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Project Overview

- My Projects
- Create New Project
- My Reminders (17)

Project Administration

- Project Overview
- Designer
- Share this Project
- Sign this Package
- Submit this Package
- Delete this Package
- Send Project Mail
- Reviews
- Project History

Messages & Alerts (17)

Other Tools

- Forms and Templates

[423231-8] Community and institutional response to climate change in SE Alaska

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Research Institution University of Alaska Fairbanks, Fairbanks, AK

Title Community and institutional response to climate change in SE Alaska

Principal Investigator Brinkman, Todd, PhD

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The documents for this project can be accessed from the [Designer](#).

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Package 423231-8 is: Locked

Package 8 of 8 | [Jump](#)

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Shared with the following users:

User	Organization	Access Type
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RESEARCH RELEASE FORM

Community & Organizational Response to Environmental Changes in Southeast Alaska

STUDY PURPOSE: The purpose of this study is to provide communities and scientists with local information about changes in the environment. Information from local residents will be gathered from volunteer residents about their observations and activities related to those changes. This study is consistent with research guidelines of the University of Alaska and research guidelines established in 1993 by the Alaska Federation of Natives.

TIMEFRAME: During the next 2-5 years we intend to develop a report about the information we gather. When possible and only with permission, we would like to video and record individual and group interviews. The records and video will be used to learn about what communities and organizations are experiencing and share that information with other scientists. Copies of a final report, articles, and video about what we learned will be presented and given to the communities and organizations that participate in the study. If you provide email and/or mailing address a copy will be sent to you.

CONSENT: The audio and video will be used for research only if and when the individuals and local tribal council give permission. Only the information that you are willing to release will be gathered or become part of the research record. After the study is completed and a draft report or video is completed it will be presented to the City Council for their review and approval or disapproval for use in education or research.

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Experimental Program to Stimulate Competitive Research

Institutional Response to Environmental Change in Southeast Alaska



SNAP



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Section A: Background information

In this first section, we would like to learn a little more about you and your organization.

1. Age: _____

2. Gender

- a) Male
- b) Female
- c) Prefer not to say

3. What is your position in your organization?

- a) Program Director or Executive
- b) Mid-level Manager
- c) Staff
- d) Other (please explain): _____

4. How long have you worked in your area of expertise?

- a) Less than 5 years
- b) 5-15 years
- c) More than 15 years

5. What is the highest level of education that you have completed

- a) Less than 12th Grade (no diploma)
- b) High school graduate or equivalent
- c) Some college or post high school training
- d) Two year technical or associate degree
- e) Four year college degree (BA/BS)
- f) Graduate or professional degree (MS, JD, MD, Ph.D.)

6. At which scale or area does your organization work?

- a) 1-5 acres
- b) Watershed
- c) Juneau community
- d) Southeast Alaska
- e) Statewide
- f) Beyond Alaska
- g) Other (please explain): _____

7. Does your organization:

- a) Collect data in Berners Bay
- b) Use natural resources in Berners Bay
- c) Manage natural resources in Berners Bay
- d) None of the above

If you selected a, b, or c, please describe: _____

8. How many employees does your organization have?

- a. Full time: _____
- b. Part time or seasonal: _____

9. How many years has your organization been established? _____

10. Is Alaska your primary state of residency?

- a. Yes
- b. No
- c. Don't know

11. What types of activities does your organization offer (check all that apply)?

- Fixed wing flight seeing
- Helicopter flight seeing
- Icefield or glacier trekking/landing
- Tidewater glacier viewing
- Dog sled tours
- Whale watching
- Offshore fishing
- Deepwater fishing
- Stream/river fishing
- Mendenhall Glacier
- Land-based sightseeing
- Other (please explain): _____

Section B: Organizational Processes and Structures

The following questions are *about your organization*. We would like to learn about the ways your organization is thinking about and responding to environmental change, including climate change.

1. Do environmental changes, including climate change, impact your organization?

- a. Yes [PROCEED TO QUESTION 2]
- b. No [PROCEED TO SECTION C]
- c. Don't know

Please describe: _____

2. Is your organization responding to climate change in Southeast Alaska?

- a. Yes [PROCEED TO QUESTION 4]
- b. No [PROCEED TO QUESTION 3]
- c. Don't know

3. Why do you think your organization is not responding?

4. What are the ways your organization is responding to climate change (circle all that apply):

- a. We are starting to discuss climate change
- b. We are gathering information to better understand the issue
- c. We have created a task force
- d. We have a written strategy, but not yet implemented
- e. We have a written strategy and are currently implementing it
- f. We have increased the number of staff dedicated to climate change
- g. We have a program or project for climate change impacts or adaptation
- h. It has become part of our decision-making process
- i. Don't know
- j. Other (please explain): _____

5. How likely is it that your organization will take actions to reduce the potential impacts of climate change?

- a. Very unlikely
- b. Unlikely
- c. Neutral
- d. Likely
- e. Very likely
- f. Don't know

6. How effective do you think changes to the structure of your organization could be to adapting to the potential climate change impacts?

- a. Very ineffective
- b. Ineffective
- c. Neutral
- d. Effective
- e. Very effective
- f. Don't know

7. How likely is it that your organization will expand monitoring activities for climate changes?

- a. Very unlikely
- b. Unlikely
- c. Neutral
- d. Likely
- e. Very likely
- f. Don't know

8. Could you describe what prompted your organization to respond to climate change (i.e. specific events or situations)?

9. Describe the barriers your organization has faced in responding to climate change:

10. Has your organization participated in meetings with other organizations about climate change?

- a. Yes
- b. No
- c. Don't know

11. How much time is your organization dedicating to climate change?

- a. Someone may participate in a few meetings annually
- b. An occasional part of one person's job
- c. Quarter of one full-time position
- d. Half of one full-time position
- e. One full-time position
- f. More than one full-time position
- g. Other (please explain): _____

12. Do you anticipate a need for a climate change program in your organization in the future? If so, please try to characterize the future resources needed for such a program and how it would fit in the organizational structure?

13. Climate projections suggest warmer weather and increased precipitation in Southeast Alaska. This could mean changes in weather patterns. If these projections are correct, how would your organization respond to these changes? Please indicate which apply.

- a. Change your business/management practices
 - b. Increase interactions with similar organizations
 - c. Don't know
 - d. Other (please explain): _____
-
-

14. Do you foresee any opportunities that may emerge if climate projections of warmer weather and increased precipitation occur? If so, what?

15. Can you imagine any "tipping points" caused by changes to climate change (either good or bad) for your organization, where you would no longer be able to function as you do currently? If so, please describe.

Section C: Information and communication processes

We would like to learn about your the information sources you use for your work and whether you are finding the information you would like about climate change.

1. For your work in general, how often do you use the following information sources?

	Daily	Weekly	Monthly	Quarterly	Annually	Never
Colleagues in my organization	1	2	3	4	5	6
Colleagues in similar organizations	1	2	3	4	5	6
Consultants	1	2	3	4	5	6
Individuals at research or academic institutions	1	2	3	4	5	6
Federal agencies	1	2	3	4	5	6
Internet (world wide web)	1	2	3	4	5	6
Meetings or conferences	1	2	3	4	5	6
Non-governmental organizations	1	2	3	4	5	6
Planning documents	1	2	3	4	5	6
Professional associations	1	2	3	4	5	6
Professional e-mail lists	1	2	3	4	5	6
Professional journals	1	2	3	4	5	6
Scientific journals	1	2	3	4	5	6
State agencies	1	2	3	4	5	6
Weather forecasts	1	2	3	4	5	6

Other (please explain): _____

2. For your work, how often do you use information about climate change?

- a. Daily
- b. Weekly
- c. Monthly
- d. Quarterly
- e. Annually
- f. Never

3. For your work, where do you go for information about climate change?

4. How easy or difficult is it for you to find relevant information about climate change?

5. To what extent do you agree or disagree with the following statements:

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree	Don't know
My organization wants to learn more about climate change.	-3	-2	-1	0	1	2	3	X
My organization agrees about the climate change information we need.	-3	-2	-1	0	1	2	3	X
Climate change information is easy for my organization to find.	-3	-2	-1	0	1	2	3	X
Climate change information is easy for my organization to understand.	-3	-2	-1	0	1	2	3	X
Climate change information has too much scientific detail.	-3	-2	-1	0	1	2	3	X
Climate change information lacks scientific detail.	-3	-2	-1	0	1	2	3	X
My organization has been able to answer the questions we have about climate change.	-3	-2	-1	0	1	2	3	X
My organization has been able to find concrete examples of the way climate change may affect us.	-3	-2	-1	0	1	2	3	X
My organization finds the sources of climate change information to be credible.	-3	-2	-1	0	1	2	3	X
The process used to generate climate change information is legitimate.	-3	-2	-1	0	1	2	3	X
My organization is willing to use climate change information.	-3	-2	-1	0	1	2	3	X

6. For your organization, how useful is information that addresses climate change impacts:

	Very useful	Moderately useful	Slightly useful	Not useful	Don't know
a. Occurring this season	1	2	3	4	x
b. Likely to occur in 1-5 years	1	2	3	4	x
c. Likely to occur in 5-25 years	1	2	3	4	x
d. Likely to occur in 25-50 years	1	2	3	4	x
e. Likely to occur in 50 years or more	1	2	3	4	x

7. For your organization, how useful is information about climate change impacts in:

	Very useful	Moderately useful	Slightly useful	Not useful	Don't know
The Berners Bay area	1	2	3	4	x
Within 50 miles of Juneau	1	2	3	4	x
All of Southeast Alaska	1	2	3	4	x
All of Alaska	1	2	3	4	x
All of the United States	1	2	3	4	x

8. Could you describe the characteristics of the information (i.e. length, delivery, format, etc.) that makes climate change information useful to your organization?

9. Does your organization work with scientists or research organizations on any projects?

- a. Yes
- b. No
- c. Don't know

10. If yes on 9, describe the nature of the project and relationship that you have with scientists or research organizations.

11. Has your organization ever been asked about the kind of information you would like about climate change in Southeast Alaska? By whom?

Section D: Usefulness of Climate Change Science

1. Please indicate the extent to which you agree or disagree with the statements below.

	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree	Don't know
a. Using climate change science is within my job description and responsibilities.	-3	-2	-1	0	1	2	3	x
b. Other people in my organization are currently using climate change science.	-3	-2	-1	0	1	2	3	x
c. Climate change science is useful in long-term land use planning.	-3	-2	-1	0	1	2	3	x
d. Climate change science is useful for specific management projects.	-3	-2	-1	0	1	2	3	x

Section E: Climate change impacts on Ecosystem Services

Ecosystem services is a term for the benefits that humans receive from natural resources. We're particularly interested in how ecosystem services could change as a result of climate induced changes to glaciers, streams (runoff), and estuaries (mixing zones of freshwater and saltwater).

1. How useful is the concept of ecosystems services useful to your organization?

- a. Very useful
- b. Moderately useful
- c. Slightly useful
- d. Not useful
- e. Don't know

2. How appropriate do you think it is to put a dollar value on the benefits that society derives from ecosystem services?

- a. Inappropriate
- b. Slightly inappropriate
- c. Neutral
- d. Slightly appropriate
- e. Appropriate
- f. Don't know

3. How important are the following systems to your organization?

	Not at all important	Not too important	Somewhat important	Very important	Highly important	Don't know
Glaciers	1	2	3	4	5	x
Streams	1	2	3	4	5	x
Estuaries	1	2	3	4	5	x

4. Are there other natural systems that are particularly important to your organization?

5. In the past, have you ever had to shift your business model to respond to changes in glaciers, streams, or estuaries? If yes, please describe.

6. At what point would changes in glaciers impact your business?

7. How important are the following systems to the socio-economic well being of Juneau?

	Not at all important	Not too important	Somewhat important	Very important	Highly important	Don't know
Glaciers	1	2	3	4	5	x
Streams	1	2	3	4	5	x
Estuaries	1	2	3	4	5	x

8. To what degree do glaciers influence estuaries?

- a. No influence
- b. Minor influence
- c. Moderate influence
- d. Major influence
- e. Don't know

Section F: Vulnerability and adaptation to climate change impacts

1. For each item please indicate how **LIKELY** you think the climate change impact is in Southeast Alaska.

	How LIKELY is this climate change impact?					
	Very unlikely	Unlikely	Neutral	Likely	Very likely	Don't know
a. Increase in mean annual temperatures	-2	-1	0	1	2	X
b. Increase in dew point	-2	-1	0	1	2	X
c. Less snow in winter months	-2	-1	0	1	2	X
d. Increase in stream temperatures	-2	-1	0	1	2	X
e. Changes in the snowpack	-2	-1	0	1	2	X
f. Changes in the timing of salmon migration	-2	-1	0	1	2	X
g. Changes in the relative sea level	-2	-1	0	1	2	X

2. For each item please indicate how **SEVERE** you think the climate change impact will be in Southeast Alaska.

	How SEVERE will the impact to Southeast Alaska be?					
	No impact	Some impact	Mod impact	Severe Impact	Very severe impact	Don't know
a. Increase in mean annual temperatures	0	1	2	3	4	X
b. Increase in dew point	0	1	2	3	4	X
c. Less snow in winter months	0	1	2	3	4	X
d. Increase in stream temperatures	0	1	2	3	4	X
e. Changes in the snowpack	0	1	2	3	4	X
f. Changes in the timing of salmon migration	0	1	2	3	4	X
g. Changes in the relative sea level	0	1	2	3	4	X

Section G: Attitudes about climate change

We would like to know more about your personal attitudes about climate change. These questions come from a nationally administered survey about climate change attitudes and beliefs.

1. Do you think that climate change is happening?

Yes...

- a. ...and I'm extremely sure
- b. ...and I'm very sure
- c. ...and I'm somewhat sure
- d. ...but I'm not at all sure

No...

- e. ...and I'm extremely sure
- f. ...and I'm very sure
- g. ...and I'm somewhat sure
- h. ...but I'm not at all sure

Or...

- i. I don't know

2. Assuming climate change is happening, do you think it is ...

- a. Caused mostly by human activities
- b. Caused mostly by natural changes in the environment
- c. Other
- d. None of the above because global warming isn't happening

3. How worried are you about climate change?

- a. Very worried
- b. Somewhat worried
- c. Not very worried
- d. Not at all worried

4. How much do you think climate change will harm you personally?

- a. Not at all
- b. Only a little
- c. A moderate amount
- d. A great deal
- e. Don't know

5. When do you think climate change will start to harm people in the United States?

- a. They are being harmed now
- b. In 10 years
- c. In 25 years
- d. In 50 years
- e. In 100 years
- f. Never

6. How much do you think climate change will harm future generations of people?

- a. Not at all
- b. Only a little
- c. A moderate amount
- d. A great deal
- e. Don't know

7. How much had you thought about climate change before today?

- a. A lot
- b. Some
- c. A little
- d. Not at all

8. How important is the issue of climate change to you personally?

- a. Not at all important
- b. Not too important
- c. Somewhat important
- d. Very important
- e. Extremely important

9. How much do you agree or disagree with the following statement: "I could easily change my mind about climate change."

- a. Strongly agree
- b. Somewhat agree
- c. Somewhat disagree
- d. Strongly disagree

10. How many of your friends share your views on climate change?

- a. None
- b. A few
- c. Some
- d. Most
- e. All

11. Which of the following statements comes closest to your view?

- a. Climate change isn't happening.
- b. Humans can't reduce climate change, even if it is happening.
- c. Humans could reduce climate change, but people aren't willing to change their behavior so we're not going to.
- d. Humans could reduce climate change, but it's unclear at this point whether we will do what's needed.
- e. Humans can reduce climate change, and we are going to do so successfully.

12. Do you think citizens themselves should be doing more or less to address climate change?

- a. Much less
- b. Less
- c. Currently doing the right amount
- d. More
- e. Much more

13. Over the past 12 months, how many times have you punished companies that are opposing steps to reduce climate change by NOT buying their products?

- a. Never
- b. Once
- c. A few times (2-3)
- d. Several times (4-5)
- e. Many times (6+)
- f. Don't know

14. Do you think climate change should be a low, medium, high, or very high priority for the President and Congress?

- a. Low
- b. Medium
- c. High
- d. Very high

15. People disagree whether the United States should reduce greenhouse gas emissions on its own, or make reductions only if other countries do too. Which of the following statements comes closest to your own point of view? The United States should reduce its greenhouse gas emissions ...

- a. Regardless of what other countries do
- b. Only if other industrialized countries (such as England, Germany and Japan) reduce their emissions
- c. Only if other industrialized countries and developing countries (such as China, India and Brazil) reduce their emissions
- d. The US should not reduce its emissions
- e. Don't know

16. Which term most accurately describes your political orientation:

- a. Very Liberal
- b. Liberal
- c. Slightly Liberal
- d. Neutral
- e. Slightly Conservative
- f. Conservative
- g. Very Conservative

17. What is the first thought or image that comes to your mind when you think of climate change?

18. Is there one major question about climate change in Southeast Alaska that you would really like to know the answer to?

Nature-Based Tourism Operator Response to Environmental Change in Juneau, Alaska

Coding Guide - ENVIRONMENT

Environmental themes also coded for observatons, present risks, and future risks.

Weather

Fog	Participant shares observations or concerns about fog and impacts to visibility.
Rain	Participant shares observations or concerns about precipitation that falls as rain, quantities or qualities of rain or rain events.
Snow	Participant shares observations or concerns about precipitation that falls as snow, quantities or qualities of snow or snow events.
Summer season	Participant shares information about the summer season generally, such as length, traits, attitudes, experiences, etc.
Temperature	Participant shares observations or concerns about the ambient air temperatures.
Wind	Participant shares observations or concerns related to wind.
Winter season	Participant shares information about the winter season generally, such as length, traits, attitudes, experiences, etc.

Glaciers

Access	Participant describes changes to glaciers that influence access, whether by vehicle, foot, boat, air, or other methods.
Advancing	Participant describes growth or advance of glacier.
Receding	Participant describes recession, shrinking, or thinning of glacier, including changes in terminus location, or makes general comment about the disappearance of glaciers.
Runoff	Participant describes observations or concerns related to glacier runoff, including amounts, timing, or flooding events.
Safety	Participant describes changes to glaciers that influence travel safety, such as crevasses, icefalls, or other safety problems.
Snow	Participant shares observations related to snow or snowcover on glaciers, including the amount, rate of melt, location of ablation zone, or transient snowline, etc.
Tidewater	Participant describes a tidewater glacier, or phenomena related to tidewater glaciers, such as calving or icebergs.

Fish and Wildlife

Fish	Participant makes a general comment about fish, multiple species, or act of fishing.
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Salmon	Participant describes observations or concerns about salmon species, including range, population, habitat health, etc.
Marine Wildlife	Participant shares information related to any non-whale marine mammals, including population, range, access, etc.
Prey species	Participant describes concerns about marine prey abundance or prevalence, including species like herring, krill, etc.
Whales	Participant shares information related to any whale species, including population, range, access, etc.
Terrestrial Wildlife	Participant describes concerns related to deer, bears, or other terrestrial mammals, including population, access, etc.

Water

Estuaries	Participant describes issues related to estuaries, the brackish areas where oceans meet land and freshwater and sea water mixes.
Lakes	Participant describes issues pertaining to lakes, freshwater inland bodies of water that are not flowing.
Ocean Acidification	Participant shares information about ocean acidification, the changing of ocean chemistry due to absorption of CO ₂ .
Ocean Temperatures	Participant shared information about changes in ocean temperature.
Oceans	Participant makes a general comment related to ocean features or characteristics.
Pollution	Participant describes issues generally related to pollution in the ocean, such as oil, trash, or other contaminants.
Sea Level Rise	Participant shares information or concerns about rising sea levels, a process driven by the melt of glaciers and thermal expansion of ocean waters.
Streams	Participant describes issues pertaining to streams, such as flow quantities, peaks, flooding, or characteristics like temperature and sediments.

Other Environment Themes

Fires	Participant makes a comment related to wildland fires.
Forests	Participant shares information related to terrestrial, tree covered landscapes.
Wilderness	Participant shares comments generally about natural character of the landscape.

Social Factors

Crowding	Participant describes issues with conflicting uses or too many users for a particular resource.
Economic	Participant talks about the interactions between economic factors and environmental factors.

Institutional Participant makes a comment that generally pertains to social structures and rules.

Perceptions

Observed	Participant describes environmental characteristics or changes they have encountered or observed.
Future Risk	Participant talks about environmental changes that could be a risk to their operations at some point in the future (near and far future).
Indifferent	Participant talks about changes that have happened or may happen, but that it didn't/doesn't affect them or their operations.
Opportunity	Participant talks about changes that have happened or may happen, and that has or may create an opportunity for them.
Present Risk	Participant describes environmental characteristics or changes they have encountered or observed, that posed some type of a risk that they may or may not have overcome.
Hesitant to Connect	Participant talks about environmental changes, but is hesitant to connect them with "global warming" or "climate change".

Nature-Based Tourism Operator Response to Environmental Change in Juneau, Alaska

Coding Guide - Organization Response

Organization Response

Type of Response Code	Definitions
No response	Participant describes that no response was taken nor is planned. No adaptation goals or efforts.
Unplanned Adaptation	Participant describes an immediate coping measure or an automatic response to a change in a natural or social system. Low effort, limited planning, short range goals.
Planned Adaptation	Participant describes undertaking a deliberate adaptation process that has an identifiable beginning and end, a decision to act and includes an awareness that the conditions have or will change and that action is required to attempt to maintain a given state. High effort, long range goals.

No Response Sub-Codes

No Signal	Participant denies or does not detect a signal that would elicit an adaptation response.
Uncertain	Participant describes feeling uncertain of what will happen, so not responding.
Fatalistic	Participant describes feeling unable to control the situation or being powerless to do anything other than what they do.
Optimistic	Participant describes that they will be able to adapt and that they will just respond, no matter what happens. Confident that they will be able to adapt to whatever happens.
Thresholds	Participant describes a point where, if passed, they would have to adapt or would no longer be able to operate the way that they currently do. May be just environmental or combination of factors.

Unplanned Adaptation Sub-Codes

Coping Measures	Participant describes a specific short-term reaction or response to a given environmental (or socio-environmental) stimulus.
Used to Variability	Participant describes operating under a great deal of variability and they are able to handle issues related to climate change impacts.
System in Place	Participant describes that the current way they operate can handle the issues related to climate change impacts.
Opportunities	Participant describes taking advantage or or looking for new opportunities, to potentially replae those that may no longer exist.
Research / Observe	Participant describes working with researchers, making their own formal or informal observations of the enviornment.

Discussions and Meetings	Participant describes having conversations, meetings, etc. about climate change.
Diversify	Participant describes new business ventures or ways they will diversify when its needed.

Other Response Codes

Used Interchangably	Participant describes the mitigation, conservation, adaptation, and/or environmental stewardship activitied interchagibly.
Other Adaptation / Response	Other comments related to adaptation or response.

Barriers

No Barriers	Participant does not identify any barriers to responding.
Money / Resources	Participant describes being limited by money or resources, such as personnel resources.
Institutional	Participant describes local rules (formal or informal) that inhibit a response.
Information	Participant describes not being able to find the information they need or the information is flawed.
Communication	Participant describes how the communication process, or lack of, presents barriers.
Other Barriers	Other barriers not already identified.

Nature-Based Tourism Operator Response to Environmental Change in Juneau, Alaska

Coding Guide - Information & Communication

Information and Communication Codes

Information	Definitions (Participant describes...)
Sources	the places they tend to go for information.
Ease of Access	
Easy	that its easy to find information about climate change.
Challenging	that its challenging to find information about climate change.
Frequency of Use (Climate Change Information)	
Daily	using climate change (or weather) information daily.
Monthly/Seasonally	using climate change (or weather) information monthly or seasonally.
Annually	using climate change (or weather) information annually.
Never	never using climate change information.
Characteristics	
Characteristics	the types of qualities of the information that make it useful.
Engagement	
Never	never interacting with scientists or research organizations.
Transportation	interacting with scientists or research orgs to provide transportation.
Interact	interacting with scientists or research orgs in general, beyond transportation.
Observations	interacting with scientists or research orgs to help with observations of environmental conditions.
Part of Operations	interacting with scientists or research orgs as part of their tour operations (i.e. citizen science tours).
Negative View of Science	have a negative view of scientists an/ or research orgs.
Subjects of Interest	
Salmon/Oceans/Fish	having questions about how climate change influences salmon, oceans, fish, etc.
Cryosphere	having questions about how climate change influences snow, ice, glaciers, etc.
Weather / Climate	having questions about how climate change influences weather, temp, precip, etc.

General Uncertainty having questions about how climate change in general or general uncertainty.

Visitor Information

Visitor Information describes needing information for their visitors, or describes how often visitors ask about climate change or how they respond.