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## Public Views on Wyoming Hazards and Hazard Mitigation Survey, 2010

WYSAC Technical Report No. SRC-1016

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# Public Views on Wyoming Hazards and Hazard Mitigation Survey, 2010

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# Public Views on Wyoming Hazards and Hazard Mitigation Survey, 2010

## 1. Executive Summary

In spring 2010 the Wyoming Office of Homeland Security (WOHS) and the Wyoming Survey & Analysis Center (WYSAC) contracted to assess public knowledge and views about a variety of hazards and the need for hazard mitigation at the state and community levels. WYSAC fielded a statewide mail survey on a representative sample of all Wyoming households from April to June 2010. This effort yielded 621 completed surveys. The information gathered is intended to guide the WOHS in their hazard planning and policy processes.

### *Threat of specific hazards*

- Wyoming residents think that the three specific hazards of *severe winter weather*, *wildfire*, and *drought* are of medium to high threat to the state within the next five years.

### *Personal impact of specific hazards*

- The hazards of *severe winter weather*, *drought*, and *wildfire* cause residents the most concern with regard to these hazards' potential to harm them, their families, or their property.

### *Need for mitigation of specific hazards*

- Residents cited *volcano*, *hazardous materials accident/spill*, and *flood* as the three specific hazards most in need of mitigation in Wyoming over the next five years.

### *Other findings*

- Nearly half of Wyoming residents claim to have personally experienced *wildfire* in Wyoming, while clear majorities have personally experienced *severe winter weather*, *severe non-winter weather*, and *drought* within the state.
- Over half of Wyoming households have an *Emergency Kit* (defined in the questionnaire as *extra food, water, batteries, or other emergency supplies*), while only around a third of Wyoming households have a hazard plan for any specific hazard.

## 2. Introduction

### 2.1. Background

In spring 2010 the Wyoming Office of Homeland Security (WOHS) engaged the Wyoming Survey & Analysis Center (WYSAC) to assess Wyoming residents' knowledge and views about non-terrorism-related natural and man-made hazards. This included the perceived level of threat of specific hazards, the public's level of concern about them, and the perceived need for hazard mitigation in the state and in local communities. WYSAC fielded a statewide mail survey on a representative sample of all Wyoming households from April to June 2010, which yielded a total of 621 completed surveys. The information gathered is intended to guide the WOHS in their hazard planning and policy processes.

### 2.2. Organization of this Report

This report is organized as follows. The *Executive Summary* (section 1) highlights the most important findings of this study. The *Methods* section (section 3) discusses questionnaire development, the pool of respondents, how the survey was administered, response rates and margin of error, and data analysis. The *Key Findings* section (section 4) discusses the major findings of the survey organized in several general groups of interest and illustrates this discussion with charts and graphs. The *Complete Survey Results* (section 5) present the raw frequency counts and percentage distributions of responses to all items on the survey; these are presented verbatim from the questionnaire and in the order used on the survey. The *References* (section 6) contain references used within this report, and responses to open-ended questions and the actual survey questionnaire are presented in *Appendices: Responses to open-ended questions and survey instrument* (section 7).

## 3. Methods

### 3.1. Questionnaire Development

The questionnaire for this project (see Appendix E) was collaboratively developed by WYSAC and the WOHS. Several survey instruments from other states were researched and used to inform this survey's content (see *References*, section 6). The questionnaire was formatted into a scannable instrument using Teleform<sup>®</sup> software after final approval by the WOHS. Using scannable forms eliminates manual data entry error and reduces overall data entry error.

### 3.2. Sampling Frame, Sample Size and Margins of Error

The sampling frame for this survey consisted of all Wyoming households with mailable addresses. A probability sample of 2,500 households—large enough to secure not less than 500 completed surveys—was purchased from the Marketing Systems Group (Genesys), one of the leading national vendors specializing in the generation of scientific samples. The initial sample of 2,500 records allowed for attrition due to mail returned as undeliverable for various reasons. Random samples of 500 yield a margin of error of about +/- 4.5 percentage points with 95% confidence.

### 3.3. Survey Administration

The survey was administered from April to June, 2010, as a mail survey using Dillman's tailored design method (Dillman, 2007). A pre-survey notice post card was sent to all 2,500 addresses on the initial list on April 12, 2010. A few days later the questionnaire, accompanied by a cover letter authored by the WOHS and on WOHS letterhead, was sent to all initial 2,500 potential contacts. This mailing included a postage-paid return envelope and a bookmark containing information about the WOHS. The cover letter explained the purpose of the survey and encouraged participation. On May 3 a reminder post card was sent to all households from which a completed questionnaire had

not yet been received or from which the first two mailings were returned as undeliverable. The fourth and final mailing was sent on May 14 to all households from which completed surveys had not yet been received and for which the first three mailings had not been returned as undeliverable. This final mailing contained a replacement questionnaire, a reminder letter authored by WYSAC to encourage participation, and a postage-paid return envelope.

### 3.4. Response Rate and Margin of Error

Of the initial sample of 2,500 Wyoming households, 414 were revealed to be undeliverable or otherwise invalid during the mailing sequence, while two households explicitly refused to participate; this reduced the number of potentially valid addresses to 2,086. We had received 621 completed survey questionnaires by June 3, the closing date of the data collection period. This provides a response rate of 30%. The sample size fixes the margin of error for the survey results at about +/- 4 percentage points with 95% confidence. The final number of completed surveys and, consequently, the margin of error, exceeded the goals set forth for this effort.

### 3.5. Data Compilation and Analysis

Once the data collection effort was closed on June 3, all questionnaires were scanned using WYSAC's high volume Panasonic scanners. Questionnaire responses were visually verified when appropriate. In each case that the scanner software indicated a potential scanning problem, the issue was resolved by manual inspection of the physical paper questionnaire. The resulting consolidated data file was then exported into the statistical software SPSS for analysis. Data were checked for logical errors and outliers, and the cleaned data file was properly labeled and prepared for analysis. A few variables were recoded for ease of interpretation of the results and graphical presentation.

The full results of the survey are presented in *Complete Survey Results* (section 5), where the raw frequency counts and percentage distributions of responses to all items on the survey are presented in easily-read tables as they were presented on the questionnaire. Responses to open-ended questions were minimally edited for typographical and grammatical errors, and are presented in appendices *A* through *D* of this report. In addition, the *Key Findings* (section 4) contain a discussion of the results of the survey grouped into categories of interest and presented in graphs and charts.

## 4. Key Findings

### 4.1. Demographic Characteristics

Table 4.1. below presents a comparison of our statewide sample to the population of Wyoming as a whole, using the demographic characteristics collected in the survey. As seen, the sex distribution of the respondents to the survey represents equally well the male (47%) and the female (53%) population of the state.

The educational distribution of our sample is notably biased toward the more highly educated public. The less educated public tends to be less responsive to surveys and mail surveys, in particular.

The age composition of the responders to this survey is significantly biased toward the older generations. The explanation for this is that younger people tend to be much less responsive to surveys.

**Table 4.1. Comparison of Wyoming Population Estimates to Statewide Survey Sample on Selected Demographics**

Demographic	2008 statewide estimates*	Statewide survey sample
<b>Sex</b>		
Male	50.6%	47.0%
Female	49.4%	53.0%
<b>Education</b>		
Less than high school	8.3%	2.8%
High school graduate or GED	30.6%	19.1%
Some college or technical school	37.5%	38.7%
Undergraduate degree	15.7%	23.9%
Graduate degree	7.9%	15.3%
<b>Age</b>		
18-24 years	13.7%	2.8%
25-34 years	17.9%	10.5%
35-44 years	15.8%	11.1%
45-54 years	20.4%	21.7%
55-64 years	15.9%	25.0%
65 years and older	16.3%	28.9%

\*Source: US Census Bureau, 2009

Our sample represents very well the population of those who have lived in the state for over 20 years: 71% of all respondents (See Table 5.55., section 5). This outcome may be correlated with the fact that the younger generations are underrepresented in the sample.

Our sample represents fairly well households with children 17 and younger living with them: 25% of all respondents (See Table 5.53., section 5).

## 4.2. Summary of survey results

This section displays the summative survey results for certain non-demographic items. Many of the survey results presented in this section are for questionnaire items that employ hierarchical scales, in reference to specific hazards, as answer choices; these scales allow the calculation of means. Each of the figures in this section presents the mean score, based on the response choice scale, obtained for the specific hazards in the questionnaire. The hazards presented for relevant survey items include:

- **Flood**
- **Dam failure**
- **Drought**
- **Hazardous materials accident/spill** (*HazMat* in report tables and figures)
- **Landslide**
- **Snow avalanche**
- **Meteor impact**
- **Earthquake**
- **Mine subsidence**
- **Tornado**
- **Severe non-winter weather**
- **Severe winter weather**
- **Volcano**
- **Water contamination**
- **Wildfire**

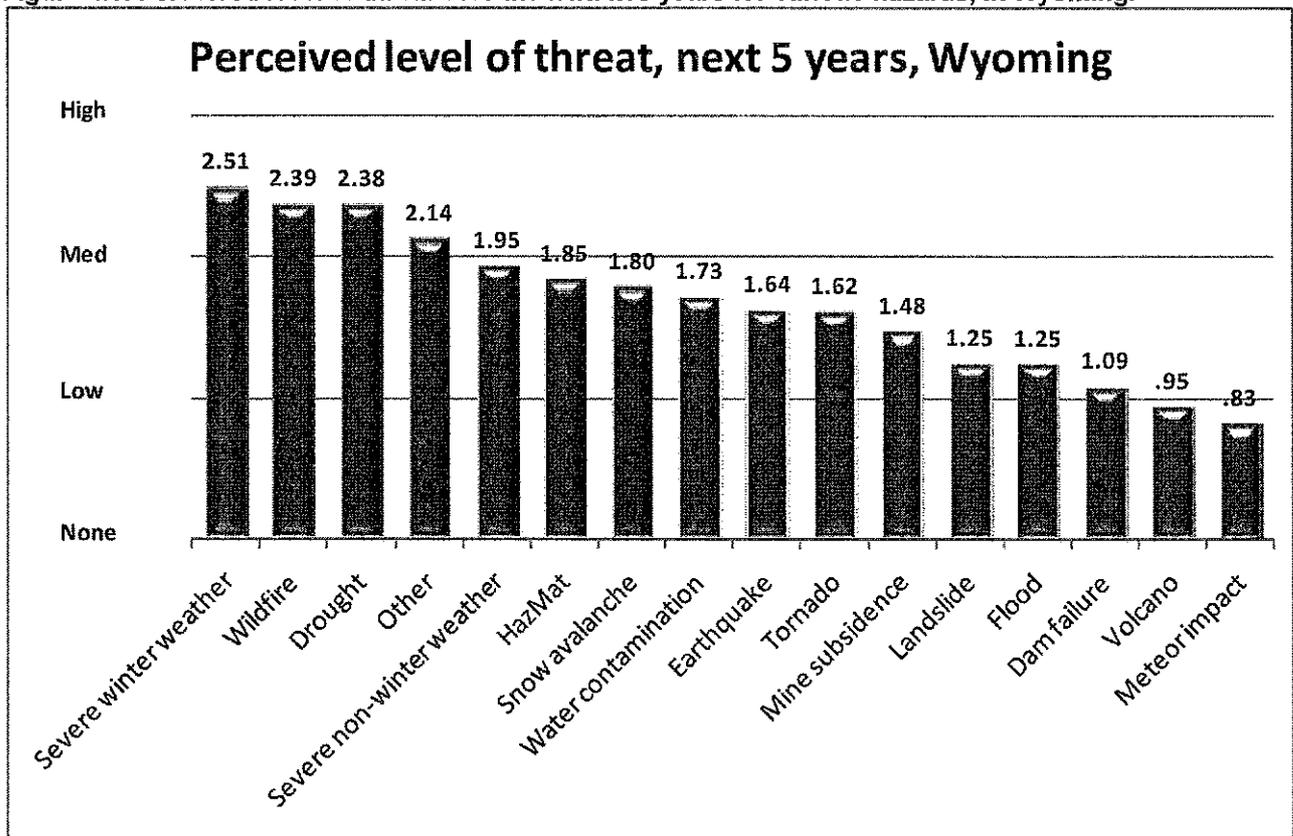
Survey items that made use of this list of hazards also allowed respondents to choose *other*, after which they had the opportunity to write in a hazard (or hazards) not contained in the list. These written responses are contained in report appendices A through D.

### 4.2.1. Perceived Level of Threat for Specific Hazards: Wyoming; Community and Surrounding Area

For the following two figures, means for perceived level of threat are calculated from a four point scale where the questionnaire answer choice of *None* is equal to 0, *Low* is equal to 1, *Medium* is equal to 2, and *High* is equal to 3.

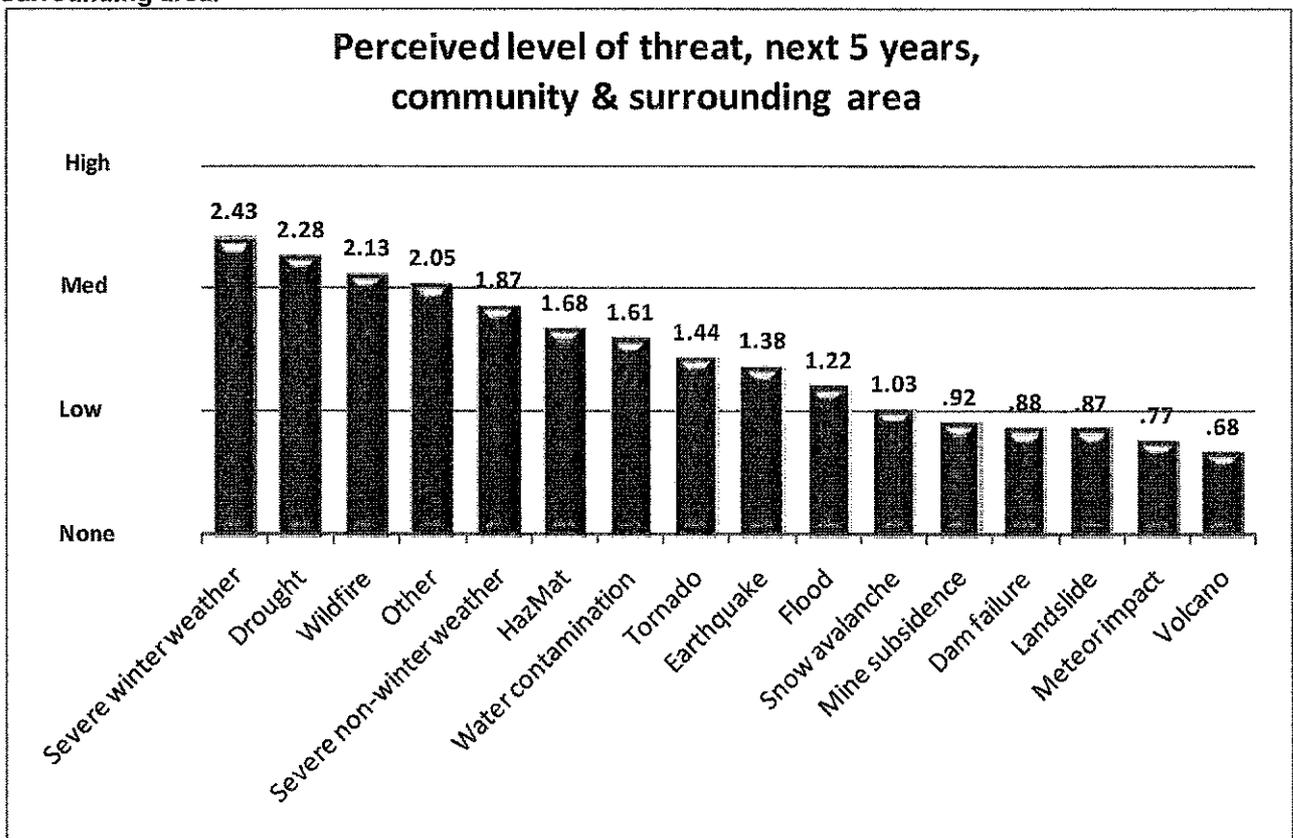
Of the many hazards named in the questionnaire, three specific hazards—*severe winter weather*, *wildfire*, and *drought*—are thought by Wyoming residents to be of medium to high threat to Wyoming, in general, within the next five years (survey Question 1). Of these, the first and highest ranked, *severe winter weather* (with a mean of 2.51 out of 3), is perhaps no surprise. Neither, necessarily, is third-ranked *drought* (2.38), as Wyoming has experienced moderate or severe drought for the majority of years within the past decade (Water Resources Data System, 2008). Based on the citation of *drought* as a high concern and that many of the open-ended *other* responses refer to bark beetle infestation (see appendices A-D), it is possible that this combination may in part explain why *wildfire* (2.39) is the second highest-ranked statewide threat by residents within the next five years. Other hazards for which the perceived threat statewide is above the midpoint of 1.5 include *other* (2.14; see Appendix A for these entries), *severe non-winter weather* (1.95), *hazardous materials accident/spill* (1.85), *snow avalanche* (1.8), *water contamination* (1.73), *earthquake* (1.64), and *tornado* (1.62) (Figure 4.1., next page).

Figure 4.1. Perceived level of threat over the next five years for various hazards, in Wyoming.



When residents consider the *local* threat of hazards (specifically, for their *community and surrounding area*) as opposed to Wyoming in general, we see—not surprisingly—a great deal of similarity between them, though the means are uniformly lower. As with the perceived threats for Wyoming in general, the three highest ranked threats are identical, though in a different order. When addressing the local threat of hazard, residents again place *severe winter weather* (2.43) first, followed by *drought* (2.28), and then by *wildfire* (2.13). Other hazards for which the perceived local threat is above the midpoint of 1.5 include *other* (2.05; see Appendix A), *severe non-winter weather* (1.87), *hazardous materials accident/spill* (1.68), and *water contamination* (1.61) (Figure 4.2).

**Figure 4.2. Perceived level of threat over the next five years for various hazards, in community and surrounding area.**

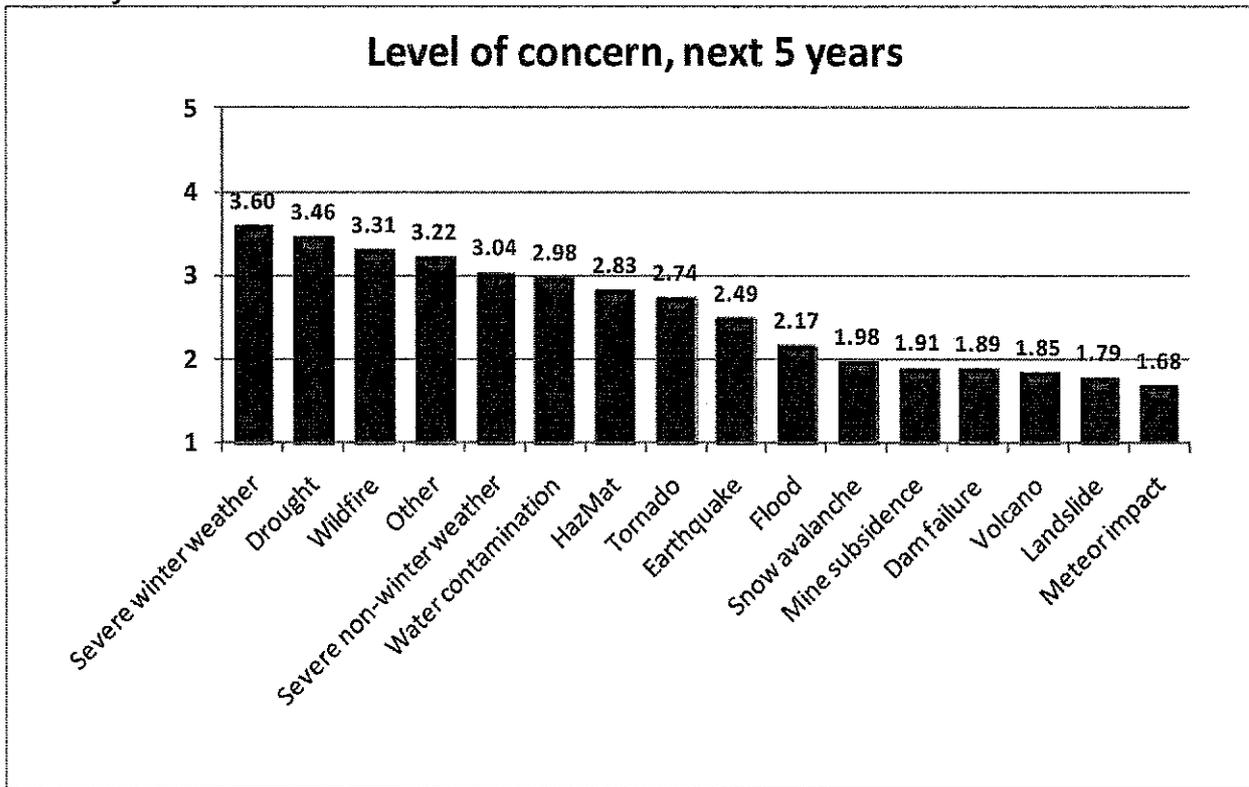


**4.2.2. Level of Concern about Specific Hazards, Next Five Years**

For the following figure, means are calculated from a five point scale using the actual questionnaire response choices of 1 (*Not at all concerned*) through 5 (*Very concerned*).

Residents rated how concerned they are that, within the next five years, specific hazards will harm them, their families, or their property (Question 2). As might be expected, the same top three hazards identified as *of concern* are also the top three hazards *of threat* identified for Question 1. These are, in descending order, *severe winter weather* (with a mean of 3.6 out of 5), *drought* (3.46), and *wildfire* (3.31). It is important to note that no particular hazard has a mean score indicating severe concern. Other hazards for which residents' level of concern is above the midpoint of 2.5 include *other* (3.22; see Appendix B), *severe non-winter weather* (3.04), *water contamination* (2.98), *hazardous materials accident/spill* (2.83), and *tornado* (2.74); *earthquake* (Figure 4.3).

**Figure 4.3. Perceived level of concern of harm to respondent, their family, or property over the next five years for various hazards.**

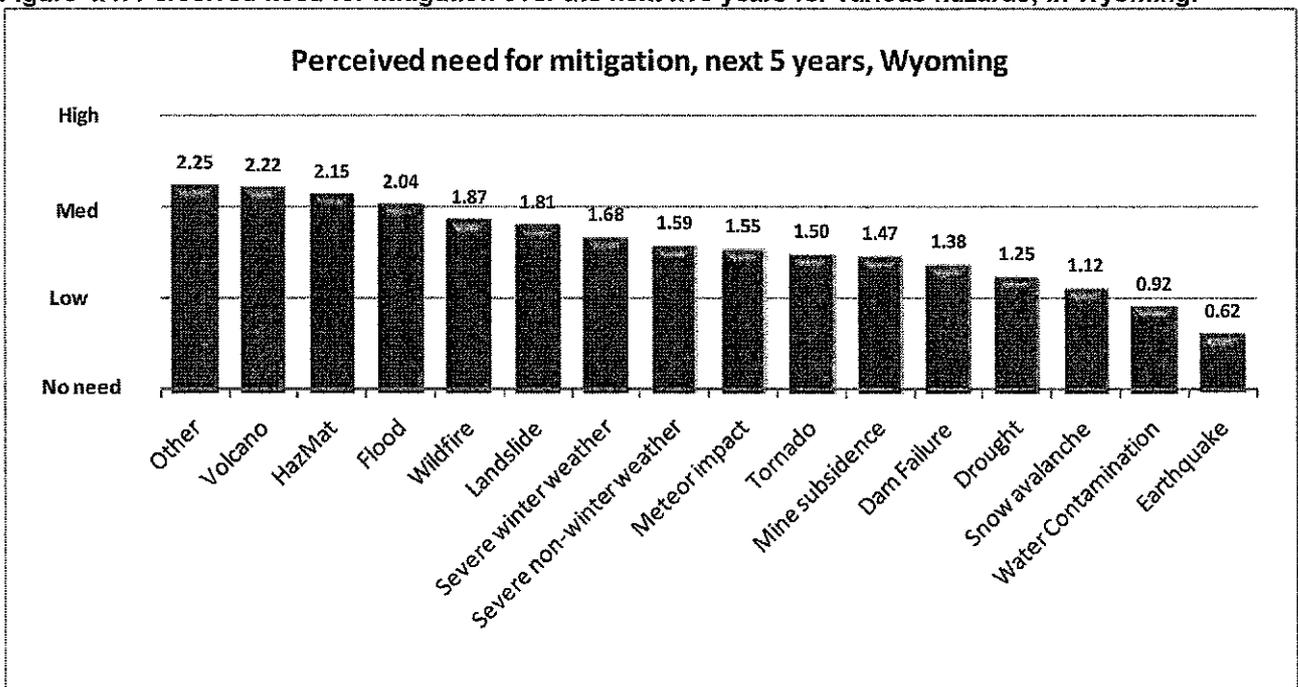


### 4.2.3. Perceived Need for Mitigation of Specific Hazards: Wyoming; Community and Surrounding Area

For the following two figures, means for perceived need of hazard mitigation are calculated from a four point scale, where the questionnaire answer choice of *No need* is equal to 0, *Low* is equal to 1, *Medium* is equal to 2, and *High* is equal to 3.

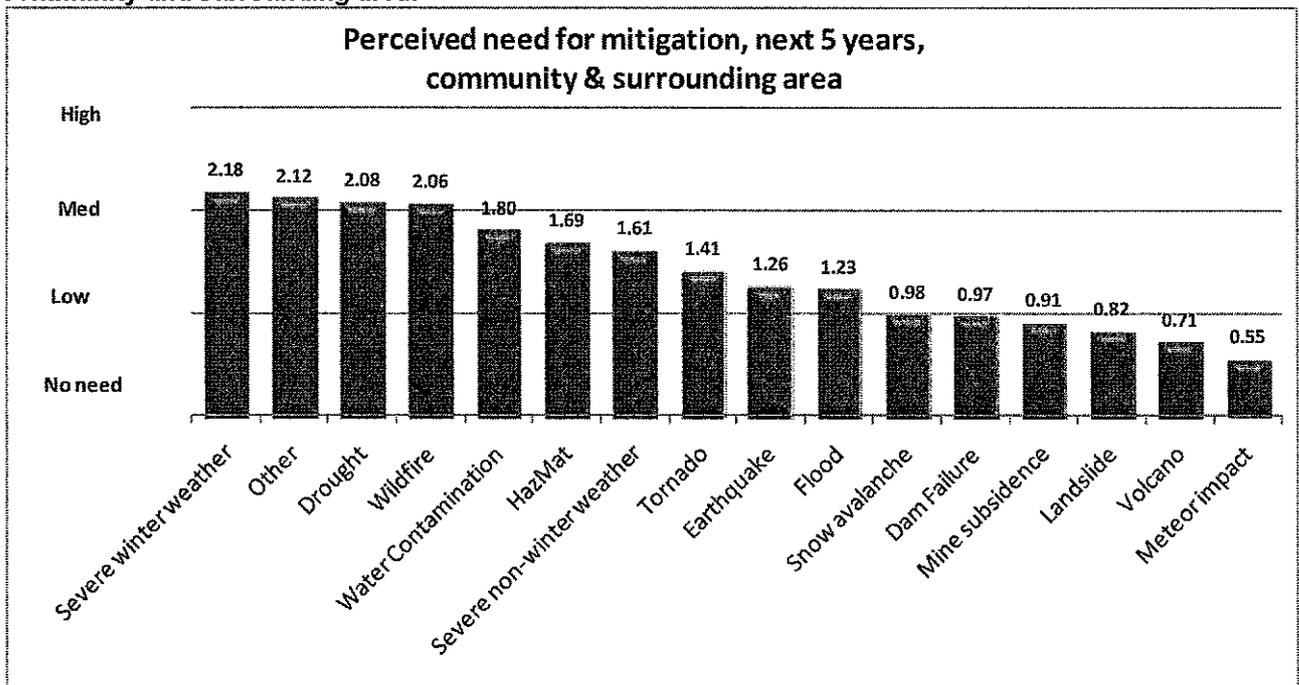
Residents were asked to rank hazards based on the perceived need of mitigation for each over the next five years (Question 4). As with perceived threat (Question 1), residents were asked to consider the hazards both at the state level and at the local level. Regarding the perceived need for hazard mitigation at the state level, *other* hazards obtained the highest mean (at 2.25 out of 3; see Appendix C). Of the named hazards, residents cited *volcano* (2.22), *hazardous materials accident/spill* (2.15), and *flood* (2.04) as the three hazards most in need of mitigation in Wyoming over the next five years. Other hazards for which the perceived need for mitigation is at or above the midpoint of 1.5 include *wildfire* (1.87), *landslide* (1.81), *severe winter weather* (1.68), *severe non-winter weather* (1.59), *meteor impact* (1.55), and *tornado* (1.50) (Figure 4.4.).

Figure 4.4. Perceived need for mitigation over the next five years for various hazards, in Wyoming.



Regarding the need for hazard mitigation within the next five years at the local level, *severe winter weather* ranked highest (2.18 out of 3); the next two named hazards are *drought* (2.08) and *wildfire* (2.06). *Other* hazards also rank high (2.12; see Appendix C). Other named hazards for which the perceived need for mitigation at the local level is above the midpoint of 1.5 include *water contamination* (1.80), *hazardous materials accident/spill* (1.69), and *severe non-winter weather* (1.61) (Figure 4.5).

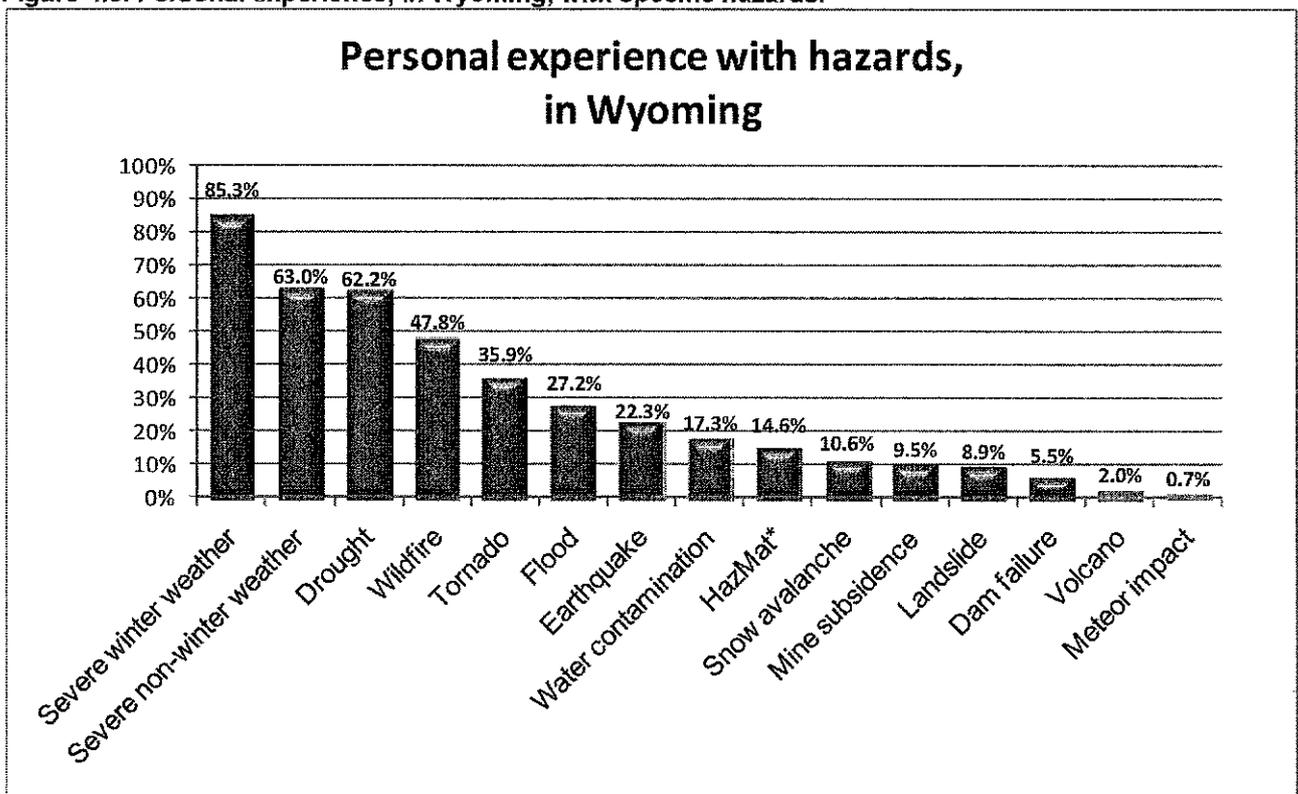
**Figure 4.5. Perceived need for mitigation over the next five years for various hazards, in community and surrounding area.**



#### 4.2.4. Personal Experience with Hazards

The following figure displays residents' personal experience with specific hazards within Wyoming. Not surprisingly, *severe winter weather* is the hazard with which the greatest percentage (85%) of Wyoming residents have had personal experience. The second- and third-most cited hazards are *severe non-winter weather* and *drought* (each a little higher than 60%), and nearly half (48%) of Wyoming residents have had personal experience with *wildfire* in Wyoming. Over a third (36%) of residents have had personal experience with *tornado*, while just over a quarter (27%) have had experience with *flood* (Figure 4.6).

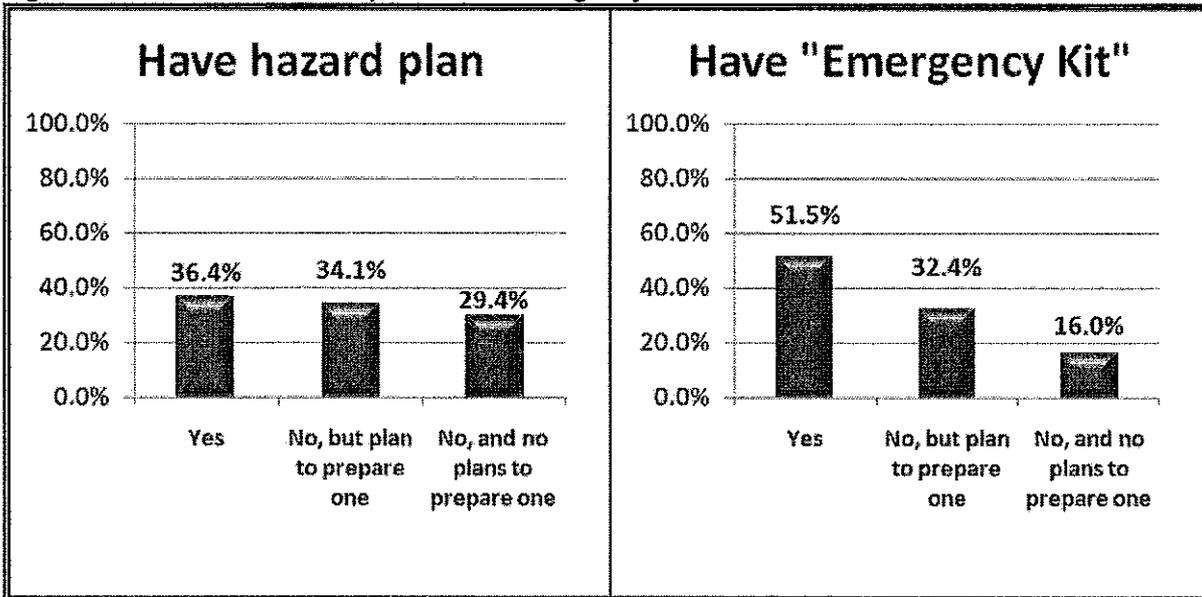
Figure 4.6. Personal experience, in Wyoming, with specific hazards.



4.2.5. Preparedness

Over one third of households report to have a plan on how to handle any of the named hazards. Another third report planning to prepare one, and under one third appear to have no such plans (Figure 4.7.).

Figure 4.7. Household hazard plans and "Emergency Kits."



With regard to "Emergency Supply Kit" the Wyoming households' preparedness appears to be better, with over half of the households reporting to have one and one third reporting to plan to prepare one (Figure 4.7.).

## 5. Complete Survey Results

In this section the results of the survey are presented in full detail. Presented in tables are the raw frequency counts and percentage distributions of responses to all questions on the survey as they were asked on the questionnaire. Summarized results, presented as means or valid percentages, are displayed in the histograms accompanying the tables.

### Q1. Think about the next FIVE years. How serious a threat do you think are the following hazards for Wyoming overall, and specifically for your community and surrounding area?

Wyoming residents perceive the threat of *flood* over the next five years to be rather low, both locally and at the state level (Table 5.1.).

**Table 5.1. Perceived threat level of *flood*, “in Wyoming,” and “in community and surrounding area.”**

<i>Flood</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	22	3.8	29	4.9	
Medium	155	26.7	144	24.4	
Low	349	60.2	341	57.9	
None	54	9.3	75	12.7	
Total Valid	580	100.0	589	100.0	
Not Sure	30		14		
(No answer)	11		18		
Total	621		621		

Wyoming residents perceive the threat of *dam failure* over the next five years to be low, though slightly higher at the state level than locally (Table 5.2.).

**Table 5.2. Perceived threat level of *dam failure*, “in Wyoming,” and “in community and surrounding area.”**

<i>Dam failure</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	14	2.6	19	3.4	
Medium	119	21.7	81	14.5	
Low	320	58.4	273	48.8	
None	95	17.3	187	33.4	
Total Valid	548	100.0	560	100.0	
Not Sure	58		39		
(No answer)	15		22		
Total	621		621		

Wyoming residents perceive the threat of *drought* over the next five years to be from medium to high (Table 5.3).

**Table 5.3. Perceived threat level of *drought*, “in Wyoming,” and “in community and surrounding area.”**

<i>Drought</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	302	50.6	262	44.8	
Medium	229	38.4	233	39.8	
Low	59	9.9	79	13.5	
None	7	1.2	11	1.9	
Total Valid	597	100.0	585	100.0	
Not Sure	8		9		
(No answer)	16		27		
Total	621		621		

Wyoming residents perceive the threat of a *hazardous materials accident/spill* over the next five years to be between low and medium, and only higher at the state level than locally (Table 5.4).

**Table 5.4. Perceived threat level of *HazMat*, “in Wyoming,” and “in community and surrounding area.”**

<i>HazMat*</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	133	23.2	110	19.4	
Medium	237	41.4	203	35.7	
Low	187	32.6	218	38.4	
None	16	2.8	37	6.5	
Total Valid	573	100.0	568	100.0	
Not Sure	40		34		
(No answer)	8		19		
Total	621		621		

\*Hazardous materials accident/spill

Wyoming residents perceive the threat of *landslide* over the next five years to be fairly low, and slightly higher at the state level than locally (Table 5.5).

**Table 5.5. Perceived threat level of *landslide*, “in Wyoming,” and “in community and surrounding area.”**

<i>Landslide</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	31	5.4	27	4.6	
Medium	168	29.2	70	12.0	
Low	291	50.6	283	48.7	
None	85	14.8	201	34.6	
Total Valid	575	100.0	581	100.0	
Not Sure	32		18		
(No answer)	14		22		
Total	621		621		

Wyoming residents perceive the threat of *snow avalanche* over the next five years to be between low and medium, and substantially higher at the state level than locally (Table 5.6).

**Table 5.6. Perceived threat level of *snow avalanche*, “in Wyoming,” and “in community and surrounding area.”**

<i>Snow avalanche</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	149	25.1	65	11.2	
Medium	236	39.8	90	15.5	
Low	146	24.6	220	37.9	
None	62	10.5	205	35.3	
Total Valid	593	100.0	580	100.0	
Not Sure	18		16		
(No answer)	10		25		
Total	621		621		

Wyoming residents perceive the threat of *meteor impact* over the next five years to be low (Table 5.7).

**Table 5.7. Perceived threat level of *meteor impact*, “in Wyoming,” and “in community and surrounding area.”**

<i>Meteor impact</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	8	1.7	8	1.8	
Medium	42	9.1	37	8.1	
Low	273	59.3	254	55.6	
None	137	29.8	158	34.6	
Total Valid	460	100.0	457	100.0	
Not Sure	149		144		
(No answer)	12		20		
Total	621		621		

Wyoming residents perceive the threat of *earthquake* over the next five years to be between low and medium, and slightly higher at the state level than locally (Table 5.8).

**Table 5.8. Perceived threat level of *earthquake*, “in Wyoming,” and “in community and surrounding area.”**

<i>Earthquake</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	94	16.1	64	11.4	
Medium	231	39.6	162	28.9	
Low	212	36.3	256	45.6	
None	47	8.0	79	14.1	
Total Valid	584	100.0	561	100.0	
Not Sure	23		28		
(No answer)	14		32		
Total	621		621		

Wyoming residents perceive the threat of *mine subsidence* over the next five years to be low, locally, and between low and medium at the state level (Table 5.9.).

**Table 5.9. Perceived threat level of *mine subsidence*, “in Wyoming,” and “in community and surrounding area.”**

<i>Mine subsidence</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	80	14.5	51	9.2	
Medium	188	34.2	72	13.0	
Low	199	36.2	212	38.2	
None	83	15.1	220	39.6	
Total Valid	550	100.0	555	100.0	
Not Sure	59		47		
(No answer)	12		19		
Total	621		621		

Wyoming residents perceive the threat of *tornado* over the next five years to be between low and medium, an slightly higher at the state level (Table 5.10.).

**Table 5.10. Perceived threat level of *tornado*, “in Wyoming,” and “in community and surrounding area.”**

<i>Tornado</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	75	12.8	64	11.1	
Medium	245	42.0	188	32.6	
Low	232	39.7	265	45.9	
None	32	5.5	60	10.4	
Total Valid	584	100.0	577	100.0	
Not Sure	16		15		
(No answer)	21		29		
Total	621		621		

Wyoming residents perceive the threat of *severe non-winter weather* over the next five years to be around medium (Table 5.11).

**Table 5.11. Perceived threat level of severe non-winter weather, “in Wyoming,” and “in community and surrounding area.”**

<i>Severe non-winter weather</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	148	24.6	133	22.5	
Medium	286	47.6	265	44.9	
Low	154	25.6	174	29.5	
None	13	2.2	18	3.1	
Total Valid	601	100.0	590	100.0	
Not Sure	14		14		
(No answer)	6		17		
Total	621		621		

Wyoming residents perceive the threat of *severe winter weather* over the next five years to be fairly high, at both the state level and the local level (Table 5.12).

**Table 5.12. Perceived threat level of severe winter weather, “in Wyoming,” and “in community and surrounding area.”**

<i>Severe winter weather</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	354	58.3	325	54.6	
Medium	212	34.9	210	35.3	
Low	35	5.8	49	8.2	
None	6	1.0	11	1.8	
Total Valid	607	100.0	595	100.0	
Not Sure	9		8		
(No answer)	5		18		
Total	621		621		

Wyoming residents perceive the threat of *volcano* over the next five years to be low (Table 5.13.).

**Table 5.13. Perceived threat level of *volcano*, “in Wyoming,” and “in community and surrounding area.”**

<i>Volcano</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	39	7.1	29	5.2	
Medium	98	17.9	53	9.5	
Low	208	37.9	188	33.6	
None	204	37.2	289	51.7	
Total Valid	549	100.0	559	100.0	
Not Sure	58		42		
(No answer)	14		20		
Total	621		621		

Wyoming residents perceive the threat of *water contamination* over the next five years to be between low and medium (Table 5.14.).

**Table 5.14. Perceived threat level of *water contamination*, “in Wyoming,” and “in community and surrounding area.”**

<i>Water contamination</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	105	18.3	92	16.1	
Medium	231	40.2	202	35.4	
Low	217	37.7	237	41.6	
None	22	3.8	39	6.8	
Total Valid	575	100.0	570	100.0	
Not Sure	39		34		
(No answer)	7		17		
Total	621		621		

Wyoming residents perceive the threat of *wildfire* over the next five years to be slightly higher than medium (Table 5.15).

**Table 5.15. Perceived threat level of *wildfire*, “in Wyoming,” and “in community and surrounding area.”**

<i>Wildfire</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	318	52.6	242	40.9	
Medium	213	35.2	211	35.6	
Low	65	10.7	111	18.8	
None	9	1.5	28	4.7	
Total Valid	605	100.0	592	100.0	
Not Sure	9		11		
(No answer)	7		18		
Total	621		621		

Wyoming residents identified several *other* hazards; for these, the perceived level of threat is medium at both the state level and the local level (Table 5.16).

**Table 5.16. Perceived *other* threat level, “in Wyoming,” and “in community and surrounding area.”**

<i>Other</i>	Threat level in Wyoming, overall		Threat level in community & surrounding area		Mean level of perceived threat
	Count	%	Count	%	
High	29	50.0	31	51.7	
Medium	16	27.6	11	18.3	
Low	5	8.6	8	13.3	
None	8	13.8	10	16.7	
Total Valid	58	100.0	60	100.0	
Not Sure	24		25		
(No answer)	539		536		
Total	621		621		

**Q2. How concerned are you that in the next FIVE years the following hazards may harm you, your family or your property in Wyoming? Answer using a scale from 1 to 5, where 1 is not at all concerned and 5 is very concerned**

The level of concern for Wyoming residents that *flood* may harm them, their property, or their families within the next five years is fairly low (Table 5.17.).

**Table 5.17. Level of concern about flood.**

<i>Flood</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	221	36.2	<p style="text-align: center;"><b>Flood</b></p> <p style="text-align: center;">2.17</p>
2	160	26.2	
3	156	25.6	
4	53	8.7	
5	20	3.3	
<b>Total Valid</b>	<b>610</b>	<b>100.0</b>	
<b>(No answer)</b>	<b>11</b>		
<b>Total</b>	<b>621</b>		

The level of concern for Wyoming residents that *dam failure* may harm them, their property, or their families within the next five years is quite low (Table 5.18.).

**Table 5.18. Level of concern about dam failure.**

<i>Dam failure</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	299	49.6	<p style="text-align: center;"><b>Dam failure</b></p> <p style="text-align: center;">1.89</p>
2	125	20.7	
3	133	22.1	
4	37	6.1	
5	9	1.5	
<b>Total Valid</b>	<b>603</b>	<b>100.0</b>	
<b>(No answer)</b>	<b>18</b>		
<b>Total</b>	<b>621</b>		

The level of concern for Wyoming residents that *drought* may harm them, their property, or their families within the next five years is moderate, though tending toward higher concern (Table 5.19).

**Table 5.19. Level of concern about drought.**

<i>Drought</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	53	8.8	
2	82	13.6	
3	135	22.5	
4	197	32.8	
5	134	22.3	
Total Valid	601	100.0	
(No answer)	20		
Total	621		

The level of concern for Wyoming residents that a *hazardous materials accident/spill* may harm them, their property, or their families within the next five years is moderate (Table 5.20).

**Table 5.20. Level of concern about HazMat.**

<i>HazMat*</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	117	19.4	
2	125	20.7	
3	174	28.8	
4	121	20.0	
5	67	11.1	
Total Valid	604	100.0	
(No answer)	17		
Total	621		

\* hazardous materials accident/spill

The level of concern for Wyoming residents that a *landslide* may harm them, their property, or their families within the next five years is very low (Table 5.21).

**Table 5.21. Level of concern about *landslide*.**

<i>Landslide</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	325	53.6	
2	127	21.0	
3	117	19.3	
4	31	5.1	
5	6	1.0	
Total Valid	606	100.0	
(No answer)	15		
Total	621		

The level of concern for Wyoming residents that a *snow avalanche* may harm them, their property, or their families within the next five years is low (Table 5.22).

**Table 5.22. Level of concern about *snow avalanche*.**

<i>Snow avalanche</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	305	49.8	
2	112	18.3	
3	120	19.6	
4	52	8.5	
5	23	3.8	
Total Valid	612	100.0	
(No answer)	9		
Total	621		

The level of concern for Wyoming residents that a *meteor impact* may harm them, their property, or their families within the next five years is very low (Table 5.23.).

**Table 5.23. Level of concern about *meteor impact*.**

<i>Meteor impact</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	367	60.2	<p><b>Meteor impact</b></p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p> <p>1.68</p>
2	106	17.4	
3	111	18.2	
4	15	2.5	
5	11	1.8	
<b>Total Valid</b>	<b>610</b>	<b>100.0</b>	
(No answer)	11		
<b>Total</b>	<b>621</b>		

The level of concern for Wyoming residents that a *earthquake* may harm them, their property, or their families within the next five years is fairly low (Table 5.24.).

**Table 5.24. Level of concern about *earthquake*.**

<i>Earthquake</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	172	28.4	<p><b>Earthquake</b></p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p> <p>2.49</p>
2	146	24.1	
3	144	23.8	
4	105	17.3	
5	39	6.4	
<b>Total Valid</b>	<b>606</b>	<b>100.0</b>	
(No answer)	15		
<b>Total</b>	<b>621</b>		

The level of concern for Wyoming residents that a *mine subsidence* may harm them, their property, or their families within the next five years is low (Table 5.25).

**Table 5.25. Level of concern about *mine subsidence*.**

<i>Mine subsidence</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	320	52.4	<p><b>Mine subsidence</b></p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p> <p>1.91</p>
2	126	20.6	
3	93	15.2	
4	46	7.5	
5	26	4.3	
Total Valid	611	100.0	
(No answer)	10		
Total	621		

The level of concern for Wyoming residents that a *tornado* may harm them, their property, or their families within the next five years is moderate (Table 5.26).

**Table 5.26. Level of concern about *tornado*.**

<i>Tornado</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	106	17.5	<p><b>Tornado</b></p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p> <p>2.74</p>
2	171	28.3	
3	155	25.6	
4	123	20.3	
5	50	8.3	
Total Valid	605	100.0	
(No answer)	16		
Total	621		

The level of concern for Wyoming residents that a *severe non-winter weather* may harm them, their property, or their families within the next five years is moderate (Table 5.27).

**Table 5.27. Level of concern about severe non-winter weather.**

<i>Severe non-winter weather</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	72	11.7	<p><b>Severe non-winter weather</b></p> <p>Mean level of concern: 3.04</p>
2	143	23.3	
3	152	24.8	
4	181	29.5	
5	65	10.6	
Total Valid	613	100.0	
(No answer)	8		
Total	621		

The level of concern for Wyoming residents that a *severe winter weather* may harm them, their property, or their families within the next five years is moderate, though tending toward higher concern (Table 5.28).

**Table 5.28. Level of concern about severe winter weather.**

<i>Severe winter weather</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	39	6.4	<p><b>Severe winter weather</b></p> <p>Mean level of concern: 3.60</p>
2	79	12.9	
3	121	19.8	
4	224	36.6	
5	149	24.3	
Total Valid	612	100.0	
(No answer)	9		
Total	621		

The level of concern for Wyoming residents that a *volcano* may harm them, their property, or their families within the next five years is low (Table 5.29).

**Table 5.29. Level of concern about volcano.**

<i>Volcano</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	340	55.6	<p>Volcano</p> <p>Mean level of concern: 1.85</p>
2	113	18.5	
3	92	15.0	
4	45	7.4	
5	22	3.6	
Total Valid	612	100.0	
(No answer)	9		
Total	621		

The level of concern for Wyoming residents that a *water contamination* may harm them, their property, or their families within the next five years is moderate (Table 5.30).

**Table 5.30. Level of concern about water contamination.**

<i>Water contamination</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	95	15.5	<p>Water contamination</p> <p>Mean level of concern: 2.98</p>
2	115	18.8	
3	179	29.3	
4	149	24.4	
5	73	11.9	
Total Valid	611	100.0	
(No answer)	10		
Total	621		

The level of concern for Wyoming residents that a *wildfire* may harm them, their property, or their families within the next five years is moderate, though tending toward higher concern (Table 5.31).

**Table 5.31. Level of concern about wildfire.**

<i>Wildfire</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	73	11.9	
2	96	15.6	
3	147	23.9	
4	163	26.5	
5	136	22.1	
<b>Total Valid</b>	615	100.0	
(No answer)	6		
<b>Total</b>	621		

Wyoming residents identified several other hazards that were not specifically named on the questionnaire (see Appendix B). For these, collectively, the level of resident concern that these hazards may harm them, their property, or their families within the next five years is moderate (Table 5.32).

**Table 5.32. Level of other concern.**

<i>Other</i>	Threat level in Wyoming, overall		Mean level of concern
	Count	%	
1	18	28.6	
2	2	3.2	
3	14	22.2	
4	6	9.5	
5	23	36.5	
<b>Total Valid</b>	63	100.0	
(No answer)	558		
<b>Total</b>	621		

**Q3. In the past 12 months have you...**

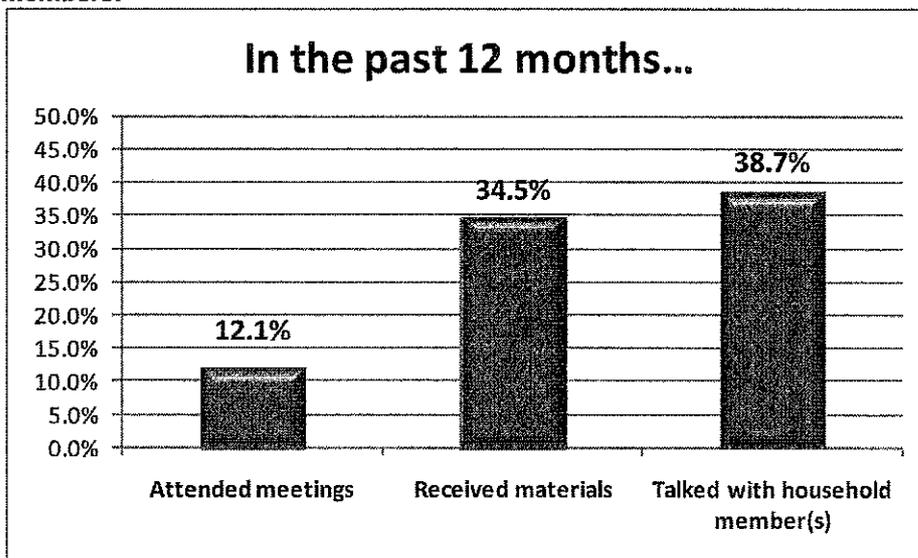
- *Attended any meetings related to natural disasters or disaster preparedness?*
- *Received any material(s) related to disaster preparedness?*
- *Talked with anyone in your household about what to do in the event of a natural disaster?*

In the past 12 months, over 38% of Wyoming residents talked to someone in their household about what to do in the event of a natural disaster; over 34% received some material related to disaster preparedness; and around 12% attended a meeting or meetings related to natural disasters or disaster preparedness (Table 5.33; Figure 5.1).

**Table 5.33. Past 12 months, related to disaster-preparedness: attended meeting(s); received materials; discussed plans with someone in household.**

<i>In the past 12 months have you...</i>	<b>Attended meetings related to natural disasters...</b>		<b>Received any materials</b>		<b>Talked with anyone in your household</b>	
	Count	%	Count	%	Count	%
Yes	73	12.1	209	34.5	234	38.7
No	526	87.1	351	57.9	356	58.9
Don't remember	5	.8	46	7.6	14	2.3
<b>Total Valid</b>	604	100.0	606	100.0	604	100.0
(No answer)	17		15		17	
<b>Total</b>	621		621		621	

**Figure 5.1. In the past 12 months: attended meetings; received materials; talked with household members.**



**Q4. Mitigation is activity intended to prevent and/or lessen the impact of a hazard. What do you think might be the need in the next FIVE years for mitigation for each of the following hazards in Wyoming overall, and specifically in your community and surrounding area?**

Wyoming residents perceive the need for mitigation for *flood* over the next five years to be medium at the state level and fairly low locally (Table 5.34).

**Table 5.34. Perceived need for mitigation of *flood*, “in Wyoming,” and “in community and surrounding area.”**

<i>Flood</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	29	5.3	40	7.3	
Medium	202	36.9	140	25.5	
Low	265	48.4	275	50.2	
No need	51	9.3	93	17.0	
Total Valid	547	100.0	548	100.0	
Not Sure	50		29		
(No answer)	24		44		
Total	621		621		

Wyoming residents perceive the need for mitigation for *dam failure* over the next five years to be fairly low at at the state level and locally (Table 5.35).

**Table 5.35. Perceived need for mitigation of *dam failure*, “in Wyoming,” and “in community and surrounding area.”**

<i>Dam failure</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	24	4.6	27	5.0	
Medium	161	30.6	105	19.6	
Low	264	50.2	228	42.5	
No need	77	14.6	176	32.8	
Total Valid	526	100.0	536	100.0	
Not Sure	60		34		
(No answer)	35		51		
Total	621		621		

Wyoming residents perceive the need for mitigation for *drought* over the next five years to be fairly low at the state level and medium at the local level (Table 5.36).

**Table 5.36. Perceived need for mitigation of *drought*, “in Wyoming,” and “in community and surrounding area.”**

<i>Drought</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	211	38.8	200	37.3	
Medium	224	41.2	208	38.8	
Low	87	16.0	98	18.3	
No need	22	4.0	30	5.6	
Total Valid	544	100.0	536	100.0	
Not Sure	35		27		
(No answer)	42		58		
Total	621		621		

Wyoming residents perceive the need for mitigation for *hazardous materials accident/spill* over the next five years to be medium at the state level and medium-low locally (Table 5.37).

**Table 5.37. Perceived need for mitigation of *HazMat*, “in Wyoming,” and “in community and surrounding area.”**

<i>HazMat*</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	126	22.9	111	20.7	
Medium	223	40.5	192	35.8	
Low	175	31.8	190	35.4	
No need	27	4.9	44	8.2	
Total Valid	551	100.0	537	100.0	
Not Sure	40		33		
(No answer)	30		51		
Total	621		621		

\*Hazardous materials accident/spill

Wyoming residents perceive the need for mitigation for *landslide* over the next five years to be medium at the state level and fairly low locally (Table 5.38.).

**Table 5.38. Perceived need for mitigation of *landslide*, “in Wyoming,” and “in community and surrounding area.”**

<i>Landslide</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	22	4.1	18	3.3	
Medium	126	23.3	70	13.0	
Low	286	53.0	248	46.1	
No need	106	19.6	202	37.5	
Total Valid	540	100.0	538	100.0	
Not Sure	53		36		
(No answer)	28		47		
Total	621		621		

Wyoming residents perceive the need for mitigation for *snow avalanche* over the next five years to be fairly low both at the state level and locally (Table 5.39.).

**Table 5.39. Perceived need for mitigation of *snow avalanche*, “in Wyoming,” and “in community and surrounding area.”**

<i>Snow avalanche</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	77	13.8	51	9.3	
Medium	221	39.5	96	17.5	
Low	193	34.5	194	35.4	
No need	68	12.2	207	37.8	
Total Valid	559	100.0	548	100.0	
Not Sure	36		26		
(No answer)	26		47		
Total	621		621		

Wyoming residents perceive the need for mitigation for *meteor impact* over the next five years to be medium-low at the state level and very low locally (Table 5.40).

**Table 5.40. Perceived need for mitigation of *meteor impact*, “in Wyoming,” and “in community and surrounding area.”**

<i>Meteor impact</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	10	2.1	8	1.7	
Medium	33	6.8	27	5.6	
Low	205	42.1	186	38.8	
No need	239	49.1	258	53.9	
Total Valid	487	100.0	479	100.0	
Not Sure	106		100		
(No answer)	28		42		
Total	621		621		

Wyoming residents perceive the need for mitigation for *earthquake* over the next five years to be very low at the state level and low locally (Table 5.41).

**Table 5.41. Perceived need for mitigation of *earthquake*, “in Wyoming,” and “in community and surrounding area.”**

<i>Earthquake</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	86	15.5	66	12.2	
Medium	169	30.5	130	24.0	
Low	220	39.7	225	41.5	
No need	79	14.3	121	22.3	
Total Valid	554	100.0	542	100.0	
Not Sure	40		34		
(No answer)	27		45		
Total	621		621		

Wyoming residents perceive the need for mitigation for *mine subsidence* over the next five years to be medium-low at the state level and low locally (Table 5.42).

**Table 5.42. Perceived need for mitigation of *mine subsidence*, “in Wyoming,” and “in community and surrounding area.”**

<i>Mine subsidence</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	79	14.7	37	7.0	
Medium	186	34.5	83	15.8	
Low	198	36.7	200	38.1	
No need	76	14.1	205	39.0	
Total Valid	539	100.0	525	100.0	
Not Sure	55		52		
(No answer)	27		44		
Total	621		621		

Wyoming residents perceive the need for mitigation for *tornado* over the next five years to be medium-low at both the state level and locally (Table 5.43).

**Table 5.43. Perceived need for mitigation of *tornado*, “in Wyoming,” and “in community and surrounding area.”**

<i>Tornado</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	93	16.7	79	14.5	
Medium	200	36.0	151	27.7	
Low	205	36.9	231	42.4	
No need	58	10.4	84	15.4	
Total Valid	556	100.0	545	100.0	
Not Sure	36		30		
(No answer)	29		46		
Total	621		621		

Wyoming residents perceive the need for mitigation for *severe non-winter weather* over the next five years to be medium-low at both the state level and locally (Table 5.44.).

**Table 5.44. Perceived need for mitigation of *severe non-winter weather*, “in Wyoming,” and “in community and surrounding area.”**

<i>Severe non-winter weather</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	100	17.6	94	17.1	
Medium	229	40.4	205	37.2	
Low	192	33.9	196	35.6	
No need	46	8.1	56	10.2	
Total Valid	567	100.0	551	100.0	
Not Sure	26		26		
(No answer)	28		44		
Total	621		621		

Wyoming residents perceive the need for mitigation for *severe winter weather* over the next five years to be medium-low at the state level and medium at the local level (Table 5.45.).

**Table 5.45. Perceived need for mitigation of *severe winter weather*, “in Wyoming,” and “in community and surrounding area.”**

<i>Severe winter weather</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	238	41.8	224	40.4	
Medium	240	42.1	229	41.3	
Low	71	12.5	80	14.4	
No need	21	3.7	21	3.8	
Total Valid	570	100.0	554	100.0	
Not Sure	24		24		
(No answer)	27		43		
Total	621		621		

Wyoming residents perceive the need for mitigation for *volcano* over the next five years to be slightly higher than medium at the state level and low at the local level (Table 5.46).

**Table 5.46. Perceived need for mitigation of *volcano*, “in Wyoming,” and “in community and surrounding area.”**

<i>Volcano</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	43	8.1	35	6.7	
Medium	85	16.0	52	9.9	
Low	186	35.1	165	31.5	
No need	216	40.8	272	51.9	
Total Valid	530	100.0	524	100.0	
Not Sure	66		54		
(No answer)	25		43		
Total	621		621		

Wyoming residents perceive the need for mitigation for *water contamination* over the next five years to be fairly low at the state level, but around medium at the local level (Table 5.47).

**Table 5.47. Perceived need for mitigation of *water contamination*, “in Wyoming,” and “in community and surrounding area.”**

<i>Water contamination</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	151	26.6	132	24.1	
Medium	216	38.1	208	38.0	
Low	174	30.7	176	32.1	
No need	26	4.6	32	5.8	
Total Valid	567	100.0	548	100.0	
Not Sure	34		31		
(No answer)	20		42		
Total	621		621		

Wyoming residents perceive the need for mitigation for *wildfire* over the next five years to be around medium at both the state level and at the local level (Table 5.48.).

**Table 5.48. Perceived need for mitigation of *wildfire*, “in Wyoming,” and “in community and surrounding area.”**

<i>Wildfire</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	259	45.3	220	39.6	
Medium	217	37.9	188	33.8	
Low	74	12.9	112	20.1	
No need	22	3.8	36	6.5	
Total Valid	572	100.0	556	100.0	
Not Sure	26		23		
(No answer)	23		42		
Total	621		621		

Several other hazards that were not specifically named on the questionnaire were identified by Wyoming residents as in need of mitigation (see Appendix C).For these, the perceived need for mitigation is around medium at both the state level and at the local level (Table 5.49.).

**Table 5.49. Perceived need for *other* mitigation, “in Wyoming,” and “in community and surrounding area.”**

<i>Other</i>	In Wyoming, overall		In community or surrounding area		Mean level of perceived mitigation need
	Count	%	Count	%	
High	27	52.9	27	54.0	
Medium	9	17.6	11	22.0	
Low	5	9.8	3	6.0	
No need	10	19.6	9	18.0	
Total Valid	51	100.0	50	100.0	
Not Sure	22		26		
(No answer)	548		545		
Total	621		621		

**Q5. Does your household have a plan on how to handle any of the hazards listed above?**

**Q6. Does your household have an "Emergency Supply Kit" (extra food, water, batteries, or other emergency supplies)?**

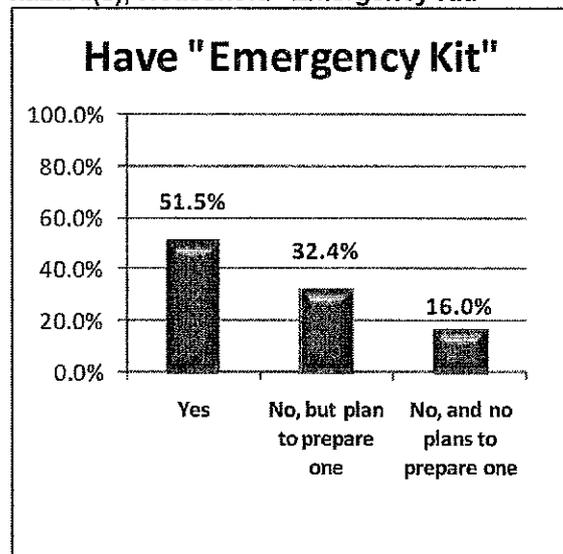
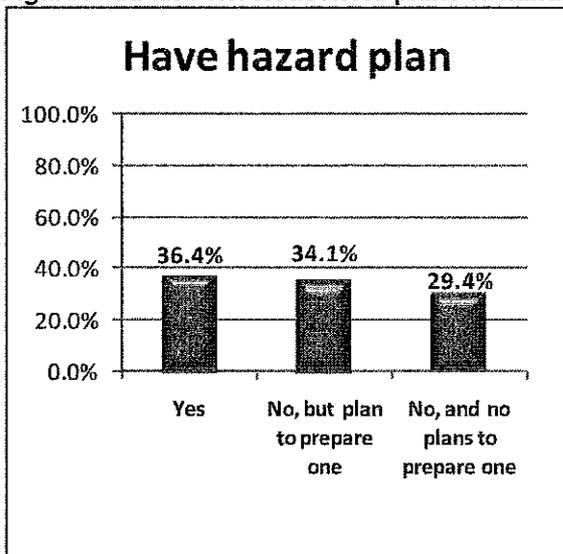
Over 36% of Wyoming households have a plan to handle at least one of the hazards named in the survey. Over 34% of households have no hazard but plan to prepare one, while around 30% have neither a hazard plan nor expect to prepare one (Table 5.50., below; Figure 5.2., next page) Over half (52%) of Wyoming households have an "Emergency Supply Kit" (defined in the survey questionnaire as "extra food, water, batteries, or other emergency supplies) Over 34% of households have no hazard but plan to prepare one, while around 30% have neither a hazard plan nor expect to prepare one (Table 5.50.; Figures 5.2.).

**Table 5.50. Household has plans to handle hazards; has "Emergency Supply Kit."**

Does your household have...	...a plan to handle hazards listed above?		...an "Emergency Supply Kit"?*	
	Count	%	Count	%
Yes	203	36.4	302	51.5
No, but plan to prepare one	190	34.1	190	32.4
No, and no plans to prepare one	164	29.4	94	16.0
Total valid	557	100.0	586	100.0
Not Sure	38		17	
(No answer)	26		18	
Total	621		621	

\* This might include extra food, water, batteries, or other emergency supplies.

**Figures 5.2. and 5.3. Household plans to handle hazard(s); Household "Emergency Kit."**



**Q7. Have you had personal experience(s) with any of the hazards listed below?**

Wyoming residents have had far higher personal experience with *severe winter weather* than other hazards (in Wyoming as opposed to elsewhere), but also have substantial personal experience with *severe non-winter weather*, *drought*, and *wildfire* (Table 5.51.; Figure 5.4.).

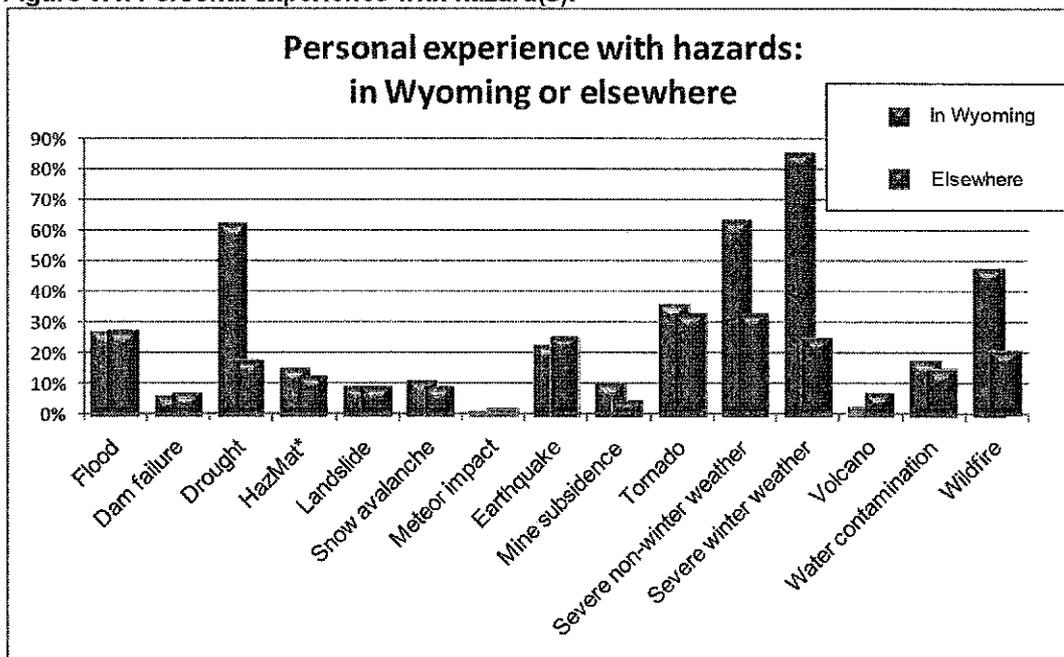
**Table 5.51. Personal experience with hazards.**

Personal experience with hazards	Yes, experience occurred in Wyoming		Yes, experience occurred elsewhere		No personal experience with hazard	
	Count	%	Count	%	Count	%
Flood	166	27.2	166	27.2	302	49.5
Dam failure	32	5.5	40	6.8	525	89.4
Drought	374	62.2	103	17.1	168	28.0
HazMat*	88	14.6	72	12.0	454	75.5
Landslide	54	8.9	52	8.6	508	83.8
Snow avalanche	64	10.6	53	8.8	493	81.8
Meteor impact	4	0.7	11	1.8	594	98.3
Earthquake	135	22.3	153	25.3	344	56.9
Mine subsidence	57	9.5	26	4.3	526	87.2
Tornado	216	35.9	197	32.8	226	37.6
Severe non-winter weather	383	63	197	32.4	112	18.4
Severe winter weather	522	85.3	150	24.5	44	7.2
Volcano	12	2	39	6.5	554	92.3
Water contamination	104	17.3	86	14.3	428	71.2
Wildfire	289	47.8	121	20.0	237	39.2
Other**	14	--	11	--	32	--

\*Hazardous materials accident or spills

\*\*The low number of residents who provided valid responses to this item precludes informative percentages; counts are provided. See appendix D for *other* responses to this question.

**Figure 5.4. Personal experience with hazard(s).**

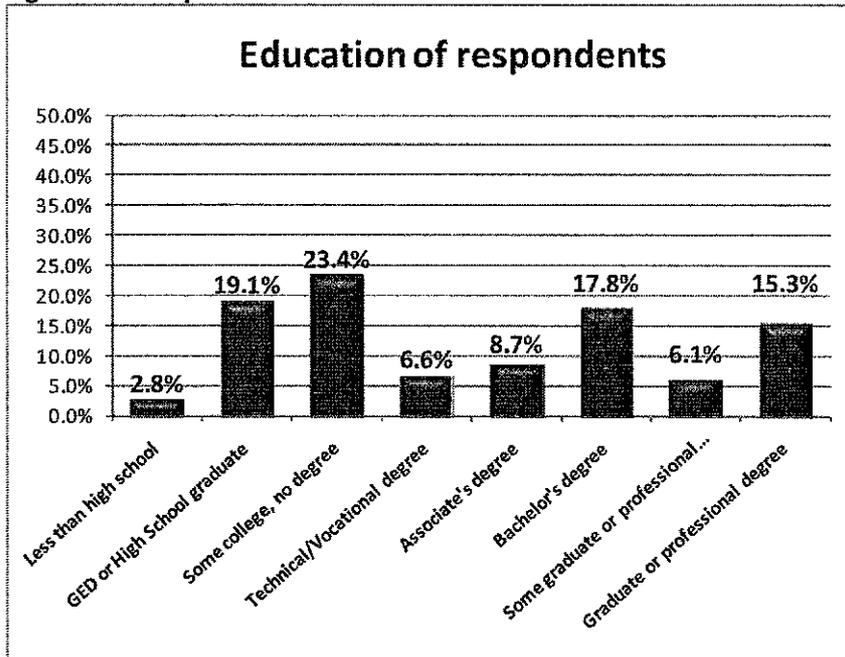


**Q8. What is the highest level of school you completed or the highest degree you received?**

**Table 5.52: Respondent education level.**

<i>Education level</i>	Count	%
Less than high school	17	2.8
GED or High School graduate	116	19.1
Some college, no degree	142	23.4
Technical/Vocational degree	40	6.6
Associate's degree	53	8.7
Bachelor's degree	108	17.8
Some graduate or professional school	37	6.1
Graduate or professional degree	93	15.3
Total Valid	606	100.0
(No answer)	15	
Total	621	

**Figure 5.5. Respondent education level.**

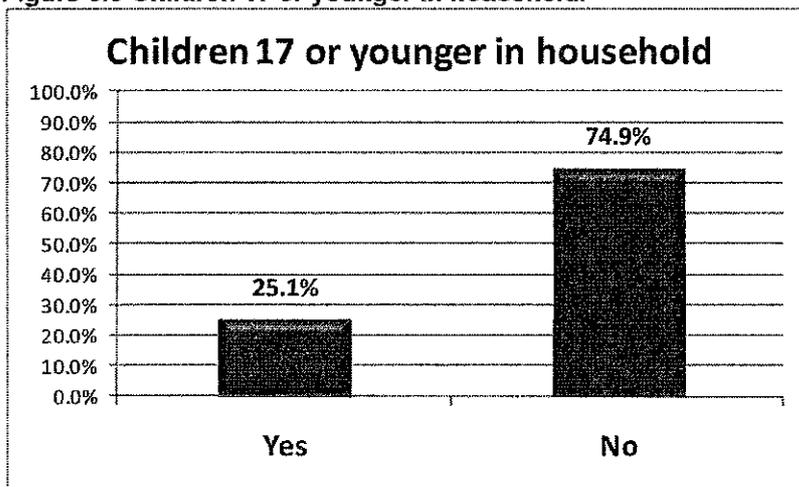


**Q9. Do you have children 17 or younger living with you?**

**Table 5.53. Children 17 or younger in household.**

<i>Children 17 or younger in household</i>	Count	%
Yes	153	25.1
No	457	74.9
Total Valid	610	100.0
(No answer)	11	
Total	621	

**Figure 5.6 Children 17 or younger in household.**

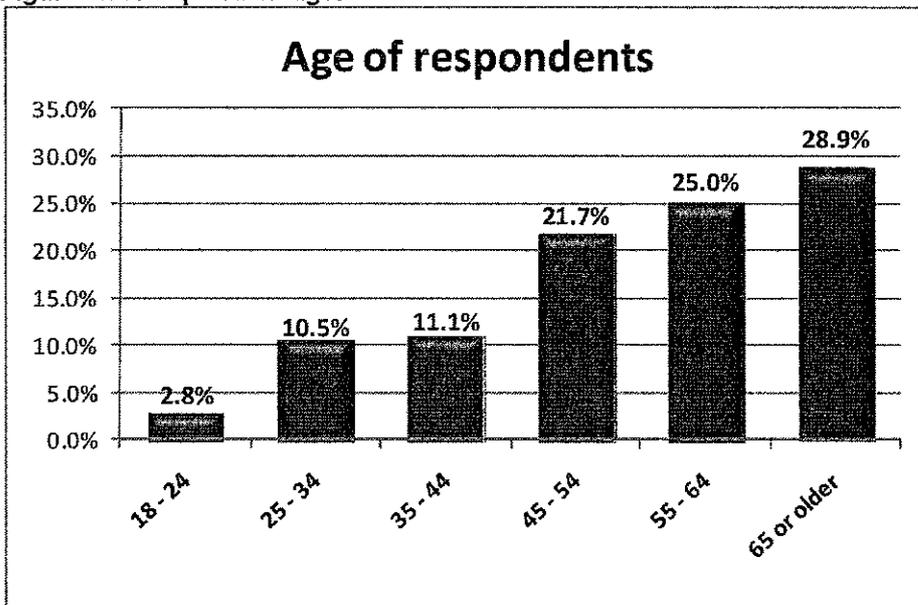


**Q10. What is your age?**

**Table 5.54. Respondent age.**

<i>Respondent age</i>	Count	%
18 - 24	17	2.8
25 - 34	64	10.5
35 - 44	68	11.1
45 - 54	133	21.7
55 - 64	153	25.0
65 or older	177	28.9
<b>Total Valid</b>	<b>612</b>	<b>100.0</b>
(No answer)	9	
<b>Total</b>	<b>621</b>	

**Figure 5.7. Respondent age.**

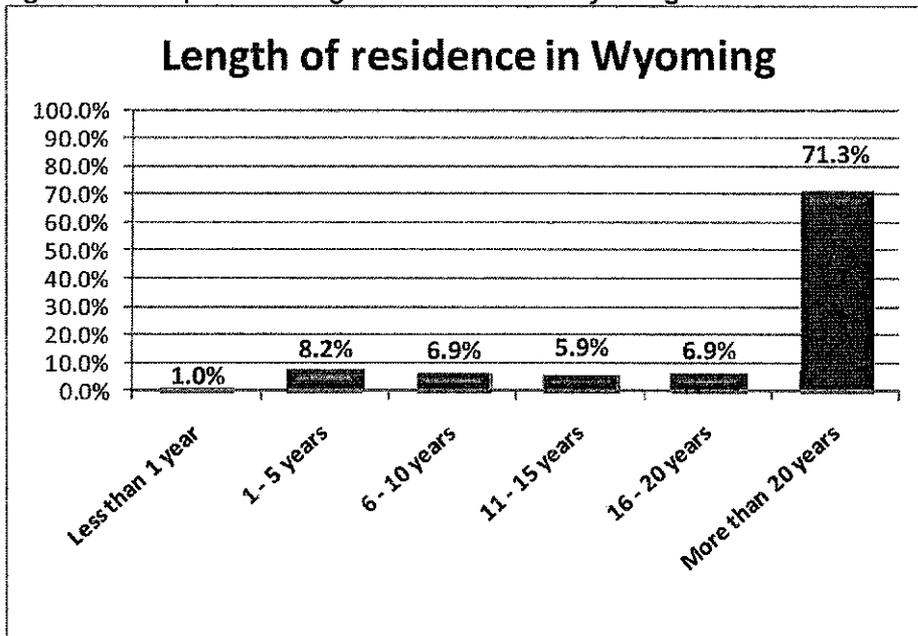


**Q11. How long have you lived in Wyoming?**

**Table 5.55. Respondent length of residence in Wyoming.**

<i>Length of residence</i>	Count	%
Less than 1 year	6	1.0
1 - 5 years	50	8.2
6 - 10 years	42	6.9
11 - 15 years	36	5.9
16 - 20 years	42	6.9
More than 20 years	437	71.3
Total Valid	613	100.0
(No answer)	8	
Total	621	

**Figure 5.8. Respondent length of residence in Wyoming.**

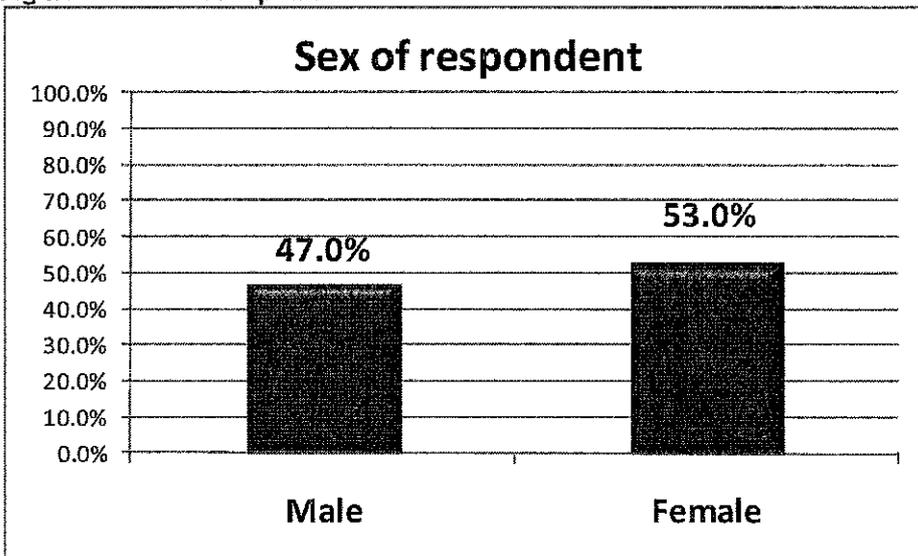


**Q12. Are you:**

**Table 5.56. Sex of respondent.**

<i>Sex of respondent</i>	Count	%
Male	285	47.0
Female	322	53.0
Total Valid	607	100.0
(No answer)	14	
Total	621	

**Figure 5.9. Sex of respondent.**



## 6. References

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## 7. Appendices: Responses to open-ended questions and survey instrument.

### 7.1. Appendix A. Question 1 *Other, specify* responses.

- Beetle infestation; beetle kill; pine beetles, etc. (5).
- Bombings.
- Civil unrest.
- Coal bed methane water and fracturing oil layers causing water contamination.
- Disease epidemic.
- Explosion at refinery/power plant.
- Gas explosions.
- Grasshoppers.
- Hail; severe hailstorms (2).
- Insect infestation, specifically grasshoppers.
- Insects.
- Low numbers of wildlife due to disease.
- Nuclear attack.
- Oil and gas explosion.
- Terrorism/ terrorists (6).
- Terroristic threats due to Wyoming's energy resource value and potential.
- Terrorists at Wyodak power plant.
- Trains; chemical spills or derailment.
- West Nile, anthrax, and hantavirus.

## 7.2. Appendix B. Question 2 *Other, specify* responses

- Pine beetles; beetles; beetle infestation (3).
- Bombings.
- Border enforcement.
- Civil unrest.
- Economic collapse.
- Epidemic.
- Gas explosions.
- Grasshoppers.
- Hail.
- Honor farm break.
- Insect infestation, specifically grasshoppers.
- Insects.
- Nuclear Attack.
- Plant explosion.
- Powerlines.
- Terrorism toward energy industry/ energy resources (2).
- Terrorism (4).
- Terroristic attack on energy resources.
- Trains.
- Truck or rail accident with hazardous materials.
- Vanishing wildlife due to disease.
- West Nile, anthrax, and hantavirus.

### 7.3. Appendix C. Question 4 *Other, specify* responses

- Beetle infestation; beetles; pine beetles, etc. (4).
- Better warning systems for emergency and disaster.
- Civil unrest.
- Disease epidemic.
- Diseased wildlife.
- Earthquakes in Teton County.
- Gas explosions.
- Grasshoppers.
- Hail.
- Insect infestation, specifically grasshoppers.
- Insects.
- Nuclear Attack.
- Pests.
- Plant explosion.
- Powerlines.
- Terrorism/ terrorism (5).
- Terroristic attack on natural energy sources.
- Trains.
- Truck or rail hazardous spills; severe hailstorms.
- West Nile, anthrax, and hantavirus.

#### 7.4. Appendix D. Question 7 *Other, specify* responses

- Pine beetles; beetles; beetle infestation (3).
- Civil unrest.
- Diseased wildlife.
- Epidemic.
- Grasshoppers.
- Hail.
- Hurricanes.
- Insect infestation, specifically grasshoppers.
- Insects.
- Nuclear Attack.
- Plant explosion.
- Terrorism (3).
- Terrorist Activity.
- Trains.
- West Nile, anthrax, and hantavirus.



Figure 7.2. Survey instrument, Page 2

**2.** How concerned are you that in the next FIVE years the following hazards may harm you, your family or your property in Wyoming? Answer using a scale from 1 to 5, where 1 is not at all concerned and 5 is very concerned.

	Not at all concerned <span style="margin-left: 100px;">Neutral</span> <span style="margin-left: 100px;">Very concerned</span>				
	1	2	3	4	5
Flood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dam failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drought	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hazardous materials accident/spill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landslide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snow avalanche	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meteor impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Earthquake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mine subsidence (ground movement / soil settling due to collapse of abandoned mineshaft)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tornado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Severe non-winter weather (events such as non-tornado windstorms and thunderstorms)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Severe winter weather (events such as winter storms, blizzards, and ice storms)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Volcano	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water contamination (of lakes, rivers, oceans, or groundwater through natural processes or human activity)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildfire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**3.** In the past 12 months have you...

Attended any meetings related to natural disasters or disaster preparedness?

- Yes  No  Don't remember

Received any material(s) related to disaster preparedness?

- Yes  No  Don't remember

Talked with anyone in your household about what to do in the event of a natural disaster?

- Yes  No  Don't remember

Figure 7.3. Survey instrument, Page 3

4. Mitigation is activity intended to prevent and/or lessen the impact of a hazard. What do you think might be the need in the next FIVE years for mitigation for each of the following hazards in Wyoming overall, and specifically in your community and surrounding area?

	Need for mitigation in Wyoming, overall					Need for mitigation in your community and surrounding area				
	High	Medium	Low	No Need	Not Sure	High	Medium	Low	No Need	Not Sure
Flood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dam failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drought	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hazardous materials accident/spill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landslide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snow avalanche	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meteor impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Earthquake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mine subsidence (ground movement / soil settling due to collapse of abandoned mineshaft)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tornado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Severe non-winter weather (events such as non-tornado windstorms and thunderstorms)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Severe winter weather (events such as winter storms, blizzards, and ice storms)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Volcano	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water contamination (of lakes, rivers, oceans, or groundwater through natural processes or human activity)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildfire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Does your household have a plan on how to handle any of the hazards listed above?  
 Yes  No, but plan to prepare one  No, and no plans to prepare one  Not sure

6. Does your household have an "Emergency Supply Kit" (extra food, water, batteries, or other emergency supplies)?  
 Yes  No, but plan to prepare one  No, and no plans to prepare one  Not sure



Figure 7.4. Survey instrument, Page 4

**7.** Have you had personal experience(s) with any of the hazards listed below?

	Yes, Experience(s) occurred in Wyoming	Yes, Experience(s) occurred elsewhere	No personal experience with hazard
Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazardous materials accident/spill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Snow avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meteor Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mine subsidence (ground movement / soil settling due to collapse of abandoned mineshaft)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe non-winter weather (events such as non-tornado windstorms and thunderstorms)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe winter weather (events such as winter storms, blizzards, and ice storms)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water contamination (of lakes, rivers, oceans, or groundwater through natural processes or human activity)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**8.** What is the highest level of school you completed or the highest degree you received?

- Less than high school
- GED or High School graduate
- Some college, no degree
- Technical/Vocational degree
- Associate's degree
- Bachelor's degree
- Some graduate or professional school
- Graduate or professional degree

**9.** Do you have children 17 or younger living with you?

Yes  No

**10.** What is your age?

- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 or older

**11.** How long have you lived in Wyoming?

- Less than 1 year
- 1 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- More than 20 years

**12.** Are you:

Male  Female

Thank you for participating in our survey! Please mail your completed questionnaire in the envelope provided to:  
University of Wyoming, Dept. 3925, 1000 E. University Avenue, Laramie, WY 82071

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