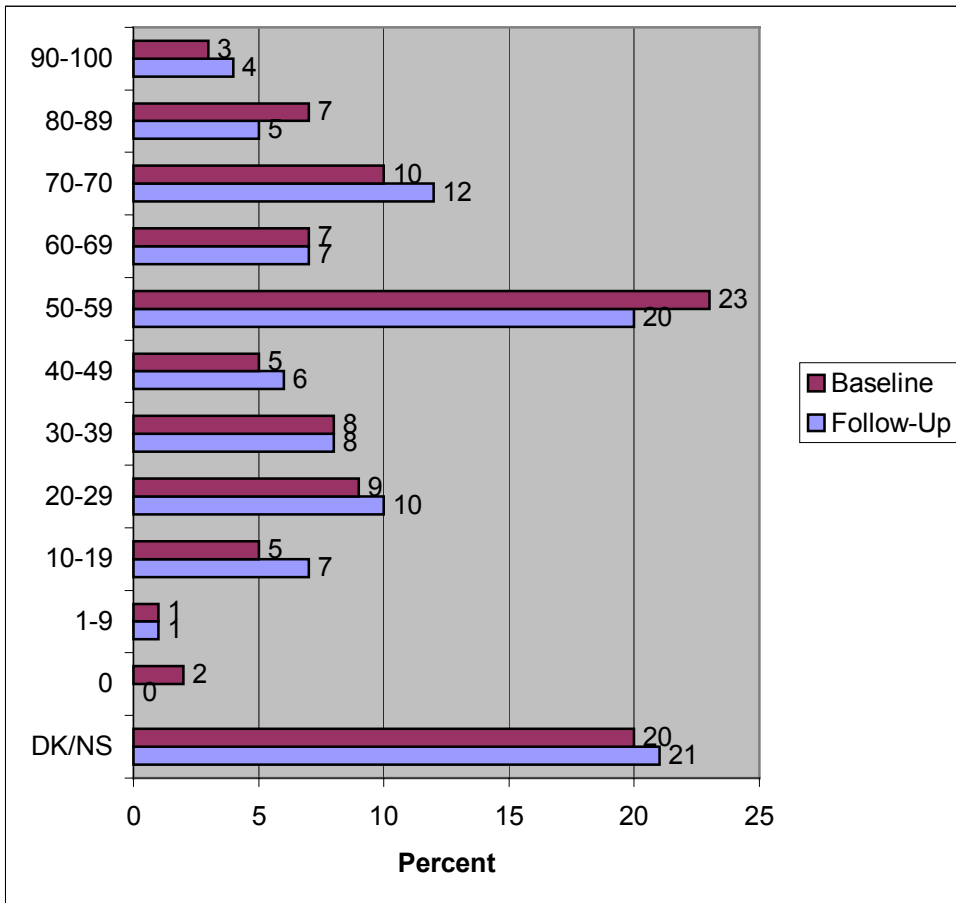


Figure 7. About how many grizzly bears do you think there will need to be in the US portion of the North Cascades before the population is fully recovered?

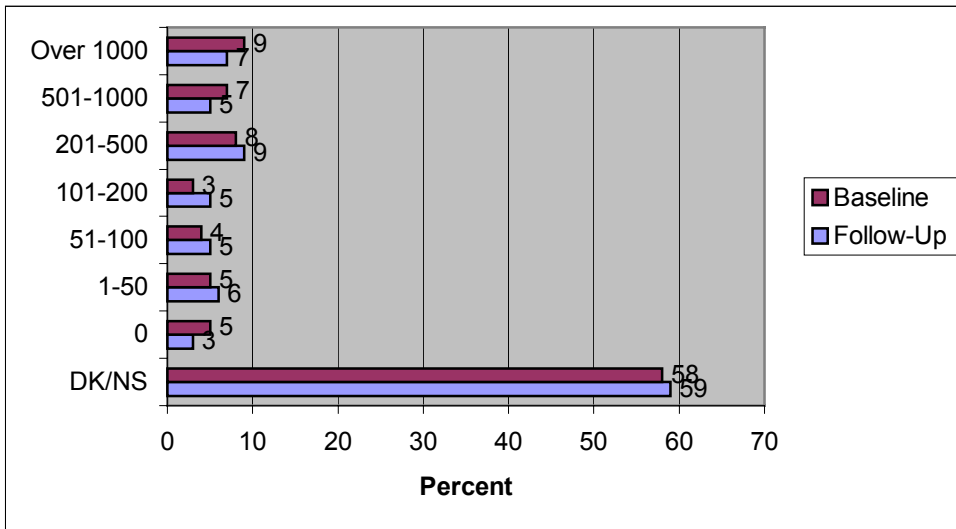


Figure 8. About how many years do you think it will take the grizzly bear population to fully recover in the North Cascades?

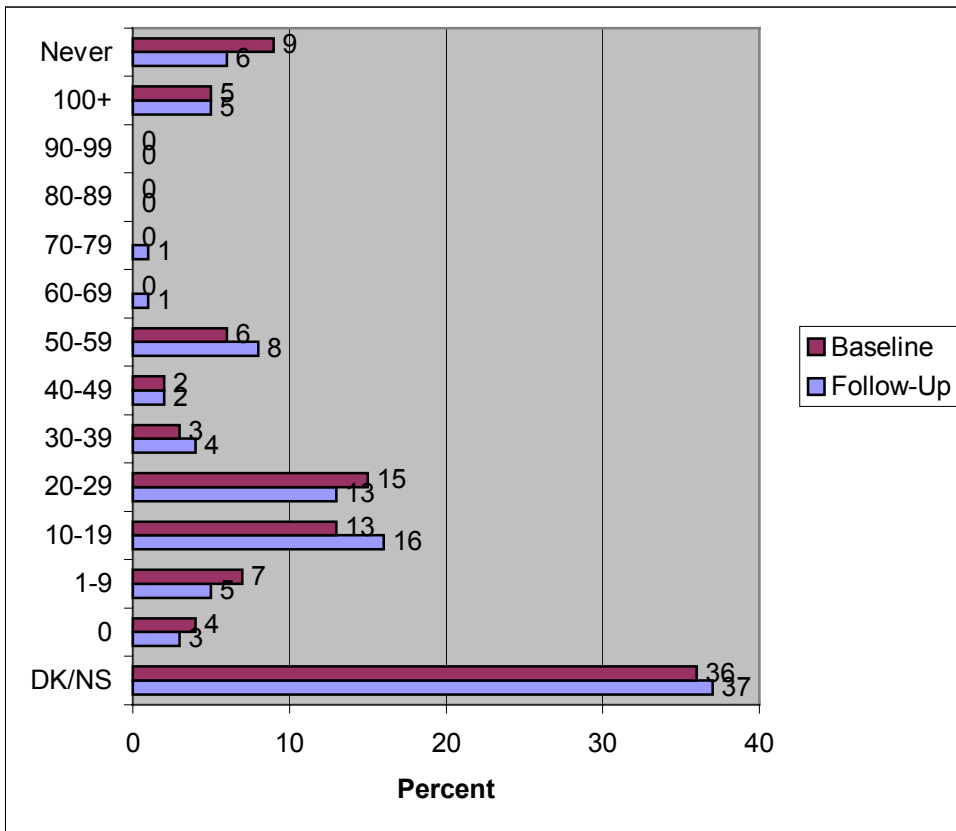


Figure 9. Which of the following best describes the way in which campers should store food and garbage when camping in bear country?

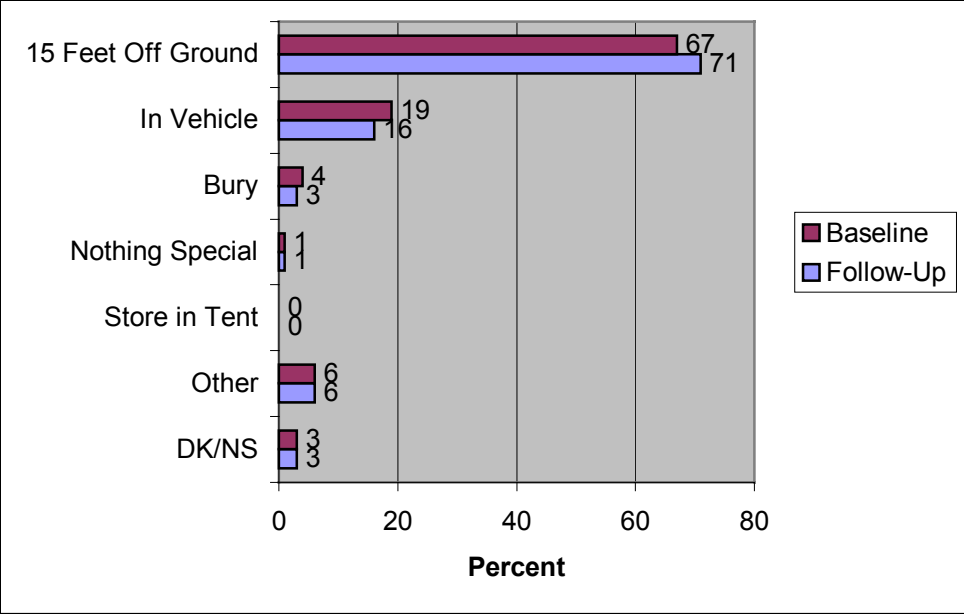


Figure 10. Please tell me the two most likely reasons why you think a grizzly bear may attack a human.

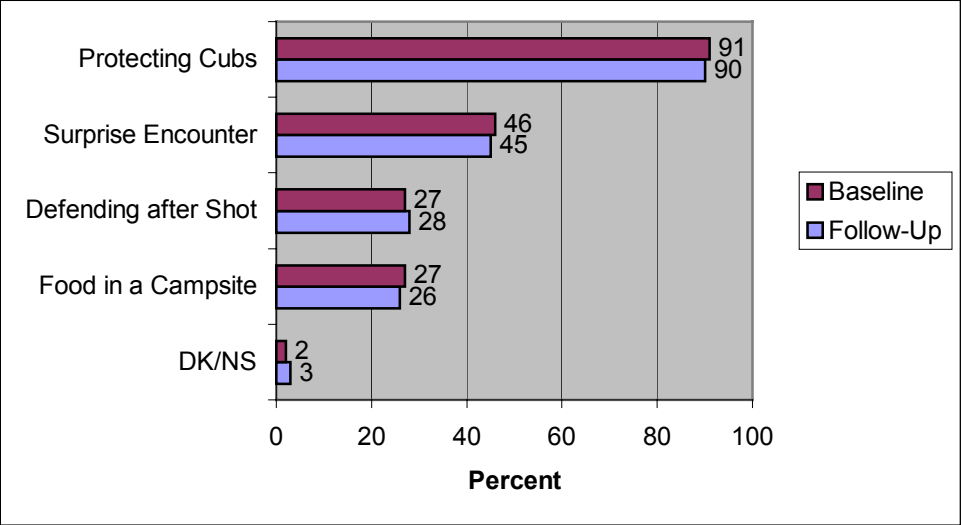


Figure 11. Do you think it is legal or illegal to kill a grizzly bear in self-defense or in defense of others?

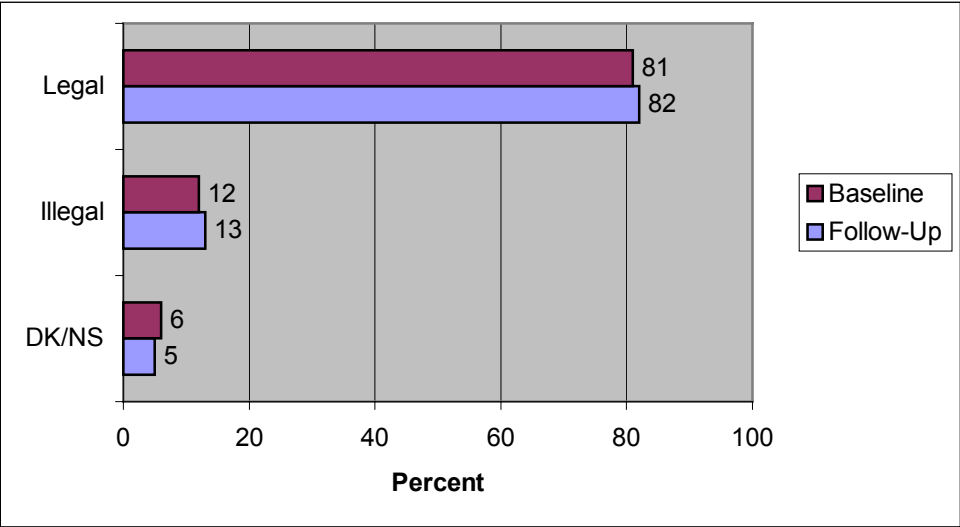


Figure 12. Do you think it is legal or illegal to kill a grizzly bear to stop an attack on livestock?

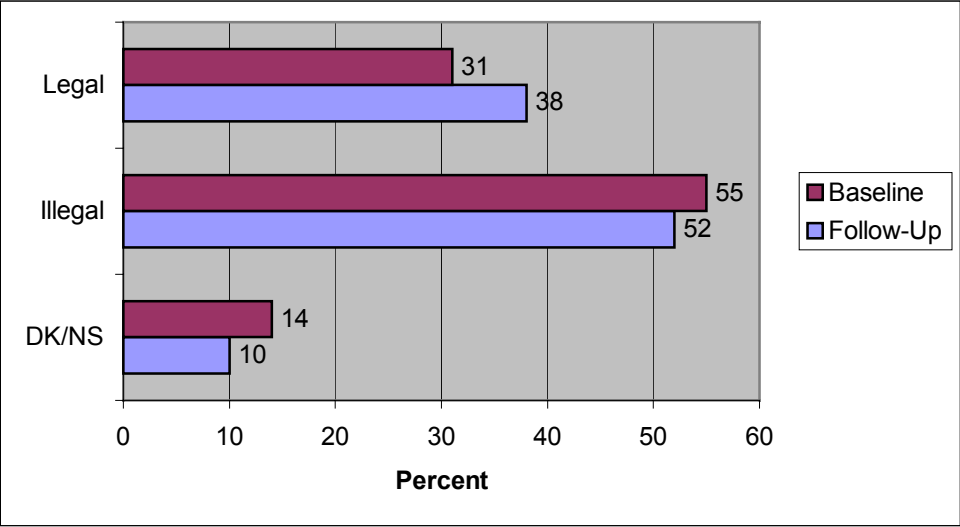


Figure 13. How many people would you say are killed by grizzly bears in the western United States each year, not including Alaska?

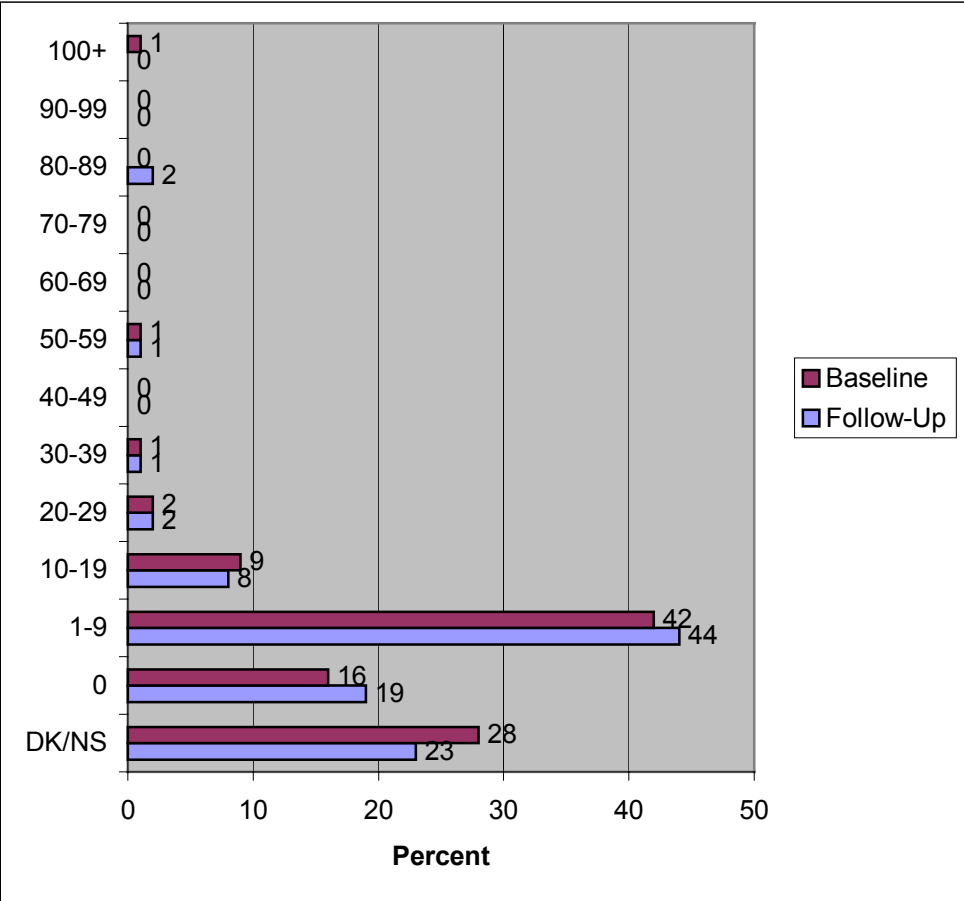


Figure 14. How many people would you say are injured by grizzly bears in the western United States each year, not including Alaska?

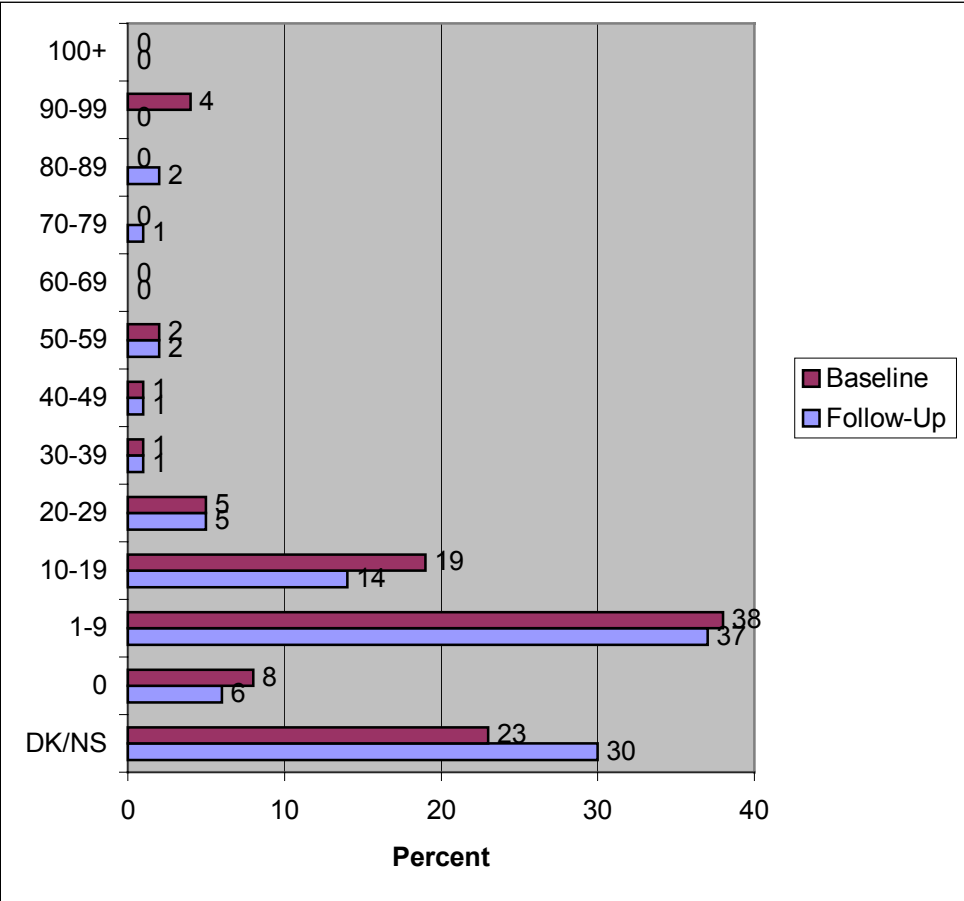


Figure 15. Where have you received most of your information about grizzly bears and grizzly bear recovery?

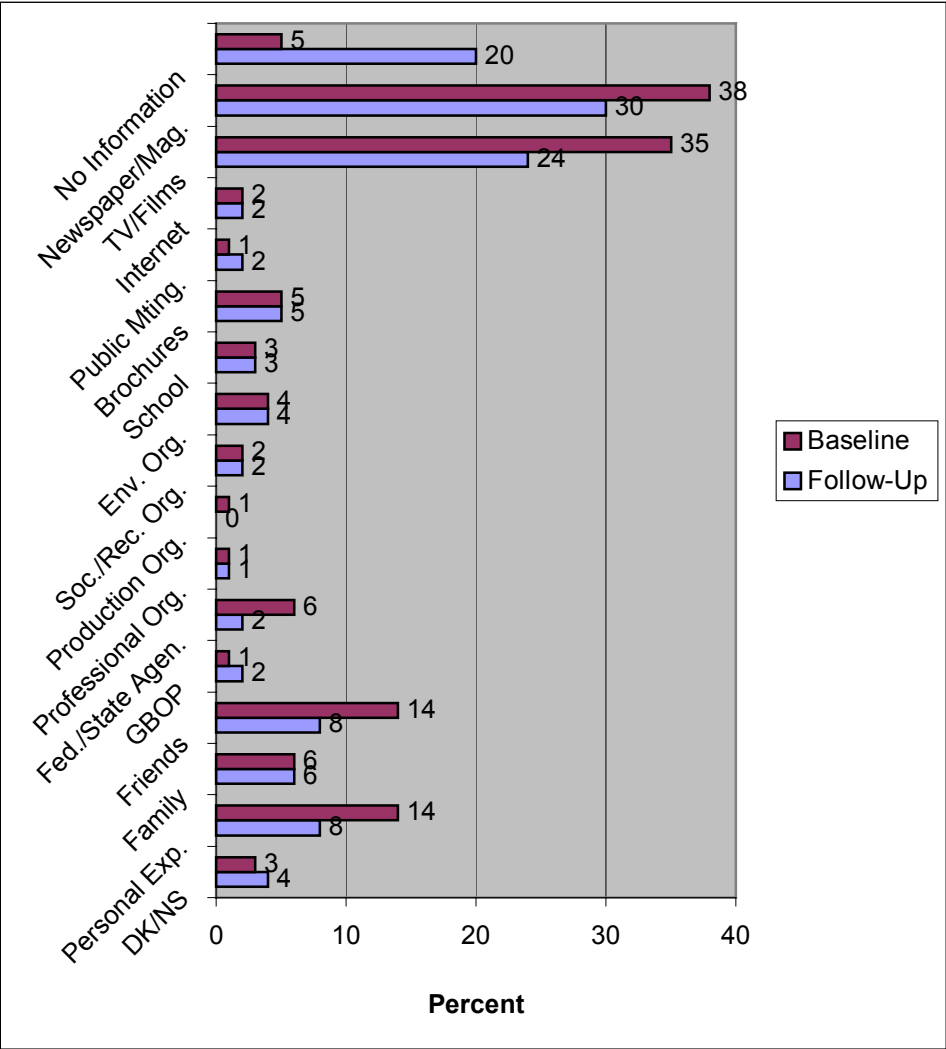


Figure 16. Have you received information during the past 18 months on grizzly bears or black bears from any of the following sources?

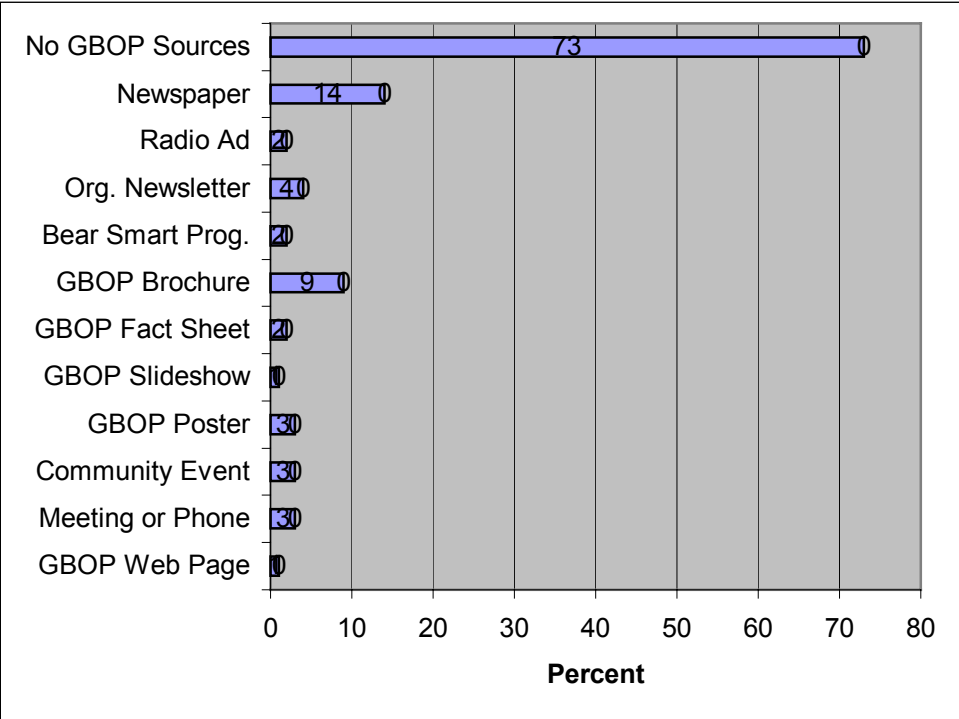


Figure 17. Grizzly bears are an important and essential component of the North Cascades ecosystem. Do you agree or disagree with this statement?

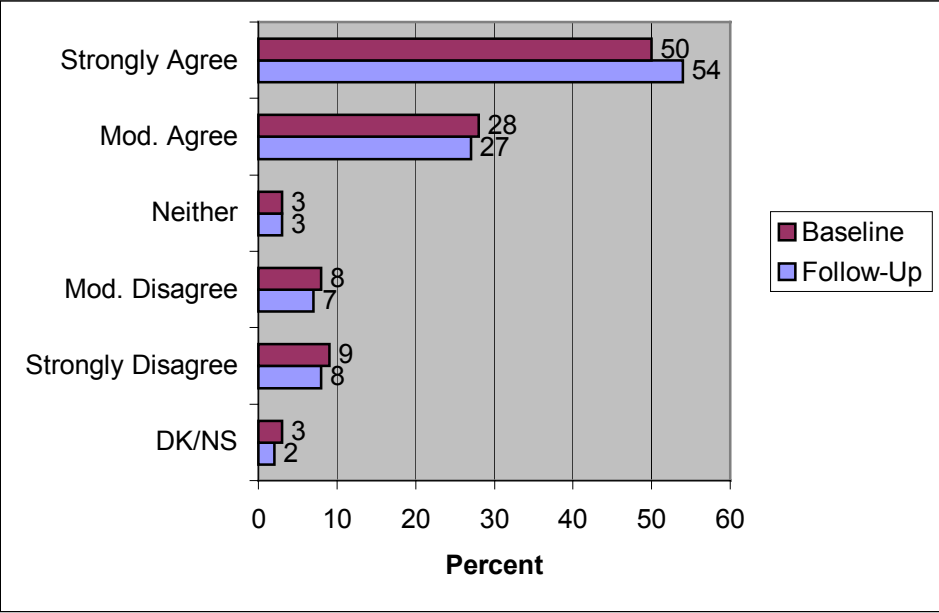


Figure 18. Grizzly bears are very dangerous to humans. Do you agree or disagree with this statement?

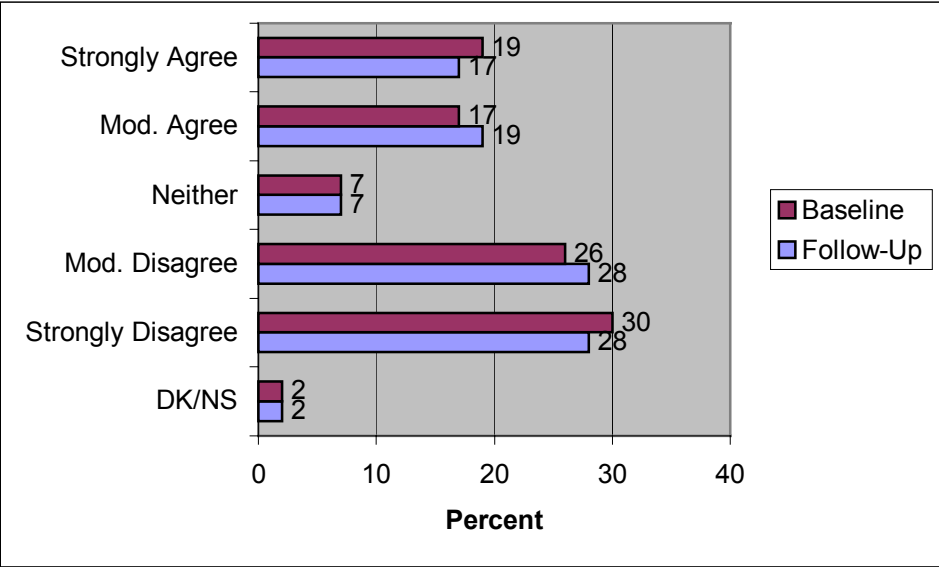


Figure 19. Grizzly bears from the North Cascades will kill many livestock and pets. Do you agree or disagree with this statement?

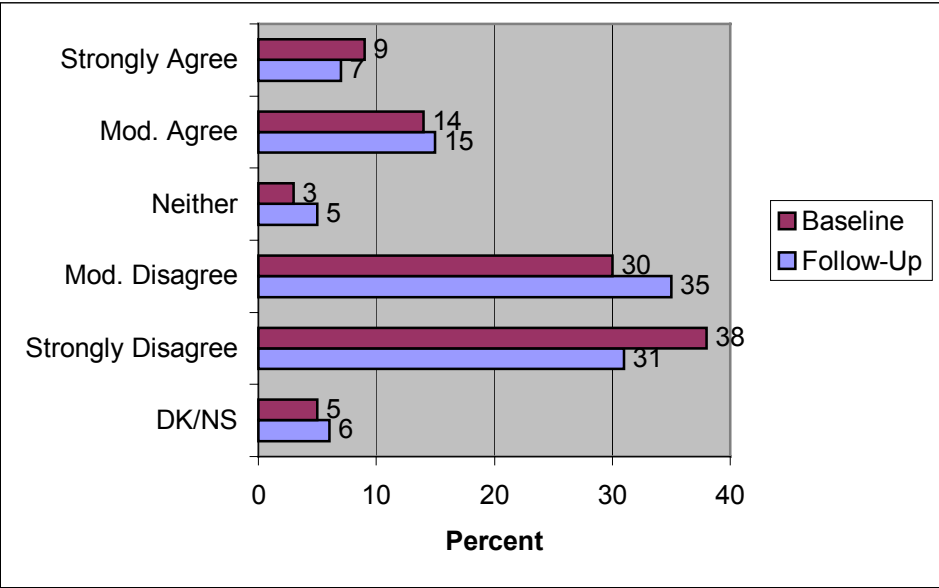


Figure 20. Grizzly bears were here before humans and have an inherent right to live in the North Cascades. Do you agree or disagree with this statement?

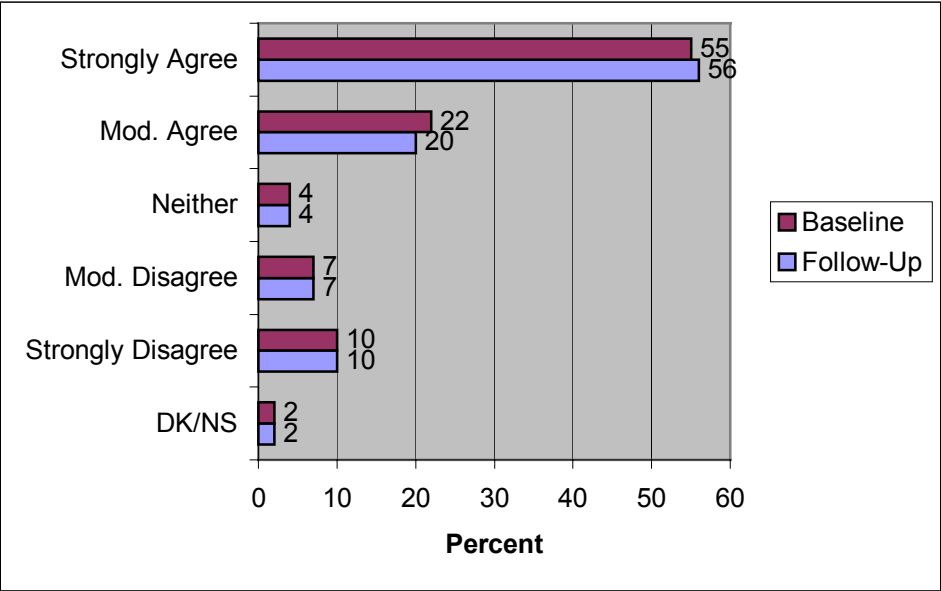


Figure 21. There is no need for grizzly bears in the North Cascades Mountains. Do you agree or disagree with this statement?

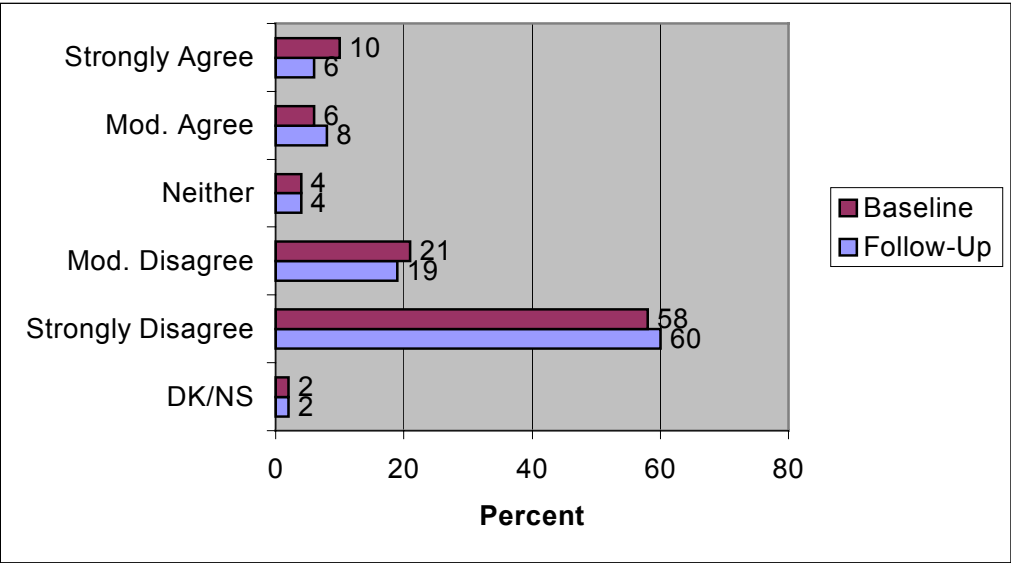


Figure 22. Grizzly bears are a symbol of the American frontier and should be preserved as part of our national heritage. Do you agree or disagree with this statement?

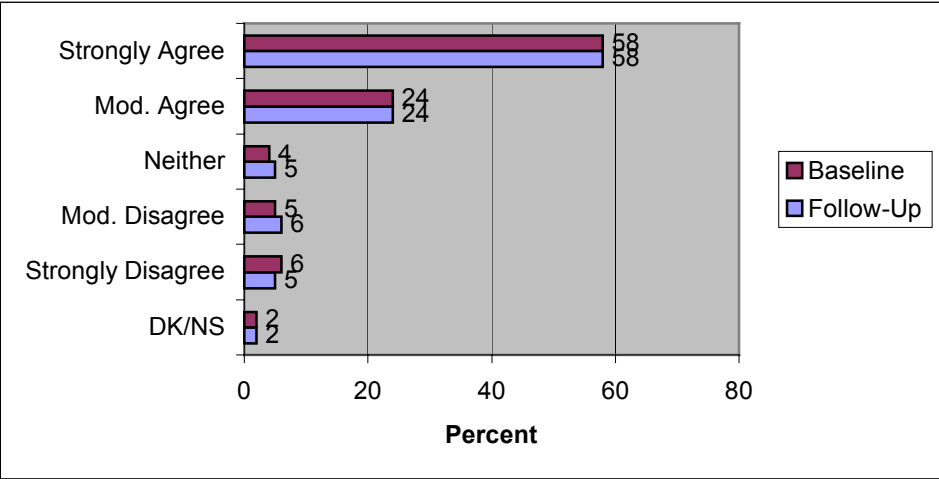


Figure 23. Grizzly bears will frequently come down out of the North Cascades Mountains into local communities. Do you agree or disagree with this statement?

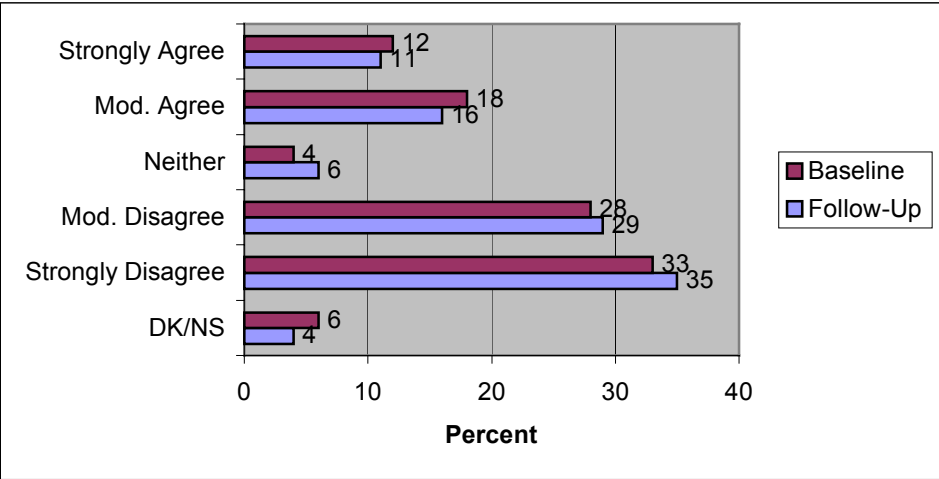


Figure 24. Grizzly bears in the North Cascades Mountains should be preserved for future generations. Do you agree or disagree with this statement?

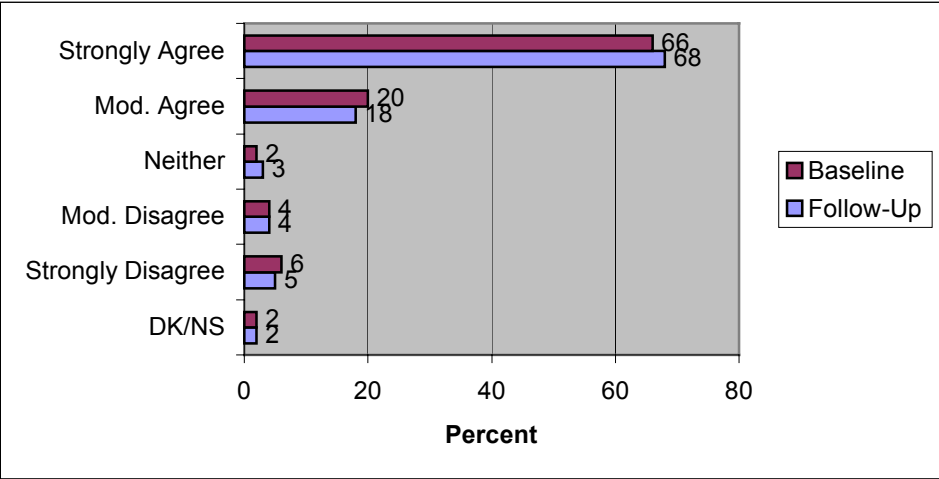


Figure 25. Residents and visitors to the North Cascades can prevent almost all problems with grizzly bears by taking a few precautions such as keeping a clean campsite and avoiding areas with heavy bear activity. Do you agree or disagree with this statement?

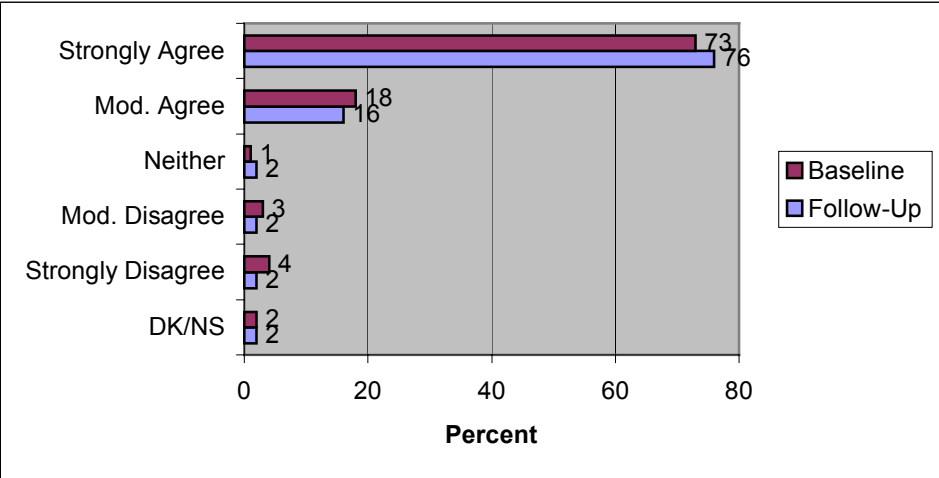


Figure 26. I would derive satisfaction from just knowing that grizzly bears are present in the North Cascades Mountains. Do you agree or disagree with this statement?

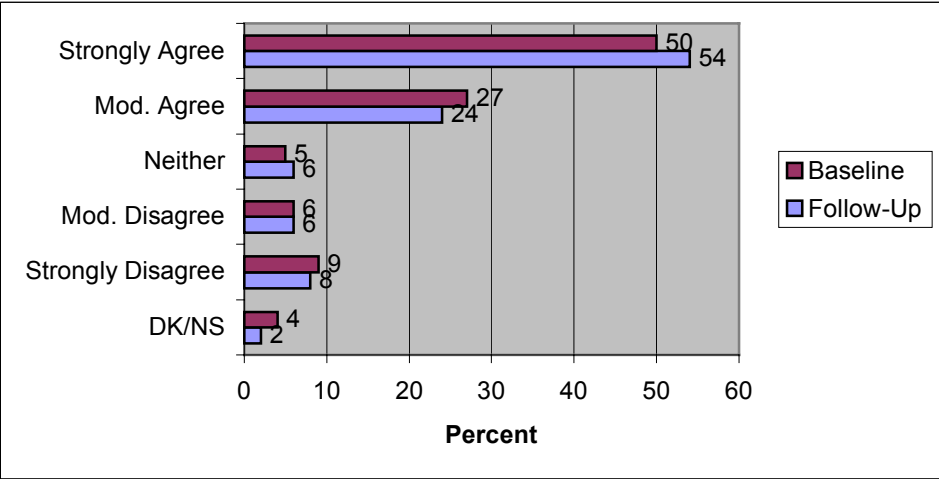


Figure 27. At this time, it has not been determined exactly how the grizzly bear population will be recovered in the North Cascades. In general, do you support or oppose grizzly bear recovery in the North Cascades Mountains?

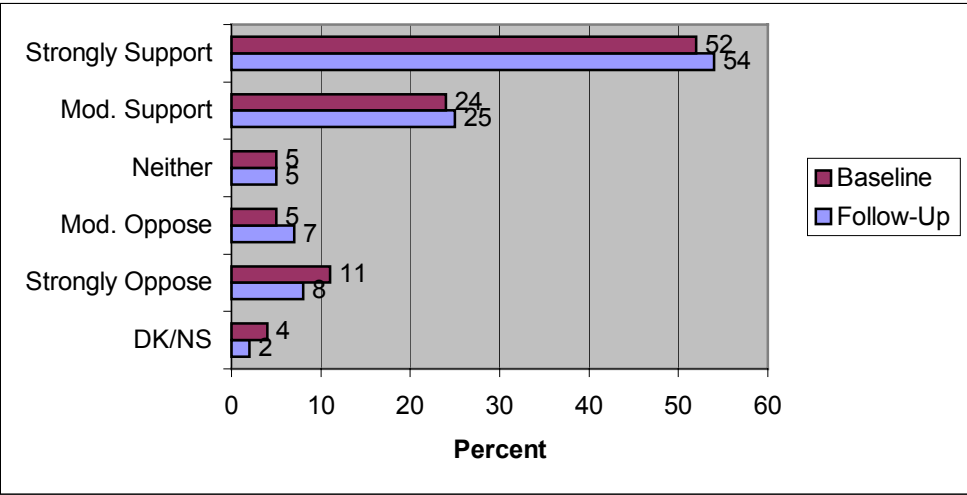


Figure 28. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if recovery required adding 5-10 bears into the North Cascades Mountains from another wild population in the US?

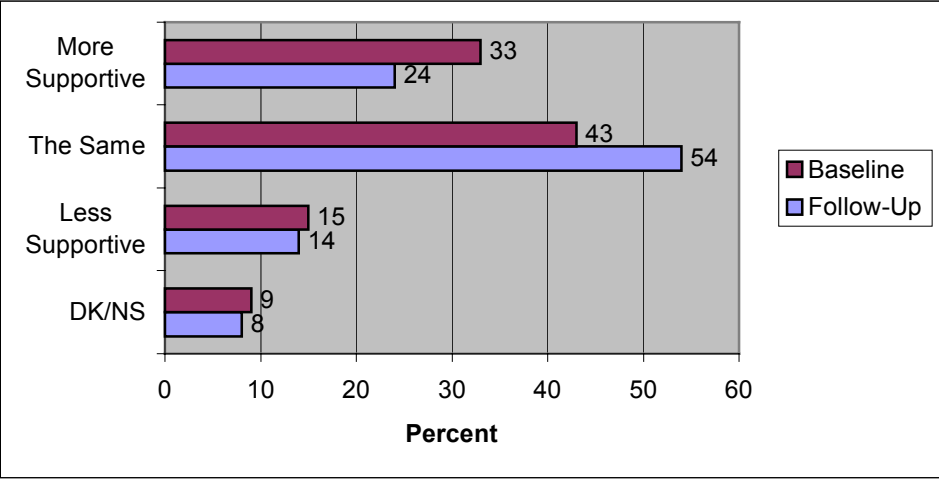


Figure 29. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if it could be done without adding bears into the North Cascades?

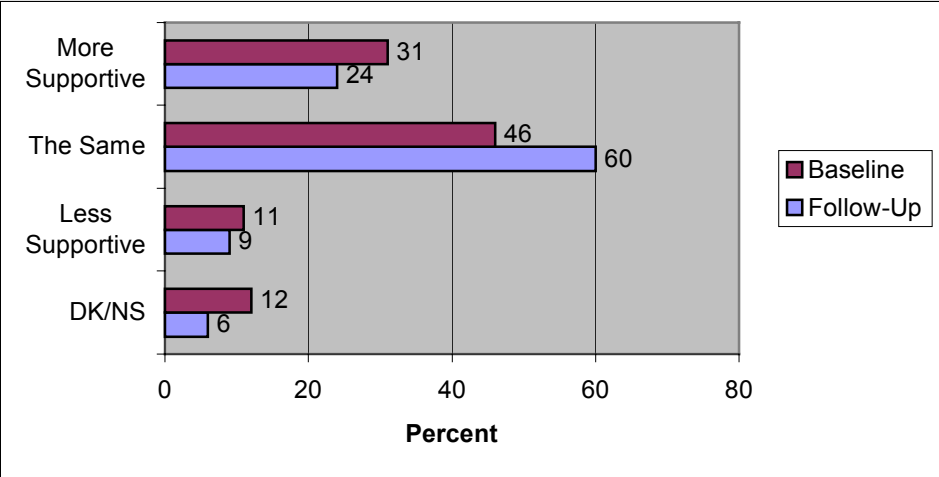


Table 30. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if some land use restrictions were required, such as closing some roads and trails at certain times of the year?

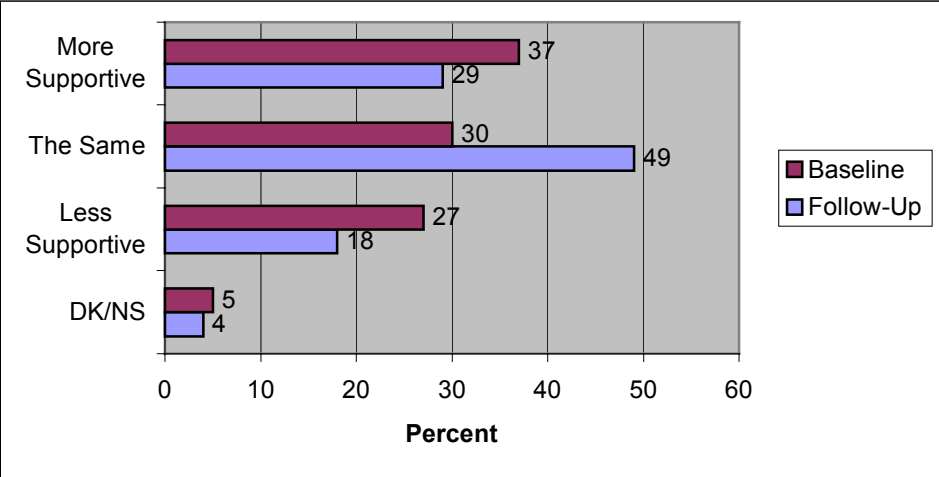


Table 31. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if stronger restrictions on garbage disposal methods were required to prevent problems with grizzly bears?

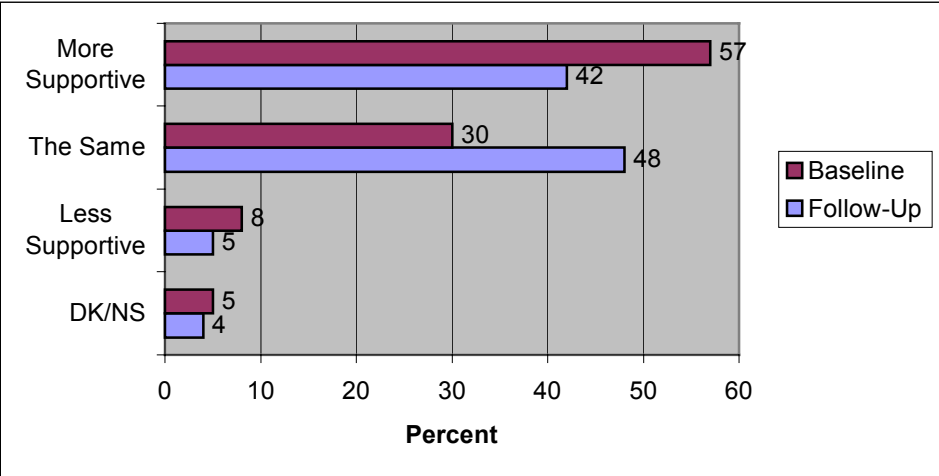


Table 32. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if funds were available to compensate ranchers for livestock losses that may occur from grizzly bears?

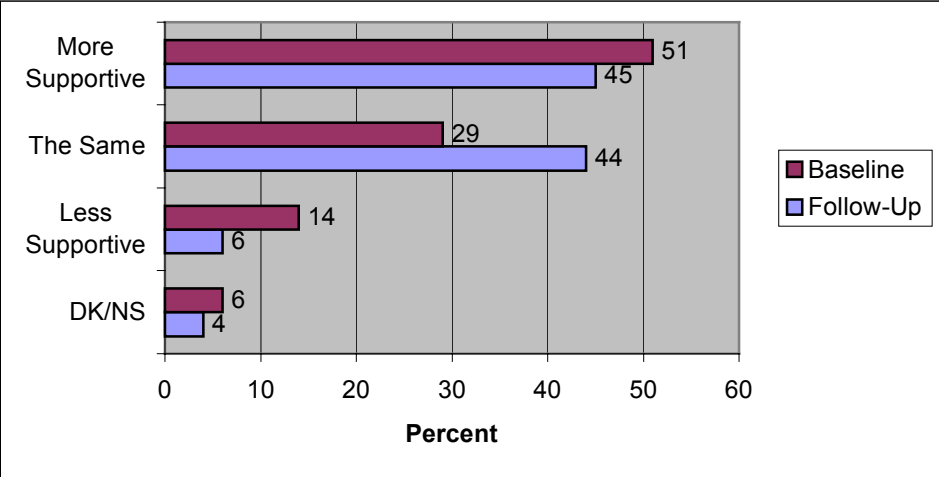


Table 33. Would your opinion of grizzly bear recovery be more supportive, the same, or less supportive if agency wildlife managers were able to meet more frequently with local residents to discuss grizzly bear recovery?

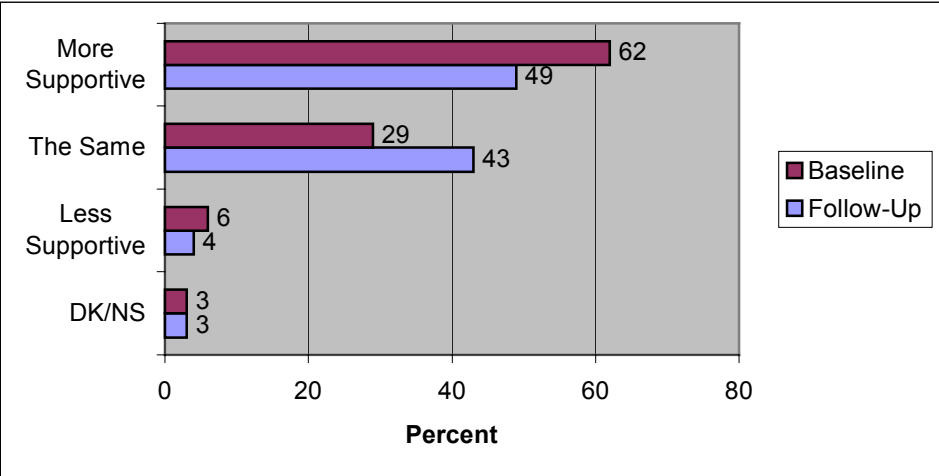


Table 34. Agency biologist provide the most accurate information available for understanding and managing the grizzly bear population in the North Cascades. Do you agree or disagree with this statement?

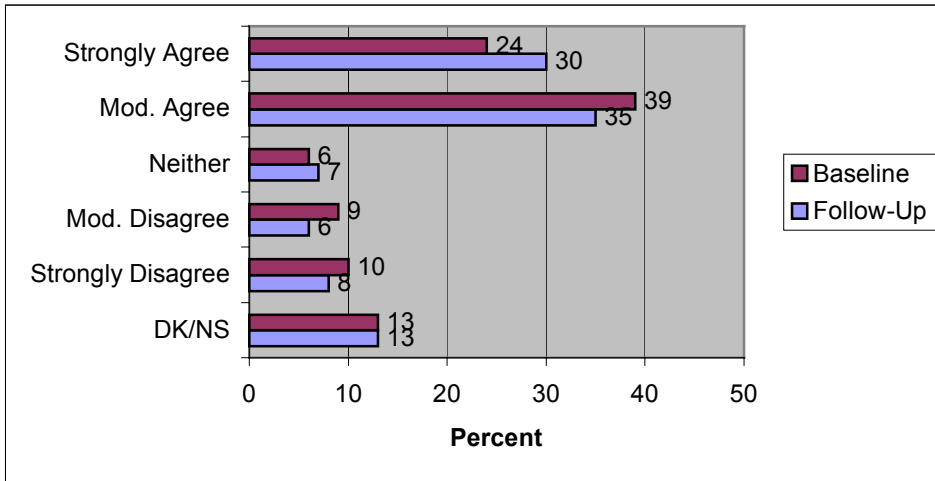


Table 35. Agency wildlife managers will involve local citizens in all major decisions about how grizzly bears will be recovered in the North Cascades Mountains. Do you agree or disagree with this statement?

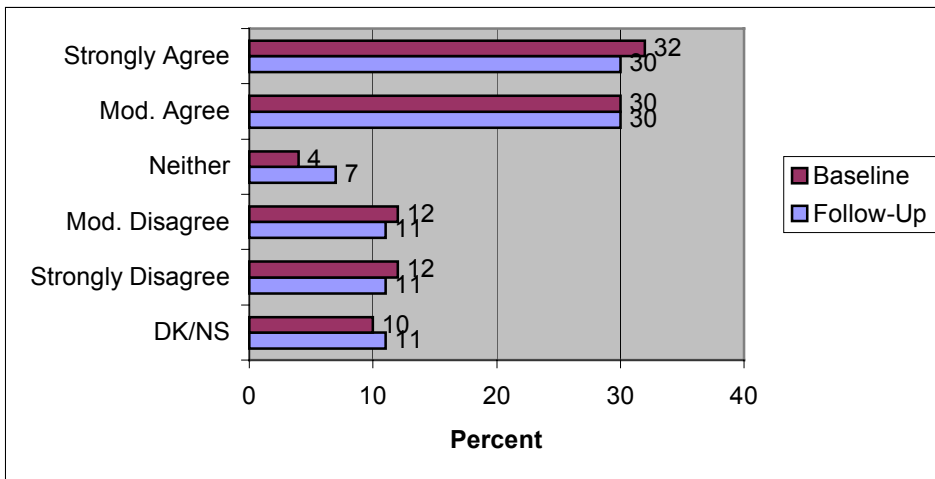


Table 36. Agency wildlife managers will pay attention to local citizen concerns about grizzly bear recovery in the North Cascades Mountains. Do you agree or disagree with this statement?

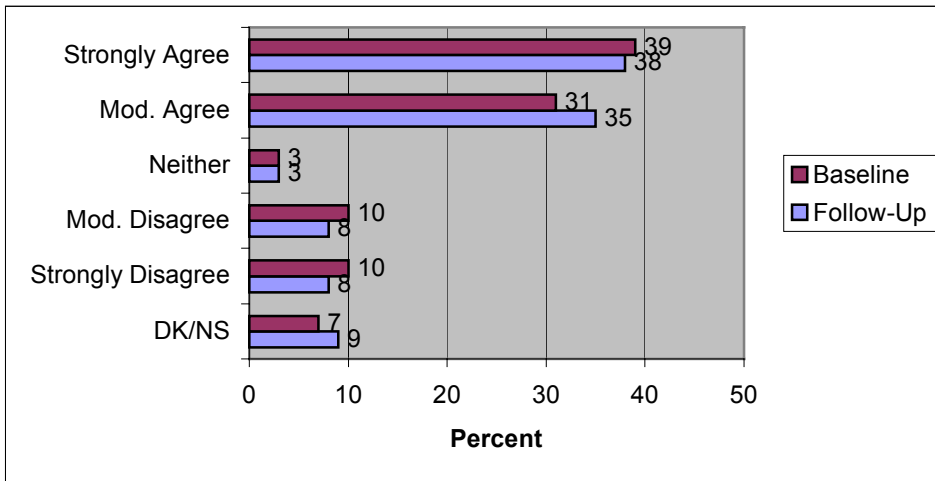


Figure 37. Agency wildlife managers will promptly remove any grizzly bears that linger in areas of high human use, act aggressively toward humans, or kill livestock. Do you agree or disagree with this statement?

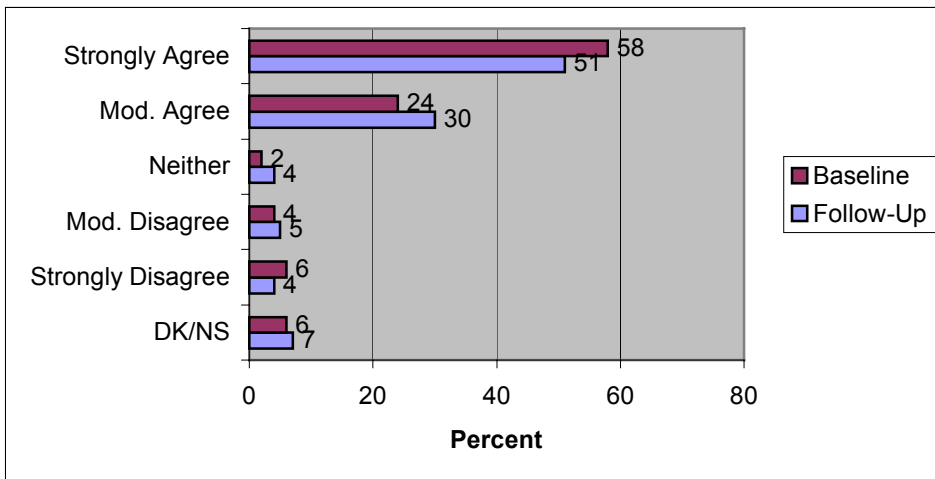


Figure 38. Local citizens in and near the North Cascades will be willing to work with wildlife management agencies to determine the best way to recover grizzly bears in the North Cascades Mountains. Do you agree or disagree with this statement?

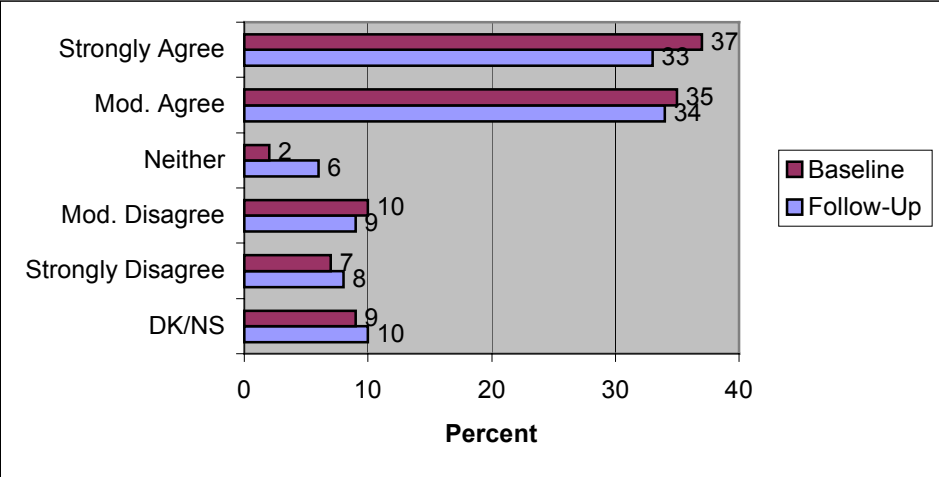


Figure 39. Gender

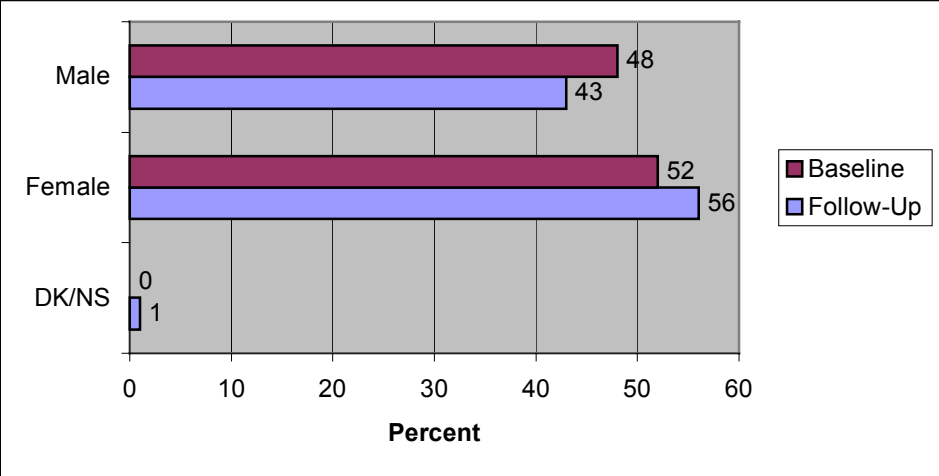


Figure 40. County

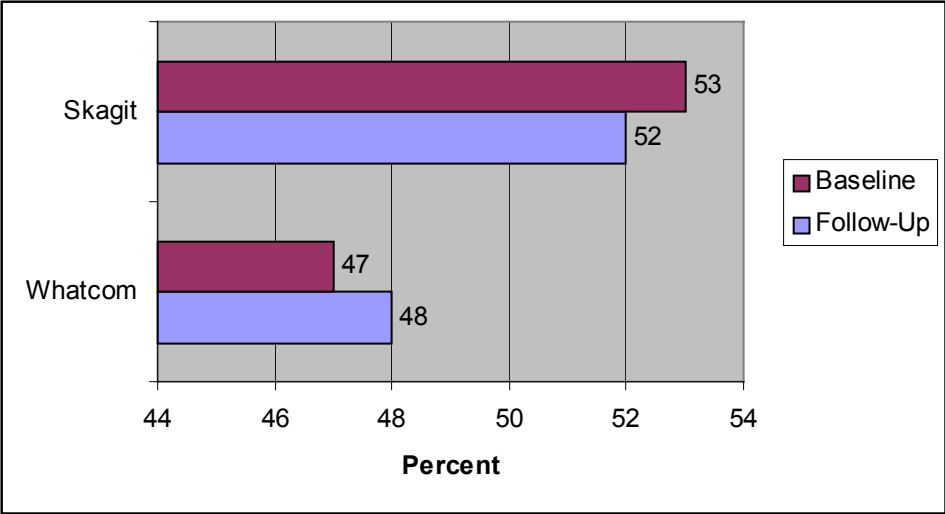


Figure 41. Age

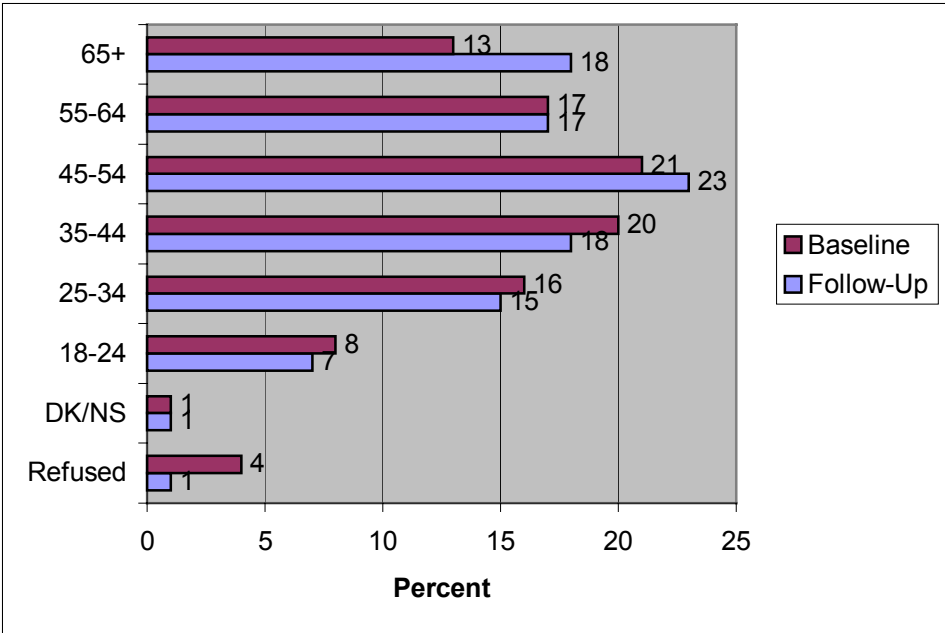


Figure 42. Education

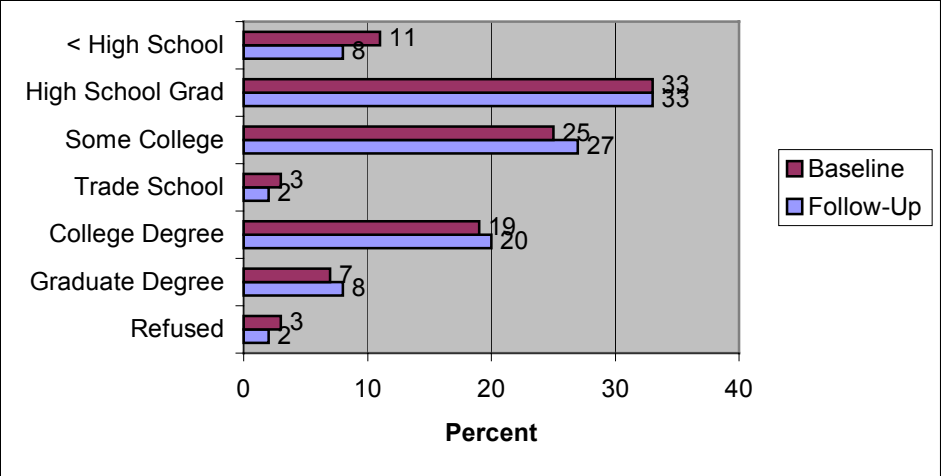


Figure 43. Has your family’s income been dependent on the forest or a forestry related industry at any time in the past five years?

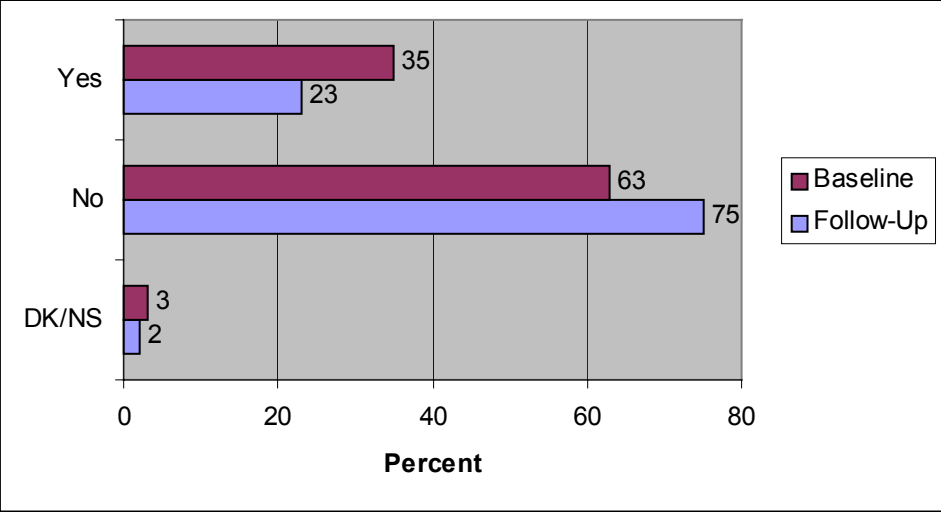
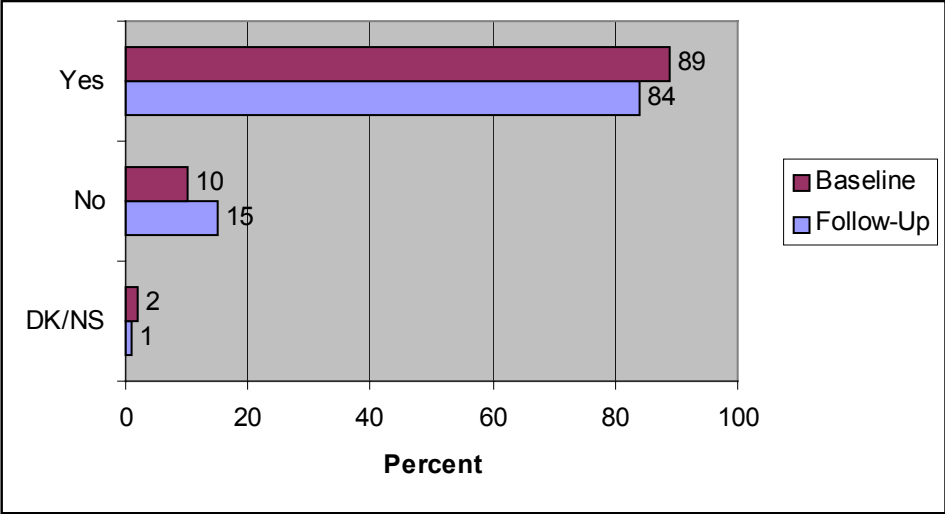


Figure 44. Have you camped, hunted, fished, or participated in any other outdoor recreation activities in Washington’s North Cascades Mountains?



Appendix 3.

Grizzly Bear Outreach Project Evaluation

Media Content Analysis

(Media Sources)

Source Mt. Baker Chamber Newslette

Date Story
none

Source: Mt. Baker Hiking Club

www.mountbakerclub.org

Date Story
none

Source: North Cascades Audubon

www.northcascadesaudubon.org

Date Story
1/04 GBOP article written by Chris Morgan
Oct. 2004 Hiking trip encounter with grizzly bear

Source: North Cascades Chamber

Date Story
4-Jan GBOP article written by Chris Morgan

Source: NWEA

www.ecosystem.org

Date Story
10/28/2003 Delisting of grizzlies sought in Yellowstone
10/28/2003 Canadian government progress in grizzly bear
3-Dec GBOP
Apr. 04 GBOP survey results
Jul. 04 NWEA law suit on grizzly bear EIS and critical
Nov. 04 Call to action to protect glaciers and grizzlies in
Mar. 05 British Columbia resort and grizzly bears

Source: Sedro Woolley Courier Times

Date Story
1/14/2004 Grizzly bear recovery and GBOP
2/9/2005 Bear Smart Assessment and bear safety

Source: Skagit Alpine Club

www.skagitalpineclub.com

Date Story
4/16/2004 GBOP presentation by Chris Morgan (webpage)
5/15/2004 GBOP presentation by Chris Morgan (newsletter)

Source: Skagit County Commission

www.skagitcounty.net

Date Story
none

Source: Skagit Land Trust

www.skagitlandtrust.org

Date Story
none

Source: Skagit Valley Herald www.skagitvalleyherald.com

<u>Date</u>	<u>Story</u>	
9/20/2004	Baby bear encounter	*****
10/7/2004	Bear encounter while hiking	*****
10/11/2004	Drunken bear	*****
10/15/2004	Problem bear shot in Centralia	*****
2/3/2005	Bear Smart Assessment	

Source: Whatcom County Conservation District

<u>Date</u>	<u>Story</u>	www.whatcomcd.org
	none	

Source: Whatcom County Council www.co.whatcom.wa.us/council/meetings

<u>Date</u>	<u>Story</u>
	none

Source: Whatcom County Natural Resources Committee

<u>Date</u>	<u>Story</u>	www.co.whatcom.wa.us/council/meetings
9/28/2004	Notes on GBOP presentation by Nan Laney	

Source Whatcom Independent www.whatcomindy.com/archives.html

<u>Date</u>	<u>Story</u>	
4/29/2004	Grizzly bear recovery in the North Cascades	
4/29/2004	Grizzly bear extinction	*****
5/7/2004	NWEA law suit threat on grizzly bears	*****
7/16/2004	Bear shot at the Glen at Maple Falls	*****
7/23/2004	Follow-up article on bear shot at the Glen	*****
12/3/2004	Bear Smart Assessment project announcement	
1/28/2005	Bear Smart Assessment results	

Source: Whatcom Watch www.whatcomwatch.org

<u>Date</u>	<u>Story</u>	
10/28/2003	Grizzly bear sitting in Okanogan County confi	*****
3-Sep	Grizzly shot on Vancouver Island	*****
4-Feb	Swift Creek trail advocates undeterred	*****
12/20/2004	GBOP	
15-Feb	Bear Smart Education program	

Appendix 4.

Grizzly Bear Outreach Project Evaluation

Media Content Analysis

(Concepts and Categories)

Safety

- Grizzly bears are dangerous
- Grizzly bears attack humans
- Grizzly bears kill humans
- Grizzly bears injure humans
- Problem grizzly bears will be controlled
- Grizzly bear problems are preventable

Losses (economic and other)

- Grizzly bears cause agricultural losses
- Grizzly bears kill pets
- Grizzly bears damage campsite equipment
- Grizzly bears scare away tourists
- Grizzly bear recovery limits access to favorite place

Government Control

- Grizzly bear recovery limits forest access
- Grizzly bears lead to excessive regulation
- Agencies provide misleading information on grizzly bears
- Agencies ignore citizens concerns about grizzly bears
- Government is too slow to act
- Government imposes grizzly bears on local citizens
- Government ignores grizzly bears

Biocentric Value

- Grizzly bears are essential to ecosystem
- Grizzly bear habitat destroyed
- Grizzly bear extinction
- Grizzly bear inherent right to exist

Personal Value

- Existence value
- Wildlife viewing
- Bears killed by humans

Social Value

- National heritage
- Future generations