

Supplemental Material

Perceptions of Obvious and Disruptive Climate Change: Community-Based Risk Assessment for Two Native Villages in Alaska. *Climate* 2015, 3, 812–832

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Table S1. Elements included in each of the broader categories of change.

| Category | Elements of change |
|----------|---|
| Coast | <p>The coastline is not as flat as it used to be</p> <p>Beaches are not as wide as they used to be</p> <p>The size of the grains on the beaches has changed</p> <p>The tundra is breaking off more into the ocean</p> <p>The tundra is breaking off more in to the rivers</p> <p>You can now see melting permafrost along the coast</p> |
| Ice | <p>The sea ice goes out earlier in the spring</p> <p>When it goes out, it goes out faster</p> <p>The sea ice is not as thick as it used to be</p> <p>There is now less shorefast ice</p> <p>There is now less older ice left over from the previous year or years</p> <p>Icebergs don't come here anymore</p> |
| Storms | <p>Storms are stronger now</p> <p>Storms are more dangerous now</p> <p>People are now scared of the storms</p> |
| Tundra | <p>Lakes on the tundra are disappearing now</p> <p>There is less snow on the tundra now</p> |

Table S1. Cont.

| Category | Elements of change |
|-----------------|---|
| Weather | Winters do not last as long as they used to Summers are now longer Fall weather now lasts later into the year It is harder now to know what the weather is going to be like from day to day The weather changes quickly now, it is not consistent The prevailing wind direction has changed The wind now changes more often It is harder now to know what the wind will do from day to day, it is less predictable It rains more now It now rains in the winter It now rains more days in a row |

Questionnaire

**Alaskans Sharing Indigenous Knowledge (AKSIK)
Obvious and Disruptive Climate Change Questionnaire
Summer 2012**



ID: _____

| | | | | | | | | | |
|--------------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |
| | | | | | | | | | |
| Freshwater runoff | | | | | | | | | |
| Sediment | | | | | | | | | |
| Plants | | | | | | | | | |
| | | | | | | | | | |
| Animals | | | | | | | | | |
| | | | | | | | | | |
| Unusual species | | | | | | | | | |
| | | | | | | | | | |
| Fishing | | | | | | | | | |
| | | | | | | | | | |
| Hunting | | | | | | | | | |
| | | | | | | | | | |
| Gathering | | | | | | | | | |
| | | | | | | | | | |

What kind of new or unusual plants, insects, and animals? _____

II. DISRUPTIVE CLIMATE CHANGE

TURN ON RECORDER and STATE SURVEY NUMBER

Question: How disruptive to you are these changes?

Physical changes

**Please put the chips in three categories: High, Medium, Low
Please rank the highest three topics.**

| Physical change | HML | Top 3 |
|------------------------------------|-----|-------|
| Weather less predicable | | |
| Seasons have changed in the length | | |
| Storms more severe | | |
| Sea ice melting faster | | |
| Sea ice types changing | | |
| Rain more often | | |
| Winds have changed | | |
| Ocean currents have changed | | |
| Tides have changed | | |
| Coastline beaches have changed | | |
| Erosion more visible | | |
| Tundra less snow and fewer lakes | | |
| Permafrost melting more | | |
| Freshwater runoff more | | |
| Sediment in new places | | |

- How do the top three affect you in being able to provide for your family?
- How do the top three affect sharing of resources?
- How do the top three affect the roles of the elders in the village?
- How do the top three affect the decision for young people to leave the village?
- Are any of these changes beneficial?

Biological and social changes

1. Please rank the biological changes from highest to lowest and answer the questions below.
2. Please rank the social changes from highest to lowest and then answer the questions below.

| Biological change | Rank |
|--------------------------------------|------|
| Plants new types | |
| Plants getting bigger | |
| Animals migration routes changed | |
| Animals migration times have changed | |
| Unusual animals appearing | |
| Unusual insects appearing | |

| Social change | Rank |
|-------------------------------|------|
| Fishing less predictable | |
| Fishing fewer opportunities | |
| Hunting less predicable | |
| Hunting fewer opportunities | |
| Hunting less safe | |
| Gathering less predictable | |
| Gathering shorter seasons | |
| Gathering fewer opportunities | |

- How do the top three affect you in being able to provide for your family?
- How do the top three affect sharing of resources?
- How do the top three affect the roles of the elders in the village?
- How do the top three affect the decision for young people to leave the village?
- Are any of these changes beneficial?

Overall ranking

Please rank the top five most disruptive changes from all the categories.

| Rank | Change |
|------|--------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

**AKSIK
Questionnaire Script
Summer 2012**

Instructions

Please use the ruler to rank the following statements from 0 (Not Obvious) to 10 (Very Obvious).
Question example. How obvious is it that it will rain today?

**Question: Over the last 20 years or so, how obvious are the following changes?
These statements refer to changes we have read about**

| Topic | Script |
|--------------------------|---|
| Weather | It is harder now to know what the weather is going to be like from day to day The weather changes so quickly, it is not consistent |
| Seasons | Summers are longer Fall weather lasts later into the year Winters do not last as long as they used to |
| Storms | Storms are stronger Storms are more dangerous People are now scared of the storms |
| Sea ice melt | The sea ice goes out earlier in the spring When it does go out, it goes out faster The sea ice is not as thick as it used to be |
| Sea ice type | There is less shorefast ice There is less older ice left over from the previous year or years Icebergs don't come here anymore |
| Rain | It rains more now It now rains in the winter It rains more days in a row |
| Wind | The prevailing wind direction has changed The wind changes often It is harder to know what the wind will do from day to day; it is less predictable |
| Ocean | Ocean currents are moving faster The ocean is getting less salty |
| Tides | The high tides rise higher on land The low tides don't go down as far |
| Coastline | The coastline is not as flat Beaches are not as wide The size of the grains on the beaches have changed |
| Erosion | The tundra is breaking off in to the ocean The tundra is breaking off in to the rivers |
| Tundra | Lakes on the tundra are disappearing Depressions, or holes, are left where lakes once were There is less snow on the tundra |
| Permafrost | You can see melting permafrost along the coast You can see melting permafrost along the rivers You can see melting permafrost out on the tundra |
| Freshwater runoff | There is more freshwater going in to the rivers and ocean |

| | |
|------------------------|--|
| Sediment | There is more sediment going in to the rivers |
| Plants | Some plants are getting bigger Plants are not blooming when they used to New plant types are appearing |
| Animals | Animal migration routes have changed; they don't come the same way Animal migration times have changed, coming at different times of the year Animal migrations are shorter; they appear for shorter periods of time |
| Unusual species | New animals are appearing New insects are appearing |
| Fishing | It is harder to know when fishing will be good It is harder to get out to fish as often |
| Hunting | It is harder to know when hunting will be good It is harder to get out and hunt Hunting conditions are not as safe as before |
| Gathering | It is harder to know when to gather plants It is harder to find the plants we gather Gathering times are shorter |

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