Supplementary Material 1

(Photos shown here are smaller and lower resolution versions of those used in the survey)

Impact photos

Iceberg

Thermometer

Flooding

Cause photos

Volcano

Oil production

Smokestacks

Deforestation

Socio-demographic questions and response options from survey

13. Age
- ☐ 18-24
- ☐ 25-29
- ☐ 30-34
- ☐ 35-39
- ☐ 40-44
- ☐ 45-49
- ☐ 50-54
- ☐ 55-59
- ☐ 60-64
- ☐ 65-69
- ☐ 70-74
- ☐ 75-79
- ☐ 80+

14. Sex
- ☐ Male
- ☐ Female
- ☐ Other

15. Postal code (first 3 digits only)*
- ○ _____
- ○ *Please note that this information cannot be used to identify you, but will help the researchers map out the results from this study.*

16. Highest level of education attained
- ☐ Less than High school
- ☐ High school
- ☐ College
- ☐ College post-graduate certificate
- ☐ University undergraduate
- ☐ University Master's
- ☐ University PhD

17. Highest level of education in a science/environment related subject
- ☐ Less than High school
- ☐ High school
- ☐ College
- ☐ College post-graduate certificate
- ☐ University undergraduate
- ☐ University Master's
- ☐ University PhD

18. Individual income
- ☐ Under $5,000

- ☐ $5,000-$14,999
- ☐ $15,000-$24,999
- ☐ $25,000-$34,999
- ☐ $35,000-$49,999
- ☐ $50,000-$74,999
- ☐ $75,000-$$99,999
- ☐ $100,000+

19. Family income
- ☐ Under $15,000
- ☐ $15,000-$29,999
- ☐ $30,000-$44,999
- ☐ $45,000-$59,999
- ☐ $60,000-$74,999
- ☐ $75,000-$84,999
- ☐ $90,000-$14,999
- ☐ $150,000-$199,999
- ☐ $200,000+

20. Were you born in Canada?
- ☐ Yes
- ☐ No

21. Please indicate which ethnicity you identify with most closely (please choose all that apply):
- ☐ British Isles
- ☐ French
- ☐ Aboriginal
- ☐ Other North American
- ☐ Caribbean
- ☐ Latin, Central and South American
- ☐ European
- ☐ African
- ☐ Arab
- ☐ West Asian
- ☐ South Asian
- ☐ East and Southeast Asian
- ☐ Oceania
- ☐ Other (please specify): _____

22. Political identification
- ☐ Bloc Québécois
- ☐ Conservative Party of Canada
- ☐ Green Party of Canada
- ☐ Liberal Party of Canada
- ☐ New Democratic Party (NDP)
- ☐ None/would not vote
- ☐ Other

23. What religion do you practice?
- ☐ Buddhist
- ☐ Christian

- ☐ Hindu
- ☐ Jewish
- ☐ Muslim
- ☐ Sikh
- ☐ Traditional (Aboriginal) Spirituality)
- ☐ Other Religion
- ☐ None

Coding framework for open ended climate change image association question

Framework based on Leiserowitz [51], who used grounded theory tradition to inductively categorize open-ended imagery responses into dominant categories (themes). Inclusions for this study are presented below alongside the criteria and inclusions defined by [51]. In cases where the inclusion criteria were changed, the updated text is bolded in the "Current Study" column. Otherwise, all inclusion criteria are taken directly from [51].

Category	Leiserowitz (2003)	Current Study
Autos	This category includes all reference to automobiles. For example: • "Motor vehicles." • "Automobile exhaust." • "Large cars and SUV's."	Not applicable
Changing Climate	This category includes any references to changing seasons or climate. For example: • "Changes in climates." • "A lot drier climate." • "The seasons changing." • "Mild winters." • "Summer all year." • "El Niño."	This category includes any references to changing seasons or climate. For example: • "Change in the seasons" • "Climate change" • "Climate changing for the warmer" • "El Nino Niño" • "Warmer winters" • "Warmer winters and colder summers" • "Winters get colder and summers get hotter"
Changing Temperature	This category includes references to general changes in temperature. Note that this is not the same as the category HEAT. HEAT responses indicate a direction (warming) to changes in temperature. This category does not indicate a direction. For example: • "Changes in the temperature." • "The temperature." • "Temperature changes."	This category includes references to general changes in temperature. Note that this is not the same as the category HEAT. HEAT responses indicate a direction (warming) to changes in temperature. **This category includes responses that did not indicate a direction, or responses that indicated both rising and declining temperatures at the same time**. For example: • "Change(s) in temperature" • "Its getting colder or hotter" • "Temperature change" • "Too hot or too cold temperature" • "We have extreme temperatures"
Food	This category includes all references to food and agriculture. For example: • "It's affecting crops." • "Inability to grow crops." • "People falling like flies...scrounging for food."	This category includes all references to food and agriculture. For example: • "Cattle farming" • "Food shortages" • "Struggling farmers"

	• "The dry out of crops and farming...loss of food."	
Disaster	This category refers to a range of responses that explicitly stated negative evaluations of global climate change itself. • "Disaster." • "I think it is a very serious threat." • "The destruction of the environment." • "Bad...bad...bad...like after nuclear war...no vegetation." • "Heat waves, it's gonna kill the world." • Death of the planet."	This category refers to a range of responses that explicitly stated negative evaluations of global climate change itself. For example: • "A barren earth with no life on it" • "Catastrophe" • "Damage cause to the earth is irreparable" • "Deadly" • "Disaster" • "FEAR of the end of the world" • "Nuclear winter" • "The end of the Earth"
Dry/Desert	This category includes all references to drought or a drier climate. For example: • "Loss of water supply." • "Shortage of water." • "Desertification." • "Deserts." • "More arid systems."	This category includes all references to drought or a drier climate. For example: • "A hot, dry, desert where nothing can grow" • "A parched landscape" • "Desert" • "Dried up rivers" • "Drought"
Emotion	This category includes any reference to an emotion felt by the respondent. This does not include negative evaluations of global warming itself, e.g., "Bad...bad...bad...like after nuclear war...no vegetation." Instead this category only includes direct expressions of emotion. For example: • "I worry about it." • "It's kind of scary." • "It makes me afraid." • "I'm worried about that." • "Frightening." "It's a concern."	This category includes any reference to an emotion felt by the respondent. This category only includes direct expressions of emotion. For example: • "Environmental concerns" • "Oh no" • "Sadness" • "Scary/scared"
Flood/ sea level rise	This category includes all references to either flooding or sea level rise. For example: • "Ice melting causing floods." • "High waters." • "Rising ocean levels." • "The danger for cities near the water."	This category includes all references to either flooding or sea level rise. For example: • "Floods" • "Flooded coastlines" • "Flooding of cities" • "Sea level rise/rising sea levels" • "Water rising"
Forests	This category includes all references to trees and forests. For example: • "Brazil cutting all its trees." • "Deforestation." • "Rainforests." • "Not enough trees."	This category includes all references to trees and forests. For example: • "Clear-cut rainforests" • "Forest fires" • "Forests burning"
Fossil Fuels	This category includes all references to fossil fuels. For example: • "Oil refineries." • "fumes of gasoline." • "We need to stop using gasoline."	This category includes all references to fossil fuels. For example: • "Oil exploitation" • "Oil fields" • "Oilsands"

	• "Too much fossil fuels." • "Big oil companies."	
Future Generations	This category includes all references to the consequences of global warming for future generations. For example: • "My son and what it will be like for him to handle." • "That my grandchildren will not have the world like I want it."	This category includes all references to the consequences of global warming for future generations. For example: • "Frightening future for our children and environment" • "I foresee a future where all inhabitants of our Earth are progressively struggling to survive as climate change potentially diminishes the resources needed to thrive…"
Geology	Not applicable	**This category includes all references to geological phenomena. For example:** • "Erosion" • "The entire scope of earths geological history" • "The entire span of the earths existence" • "Ice age"
Global Warming	Not applicable	**This category includes any reference to the term "global warming". For example:** • "Global warming" • "We are in global warming"
Greenhouse	This category includes all references to the greenhouse effect. For example: • "The greenhouse effect." • "CO2." • "greenhouse gases."	This category includes all references to the greenhouse effect. For example: • "Carbon dioxide" • "CO2" • "Greenhouse effect" • "Greenhouse gases" • "Greenhouse gas emissions" • "Greenhouse gases atmosphere diagrams"
Happening	This category includes all assessments that global warming is real and happening. For example: • "It's true." • "It's going to occur." • "It is happening." • "I realize there is global warming." • "I think that it is coming."	Not applicable
Heat	This category includes all references to rising temperatures. For example: • "Becoming hotter." • "Temperature is going to increase." • "Warmer weather."	This category includes all references to rising temperatures. For example: • "Earth getting hotter" • "Extreme heat" • "Hotter weather" • "Rising temperatures" • "Warmer planet"
Human Health	This category includes all references to the impacts of global warming on human health. OASIS respondents provided none, but examples would be	Not applicable

	• "Malaria increase." • "Deaths to heatstroke."	
Icemelt	This category includes all references to melting snow and ice. For example: • "Melting of the ice cap." • "Melting iceberg." • "Glacier ice melting." • "The Arctic melting."	This category includes all references to melting snow and ice. For example: • "Glacier melt" • "Ice caps receding" • "Melting ice in the Arctic" • "Melting polar icecaps" • "Receding glaciers" • "Snow melting" • "Shrinking glaciers"
Industry	This category includes all references to industry, business or the economy. For example: • "Smoke out of factories." • "Greedy corporations." • "Industrial pollution." • "Economic growth and expansion."	This category includes all references to industry, business or the economy. For example: • "Smoke coming out of a large industrial facility"
Info Sources	This category includes all references to sources of information about climate change. For example: • "I heard about that on the TV." • "School." • "The regular nightly news." • "My college class where I learned about it." • "Like the bible says we are supposed to burn up and maybe that is what is happening."	This category includes all references to sources of information about climate change. For example: • "Cowspiracy" • "The day after tomorrow movie" • "Internet" • "Satellite weather images"
Nature	This category includes all references to non-human nature, including general references to the environment, the world, and more specific references to flora, fauna or specific species. For example: • "The end of the world." • "Sick fish." • "Death of the planet." • "Environmental degradation." • "Penguins in Brazil." • "Extinction of some species." • "Mosquitoes."	This category includes all references to non-human nature, including general references to the environment, the world, and more specific references to flora, fauna or specific species. For example: • "A wide view of a mountainous landscape" • "Clouds" • "Earth" • "Environment" • "Environmental degradation" • "Nature" • "Ocean" • "Polar bear(s)" • "Red sky" • "Storm clouds" • "Water"
Need Action	This category includes all references to the need for action. For example: • "We need to do something about it." • "I think we've got to stop using the stuff that causes global warming." • "We'd have to change our way of living."	• Not applicable

	• "Not enough gets done about it." • "What can we do to help?" • "They ought to monitor these big companies a little more." • "We need to replant our trees."	
Ozone	This category includes all responses that associated global warming with stratospheric ozone depletion and the ozone hole. For example: • "Ozone layer." "A hole in the sky." • "Temperatures rising because of the hole in the ozone." • "The ozone layer has a lot to do with the majority of the global warming." • "I don't like it...hair spray is part of it." • "Cancer from UV."	This category includes all responses that associated **climate change** with stratospheric ozone depletion and the ozone hole. For example: • "Ozone" • "Ozone change" • "Ozone layer depletion" • "The ozone layer creating a hole in the sky"
Places	This category includes all references to specific geographic locations. For example: • "Ice in Alaska." • "Brazil cutting all its trees." • "Sunny Florida." • "Tropics." • "Antarctica." • "Los Angeles."	This category includes all references to specific geographic locations. For example: • "Antarctica " • "Arctic" • "Arctic sea ice" • "Brazil rain forest"
Politics	This category includes all references to politics or political figures. For example: • "Al Gore." • "George W. Bush." • "Environmental policy." • "Liberals." • "Political scaring." • "It's a smoke screen for the politicians to do what they damn well please."	This category includes all references to politics or political figures. For example: • "Al Gore " • "Politicians"
Pollution	This category includes all references to pollution. For example: • "Pollution." • "Air pollution from autos." • "Carbon monoxide." • "Exhaust from cars." • "Manufacturing places, spewing particulates up into the air."	This category includes all references to pollution. For example: • "Billowing clouds of smoke from the top of a smokestack" • "City filled with smog" • "Pollution" • "Smog" • "Smokestacks"
Positive	This category includes all responses that evaluate climate change as a good thing. For example: • "I kind of like it." • "Good, just that it's good." • "Bring it on...it's cold, it's winter."	This category includes all responses that evaluate climate change as a good thing. For example: • "Good"
Religion	This category includes all religious references. For example: • "The Lord will take over before it gets too bad." • "Changes according to the scriptures."	Not applicable

	• "Like the bible says we are supposed to burn up and maybe that is what is happening."	
Skeptics	This category includes all responses that indicated a disbelief that climate change is happening or that it is a threat. Skeptics include: • flat denials of the problem ("It doesn't exist"); • belief that global warming is natural ("Natural phenomenon, we can't control it ourselves"); • doubting the science ("Bad science, I don't believe the data can support the hypothesis that the environment is warming"); doubt based on personal experience ("I think it's a myth. I don't think we are having global warming. Summers are getting shorter and winters seem to be getting damper and cooler. It seems to be going the other way") • conspiracy theorizing ("Fraud. Scientists making up some statistics for their job security" "A lot of propaganda on it...I think they try to scare us.").	This category includes all responses that indicated a disbelief that climate change is happening or that it is a threat. For example: • "Bullshit" • "Corruption and lies" • "Hoax" • "Myth" • "Nonsense" • "Nothing to worry about"
Social	Not applicable	This category includes all references to social constructs. For example: • "Dislocation of people" • "Inuit peoples trying to be heard about it's effects" • "Poor" • "Rioters" • "Vegetarians"
Temperature	Not applicable	This category includes all general references to a temperature without an indication of change. For example: • "Cold" • "Heat" • "Hot" • "Warm" • "Heat" • "Thermometer"

Weather	This category includes all references to weather or changes in the weather. For example: • "Bad weather increasing." • "Severe weather." • "Violent storms." • "Tornadoes." • "No snow." • "Changing weather patterns."	This category includes all references to weather or changes in the weather. For example: • "Bad weather" • "Changes in weather patterns" • "Deeper snow" • "More violent weather" • "Severe storms" • "Snow" • "Weather" • "Weather pattern change" • "Weird weather"
Don't know	• "Global warming -- what is that?" • "I've never heard of that."	• "Don't know"
No image	Not applicable	**This category includes any reference to the idea that there is no image that represents climate change. For example:** • "None" • "No single image" • "Nothing" • "NA"
Other	This category includes any responses that don't fit the other categories.	This category includes any responses that don't fit the other categories. For example: • "Change" • "Fire" • "Hockey stick of a graph" • "More water" • "Organic" • "Red meat"

Summary of sample socio-demographics

Variable	N	Category	Rel. frequency per category
Location	680	Alberta	11.3%
		British Colombia	11.0%
		Manitoba	3.1%
		New Brunswick	2.5%
		Newfoundland	2.2%
		Nova Scotia	3.2%
		Ontario	53.4%
		Prince Edward Island	0.4%
		Québec	9.6%
		Saskatchewan	3.2%
Political affiliation	678	Bloc Québécois	1.6%
		Conservative Party of Canada	16.5%
		Green Party of Canada	8.7%
		Liberal Party of Canada	22.0%
		New Democratic Party (NDP)	23.7%
		None/would not vote	19.3%
		Other	8.1%
Age	682	18-24	17.6%
		25-29	13.8%
		30-34	15.2%
		35-39	8.4%
		40-44	10.1%
		45-49	8.9%
		50-54	6.3%
		55-59	11.0%
		60-64	4.1%
		65-69	3.5%
		70-74	1.0%
Sex	681	Female	64.3%
		Male	35.5%
		Other	0.1%
Education	683	Less than high school	2.2%
		High school	23.0%
		College	21.8%
		College post-graduate certificate	11.3%
		University undergraduate	30.7%
		University master's	8.1%
		University PhD	2.9%
Science/ environmental education	683	Less than high school	4.0%
		High school	53.4%
		College	12.2%
		College post-graduate certificate	5.4%
		University undergraduate	20.2%
		University master's	3.2%
		University PhD	1.6%

Religious affiliation	681	Buddhist	2.3%
		Christian	38.3%
		Hindu	1.8%
		Jewish	1.2%
		Muslim	2.1%
		Sikh	0.1%
		Traditional (Aboriginal) spirituality	1.3%
		None	45.4%
		Other religion	7.5%
Born in Canada	682	No	20.6%
		Yes	79.4%
Household income	673	Under $15,000	6.4%
		$15,000-$29,999	13.7%
		$30,000-$59,999	28.5%
		$60,000-$149,999	44.4%
		$150,000+	7.0%
Individual income	677	Under $5,000	13.9%
		$5,00-$14,999	10.9%
		$15,00-$49,999	42.1%
		$50,000-$99,999	27.9%
		$100000+	5.2%