



## Supplement of

# Missing the (tipping) point: the effect of information about climate tipping points on public risk perceptions in Norway

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Survey-Embedded Experimental Treatment (Intervention)

Treatment Condition 1: Text about climate change and climate tipping points (translated from Norwegian)

# Climate scientists warn: If global warming exceeds 1.5 °C, it could trigger more climate tipping points and climate disasters that cannot be undone.

The global average temperature has already increased by 1.1°C due to man-made emissions of greenhouse gases. As a result, extreme weather phenomena have become more frequent and more intense.

The Earth's climate has been relatively stable since the last ice age (the last 10,000 years), which has made it possible for the entire human civilization to develop under predictable conditions. Without a relatively stable climate, both the natural basis we depend on and our own civilization will change.

Many are already experiencing extreme weather; drought, heat waves and floods. Some of the changes we can expect in Norway are more rain, shorter winters/less snow, more frequent landslides and avalanches, problems with importing food and reduced energy security. As the temperature increases, so does the risk of triggering sudden and dramatic "tipping points" in the climate.

A "tipping point" refers to critical thresholds in a system where the system quickly moves into a new state where the development cannot be reversed. Scientists warn that the Earth's climate is now moving towards an unstable state where the risk of such tipping points increases. Since different parts of the climate system are interconnected, triggering one tipping point will increase the likelihood that other tipping points will also be triggered.

Researchers have identified several such tipping points. Some examples of such tipping points are an irreversible meltdown (i.e. a meltdown that cannot be reversed) of the Greenland ice sheet and the Antarctic ice sheet, which will cause the sea level to rise, and the Amazon to "tip over" from rainforest to savannah with large emissions of CO2 and loss of irreplaceable biodiversity. In our immediate areas, a weakening and possible collapse of the Gulf Stream can suddenly produce a much colder climate. If we do not act now and limit the global average temperature, scientists warn that many of these tipping points could be reached. Our choices in the next 5-10 years will have a major impact on whether we and future generations avoid the consequences of the most threatening tipping points.

As of today, a temperature rise of 1.5 °C is expected during the 2030s, but further into the future is uncertain.

# Climate scientists warn: If global warming exceeds 1.5 °C, it will have dramatic consequences.

The global average temperature has already increased by 1.1°C due to man-made emissions of greenhouse gasses. As a result, extreme weather phenomena have become more frequent and more intense.

The Earth's climate has been relatively stable since the last ice age (the last 10,000 years), which has made it possible for the entire human civilization to develop under predictable conditions. Without a relatively stable climate, both the natural basis we depend on, and our own civilization will change.

Some are already experiencing droughts, heat waves and floods. Some of the changes we can expect in Norway are more rain, shorter winters/less snow, more frequent landslides and avalanches, problems with importing food and reduced energy security.

Scientists warn that rising global average temperatures are putting the Earth under increasing pressure. Further temperature increases make it more likely that ecosystems and living conditions will change in the most vulnerable areas, and as climate change accelerates, such changes will affect the entire planet.

Scientists have identified several places that are particularly vulnerable to climate change. Examples of this are the melting of the Greenland ice sheet and the ice sheet in Antarctica, which will cause the sea level to rise. Loss of rainforests such as the Amazon, loss of coral reefs and weakening of ocean currents such as the Gulf Stream are also examples of such "risk areas". If we don't act now and limit the global average temperature, scientists warn that many of these changes will become likely. As of today, a temperature rise of 1.5 °C is expected during the 2030s. So the choices over the next 5-10 years will have great significance both for our own future and for future generations.

Table S1: Survey questions and results for online survey participants per group.

#### Are you a man or a woman?

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Man	50%	51%	49%
Woman	50%	49%	51%
TOTAL	100%	100%	100%

#### Age groups

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Under 30 years	19%	19%	19%
30–39 years	17%	16%	19%
40–49 years	17%	17%	16%
50–59 years	17%	18%	16%
60 years +	30%	30%	31%
TOTAL	100%	100%	100%

### **Participant National Locations**

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Northern Norway	9%	8%	10%
Central Norway	14%	15%	13%
Westland	20%	21%	19%
Eastern Norway	30%	28%	32%
Southern Norway	14%	14%	13%
Oslo	13%	13%	13%
TOTAL	100%	100%	100%

How much do you agree or disagree with the following statements? - The climate crisis is a serious problem

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Completely agree	47%	48%	46%
Quite agree	31%	29%	33%
Neither	12%	14%	11%
Quite disagree	4%	3%	5%
Completely disagree	5%	6%	5%
Do not know	1%	0%	1%
TOTAL	100%	100%	100%

#### q1r2

How much do you agree or disagree with the following statements? - I am personally concerned about the climate crisis

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Completely agree	21%	23%	19%
Quite agree	37%	36%	37%
Neither	23%	22%	24%
Quite disagree	8%	8%	9%
Completely disagree	10%	11%	9%
Do not know	1%	1%	1%
TOTAL	100%	100%	100%

#### q1r3

How much do you agree or disagree with the following statements? - We must act quickly to prevent the most serious consequences of the climate crisis

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Completely agree	39%	39%	39%
Quite agree	32%	33%	31%
Neither	15%	15%	14%
Quite disagree	4%	3%	6%
Completely disagree	8%	8%	8%
Do not know	2%	2%	3%
TOTAL	100%	100%	100%
	•		

#### Q3a

To what extent do you know the term "tipping points in the climate system"?

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Know it well	7%	8%	6%
Know a little about it	21%	21%	22%
Neutral	16%	17%	15%
Don't know much about it	23%	22%	23%
Never heard of it	28%	27%	28%
Not sure/don't know	6%	5%	7%
TOTAL	100%	100%	100%

#### Q3b

Can you give an example of a tipping point in the climate system?

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	372	192	180
Yes	44%	41%	46%
No	56%	59%	54%
TOTAL	100%	100%	100%

#### Assigned Participants to Intervention Text

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Text tipping points	50%	100%	
Text climate	50%		100%
TOTAL	100%	100%	100%

### Q4r1

After reading the information, how much do you agree or disagree with the following statements? - This information is new to me

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Completely agree	5%	7%	3%
Quite agree	17%	20%	14%
Neither	21%	24%	18%
Quite disagree	27%	28%	26%
Completely disagree	29%	21%	36%
Do not know	1%	0%	2%
TOTAL	100%	100%	100%

#### Q5r1

How much do you agree or disagree with the following statements? - The climate crisis is a serious problem

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Completely agree	49%	51%	47%
Quite agree	30%	29%	31%
Neither	10%	10%	11%
Quite disagree	3%	2%	3%
Completely disagree	6%	6%	5%
Do not know	2%	2%	2%
TOTAL	100%	100%	100%

#### Q5r2

How much do you agree or disagree with the following statements? - I am personally concerned about the climate crisis

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Completely agree	28%	32%	25%
Quite agree	30%	29%	30%
Neither	22%	21%	22%
Quite disagree	9%	7%	10%
Completely disagree	10%	11%	10%

Do not know	1%	1%	2%
TOTAL	100%	100%	100%

Q5r3

How much do you agree or disagree with the following statements? - We must act quickly to avoid the most serious consequences of the climate crisis

		Audience	
	TOTAL	Text tipping points	Text climate
BASE	851	424	427
Completely agree	44%	44%	44%
Quite agree	31%	30%	31%
Neither	13%	13%	12%
Quite disagree	4%	4%	5%
Completely disagree	6%	6%	5%
Do not know	3%	2%	3%
TOTAL	100%	100%	100%
Do not know TOTAL	3% 100%	2% 100%	3% 100%

Category	Category	Description	Count
#			
1	No knowledge	Self-reported lack or limitation of	440
		familiarity with climate tipping	
		points.	
2a	Some	Self-reported familiarity with	209
	knowledge	climate tipping points, but answered	
		NO to the question about ability to	
		provide an example OR answered	
		YES to question about ability to	
		provide an example, but did not	
		respond to the prompt to provide an	
		example.	
2b	Some	self-reported familiarity and ability	44
	knowledge, but	to provide an example, but inability	
	incorrect	to provide a correct example of a	
		tipping point or any description	
		(feature) that could be associated	
		with climate tipping points.	
4	Good	Identified one or more correct	109
	knowledge	examples or at least one correct	
		feature of climate tipping processes.	

Table S2. Level of Knowledge on CTPs Amongst Participants

 Table S3. Characteristics of Climate Tipping Points

Theme	Code	Example (from	Count
		Dataset)	
Abruptness/non-	CTP_Abrupt		8
linearity			
Critical Threshold	СТН		13
Irreversibility ; Point of	CTP_Irrevers		46
no return			
Feedbacks ; System	CTP_Feedbk		18
Uncertainty	CTP_Uncerty		1
Severe Impacts ;	CTP_Severe		3
Collapse			
Multiple stable states	CTP_Multistbl		4

CTP Theme	Code	Example	Count
Cryosphere	Cryos		34
components (general)			
Pole Ice	P_Cryos		9
Greenland Ice Sheet	Greenland		8
Arctic Sea Ice	Arcticice		7
Antarctica	Antarctic		0
Permafrost	Permfrost		13
Mountain Glaciers	Mountglac		0
Circulation Patters	Circ_gen		0
(general)			
Ocean Circulation	Ocean_circ		6
Atmosphere	Atmos_circ		1
Circulation			
Biosphere	Bios_com		0
Components			
(General)			
Amazon Rainforest	Amazon		3
Dieback			
Coral Reefs	Coralr		1
Boreal Forests	Boreal		0
West African	WAM		0
Monsoon			
Indian Summer	ISM		0
Monsoon			

Table S4. Climate Tipping Element Examples Identified

Table S5. Other Impacts Identified in Open Ended Responses

Impacts	Code	Example	Count
Sea Level Rise	SLR		7
Deforestation	DF		1
Extreme Weather	XW		3
Ocean Acidification	OH		2
Species Extinction	SE		9

Table S6. Open Ended Answer Data

с	q4boe	Codes	Category
1.	Too late, too late to reduce CO2	CTP_Irrevers ; TL	3
2.	The changes have gone so far that it cannot be healed	CTP_Irrevers	3
3.	Where it has been good so far that there is no going back.	CTP_Irrevers	3
4.	Melting of glaciers and polar regions.	Cryos ; P_Cryos	3
5.	Climate changes from stable to unstable (difficult to predict, more climate stress such as rain, wind, etc.)	CTP_Multistbl ; CTP_Uncerty ; CTP_Severe ; XW	3
6.	When global deforestation reaches a level where green plants have too little capacity to absorb the necessary CO2.	CTP_Feedbk ; HDF	3
7.	Global warming		2b
8.	The Greenland ice sheet is melting	Greenland	3
9.	When it is too late to do something that can stop the climate crisis	CTP_Irrevers ; TL	3
10.	The co2 level has become so high that we cannot reduce it	CTP Irrevers ; COC	3
11.	Melting of tundra resulting in large emissions of stored co2	CTP_Feedbk ; Permfrost	3
12.	Expected upcoming temperature rise beyond what the experts have set as a goal so that it will not be possible to reverse further temperature rise later	CTP_Irrevers ; Temp	3
13.	That the atmosphere has become so polluted that the natural purification processes are unable to correct it.	CTP Irrevers ; Pollut	3
14.	As it is too late to turn around. If the Gulf Stream slows down, we will not be able to prevent it.	CTP_Irrevers ; Ocean_circ ; TL	3
15.	When the permafrost thaws	Permfrost	3
16.	Floods, drought etc	XW	2b
17.	Temperature rise. Increase in the oceans climate destroys crops	SLR	2b
18.	The ice disappears, seas and land absorb more sunlight	Cryos ; CTP_Feedbk	3

19.	Melting of the permafrost. Melting of ice.	Cryos ; Permfrost	3
20.	If the polis in the north melts, the Black Sea	CTP_Feedbk ;	3
	will absorb more radiation from the sun and	P_Cryos	
	prevent the formation of new polis		
21.	Temperature rise		2b
22.	When it is too late, e.g. that the glaciers in	CTP_Irrevers ;	3
	the Arctic have melted	Arcticice	
23.	Ice is melting at sea and on land	Cryos	3
24.	When almost all the ice in the northern	Cryos	3
	regions has melted.		
25.	Arctic and Antarctic, the temperature rise in	Cryos; P_Cryos;	3
	air and water melts the ice caps, eventually	CTP_Abrupt;	
	causing accelerating effects in global	CTP_Irrevers	
	climate. At the tipping point, the process		
	can become irreversible.		
26.	When it is too late to reverse a process	CTP_Irrevers ; TL	3
27.	Npr the development has reached an	CTP_Irrevers	3
	"irreversible point"		
28.	The ice sheet in Greenland	Greenland	3
29.	Methane from thawed permafrost.	Permfrost;	3
		CTP Feedbk	
L		_	
30.	Temperature	_	2b
30. 31.	Temperature When it is too late to do something about a	CTP_Irrevers ; TL	2b 3
30. 31.	Temperature When it is too late to do something about a certain thing	CTP_Irrevers ; TL	2b 3
30. 31. 32.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar ice	CTP_Irrevers ; TL Cryos ; P_Cryos	2b 3 3
30.           31.           32.           33.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turns	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ	2b 3 3 3 3
30.           31.           32.           33.           34.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversed	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ;	2b 3 3 3 3 3
30.         31.         32.         33.         34.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversed	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers	2b 3 3 3 3 3
30.         31.         32.         33.         34.         35.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per year	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers	2b 3 3 3 3 2b
30. 31. 32. 33. 34. 35.	Temperature When it is too late to do something about a certain thing Melting of glaciers/polar ice When the Gulf Stream turns Ice melting that cannot be reversed rise in temperature on average per year	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers	2b 3 3 3 3 2b 2b
30.         31.         32.         33.         34.         35.         36.         27	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees See level	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE SE	2b 3 3 3 3 2b 2b 2b 3
30.         31.         32.         33.         34.         35.         36.         37.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees Sea levelrise aver 1 m due to ice melting	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE SE Temp ; Cryos ; SL	2b         3         3         3         3         2b         2b         3
30.         31.         32.         33.         34.         35.         36.         37.         28	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees Sea level rise over 1 m due to ice meltingWhen the temperature in grasses hy more	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE SE Temp ; Cryos ; SL	2b 3 3 3 3 2b 2b 3 2 2 2 2 2 2 2 2 2 2 2
30.         31.         32.         33.         34.         35.         36.         37.         38.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees Sea level rise over 1 m due to ice meltingWhen the temperature increases by more than 1.5 degrees globally, dramatic about a	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE Temp ; Cryos ; SL Temp ; CTP_Savere	2b         3         3         3         3         2b         2b         3         3         3         3         3         3         3         3
30.         31.         32.         33.         34.         35.         36.         37.         38.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees Sea level rise over 1 m due to ice meltingWhen the temperature increases by more than 1.5 degrees globally, dramatic changes	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE Temp ; Cryos ; SL Temp ; CTP_Severe	2b         3         3         3         3         2b         3         2b         3         3         3         3         3         3         3
30.         31.         32.         33.         34.         35.         36.         37.         38.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees Sea level rise over 1 m due to ice meltingWhen the temperature increases by more than 1.5 degrees globally, dramatic changes will occur2 degrees warming within a certain time	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE Temp ; Cryos ; SL Temp ; CTP_Severe	2b         3         3         3         2b         2b         3         3         3         3         3         3         3         3         2b         3         3         2b         3         2b
30.         31.         32.         33.         34.         35.         36.         37.         38.         39.	<ul> <li>Temperature</li> <li>When it is too late to do something about a certain thing</li> <li>Melting of glaciers/polar ice</li> <li>When the Gulf Stream turns</li> <li>Ice melting that cannot be reversed</li> <li>rise in temperature on average per year</li> <li>Extinction of animal species</li> <li>Temperature rise over 2 degrees Sea level rise over 1 m due to ice melting</li> <li>When the temperature increases by more than 1.5 degrees globally, dramatic changes will occur</li> <li>2 degree warming within a certain time</li> </ul>	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE Temp ; Cryos ; SL Temp ; CTP_Severe Temp ; Time	2b         3         3         3         3         2b         2b         3         3         2b         3         2b         3         2b         2b         3         2b         2b         3         2b         2b         2b         3
30.         31.         32.         33.         34.         35.         36.         37.         38.         39.         40.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees Sea level rise over 1 m due to ice meltingWhen the temperature increases by more than 1.5 degrees globally, dramatic changes will occur2 degree warming within a certain timeThe permafrost melts and releases more	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE Temp ; Cryos ; SL Temp ; CTP_Severe Temp ; Time Permfrost ;	2b         3         3         3         2b         2b         3         2b         3         2b         3         2b         3         3         2b         3         3         3
30.         31.         32.         33.         34.         35.         36.         37.         38.         39.         40.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees Sea level rise over 1 m due to ice meltingWhen the temperature increases by more than 1.5 degrees globally, dramatic changes will occur2 degree warming within a certain timeThe permafrost melts and releases more methane, which causes the temperature to	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE Temp ; Cryos ; SL Temp ; CTP_Severe Temp ; Time Permfrost ; CTP_Feedbk ;	2b         3         3         3         2b         2b         3         2b         3         2b         3         2b         3         3         3         3         3
30.         31.         32.         33.         34.         35.         36.         37.         38.         39.         40.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees Sea level rise over 1 m due to ice meltingWhen the temperature increases by more than 1.5 degrees globally, dramatic changes will occur2 degree warming within a certain timeThe permafrost melts and releases more methane, which causes the temperature to rise and more permafrost to melt, etc.	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE Temp ; Cryos ; SL Temp ; CTP_Severe Temp ; Time Permfrost ; CTP_Feedbk ; Temp ; CTH	2b         3         3         3         2b         2b         3         2b         3         2b         3         2b         3         3         3
30.         31.         32.         33.         34.         35.         36.         37.         38.         39.         40.	TemperatureWhen it is too late to do something about a certain thingMelting of glaciers/polar iceWhen the Gulf Stream turnsIce melting that cannot be reversedrise in temperature on average per yearExtinction of animal speciesTemperature rise over 2 degrees Sea level rise over 1 m due to ice meltingWhen the temperature increases by more than 1.5 degrees globally, dramatic changes will occur2 degree warming within a certain timeThe permafrost melts and releases more methane, which causes the temperature to rise and more permafrost to melt, etc. (Occurs at a temp. threshold)	CTP_Irrevers ; TL Cryos ; P_Cryos Ocean_circ Cryos ; CTP_Irrevers SE Temp ; Cryos ; SL Temp ; CTP_Severe Temp ; Time Permfrost ; CTP_Feedbk ; Temp ; CTH	2b         3         3         3         2b         2b         3         2b         3         2b         3         2b         3         3         3         3

42.	Electric cars JOKE	ST	2b
43.	Thawing permafrost.	Permfrost	3
44.	sea ice e.g. in Artis is disappearing.	Arcticice ;	3
	Permafrost is thawing. The rainy season	Permfrost ; XW	
	changes around Equat5. Drought in, for		
	example, Europe this year, etc.		
45.	The ice sheet in Greenland	Greenland	3
46.	There will soon be more plastic than fish in	Pollut	2b
	the ocean		
47.	The ice sheet near Greenland	Greenland	3
48.	When climate change reaches the point	CTP Irrevers ;	3
	where it is irreversible	СТН	
49.	We are approaching a point where so much	Cryos; P_Cryos;	3
	of the ice at the poles and glaciers has	CTP_Abrupt ;	
	melted that it will affect the process to go	CTP_Feedbk	
	even faster (bare soil and water increase the		
	temperature so the ice melts even faster).		
50.	I think. When a glacier disappears. Or am	Cryos	3
	I Completely in the wrong place?		
51.	When so much of the rainforest has been cut	HDF	2b
	down that it will not be able to rebuild itself.		
52.	An event that happens and cannot be	CTP Irrevers	3
	undone.		
53.	It is too late to do anything. It leads, among	CTP Irrevers ; TL ;	3
	other things, to faster extinction of species,	CTP_Abrupt ; SE	
	which are already suffering due to the		
	nature crisis.		
54.	For example when the permafrost in Siberia	Permfrost ;	3
	disappears, large amounts of CO2 are	CTP_Feedbk	
	released.		-
55.	Like when Al Gore said in 2007 that the	Cryos ; Time ; TL;	3
	North Pole could melt in / years. And we	CTP_Irrevers	
	were already too late to change the climate		
	(as if humans have ever had an impact on		
	the climate). As far as I know there is still		
FC	Ice there	T	01
56.	If we go over 1.5 or 2 degrees warming	Temp	2b
57.	Number of degrees in the sea	Temp	2b
58.	Ice melting continues even if the	CTP Irrevers ;	3
	temperature drops	Cryos	
59.	Increase in temperature in the sea a dying	Temp	2b
	Oslo-fjord		

60.	The amount of CO2 in the atmosphere rises more than the amount that is reduced by	CTP_Feedbk ;	3
	nature		
61.	Ice melting	Cryos	3
62.	Desertification in Spain	XW	2b
63.	Melted tundra releases greenhouse gases	Permfrost ; CTP_Feedbk	3
64.	1,5 degrees	Temp	2b
65.	Melting of ice in the Arctic and Grønland.	Arcticice ; Grnland	3
	Deforestation of rainforest	; Amzon	
66.	The time when the environment is not	CTP_Irrevers ;	3
	reversible	Time	
67.	Point of no return	CTP_Irrevers ;	3
68.	One tipping point is where climate bluffers,	CTP_Irrevers ; TL	3
	so-called scientists, predict that it is too late		
	to turn around. This point moves in step		
	with all the predictions that fail.		
69.	Since there is no going back	CTP_Irrevers	3
70.	The sea ice and glaciers are disappearing	Cryos ; Arcticice	3
71.	global temperature		2b
72.	The 1.5 degree target	Temp	2b
73.	When the average degree is above a certain	Temp	2b
	point		
74.	When the melting of the Poles makes us	P_Cryos;	3
	lose the reflection of radiation and rather the	CTP_Feedbk	
	warming of the sea with increased		
	evaporation and increased warming of the		
	atmosphere		-
75.	Extinct species. Glacier melting. Sea level	SE ; Cryos; SLR	3
76			2
/6.	A tipping point in the Earth's climate system	CTP_Multistbl;	3
	is a mechanism that causes the chinate to	CTD Imposions	
	change from one stable state to another, if	CTP_Inevers,	
	climate change	CIP_Feedbk	
77	When the Earth's climate systems change	CTP Multisthl ·	3
//.	Which in turn affects sea animals plants	CTP Feedbk	5
	and people		
78	That if the average temperature exceeds 2%	CT Irrevers ·	3
70.	from today's level it will be almost	Temn	5
	impossible to return	Tomb	
79	2 degree heating	Temp	2h
79.	2 degree heating	Temp	2b

80.	increase in greenhouse gas emissions		2b
81.	Temperatures fluctuate frequently and with	CTP_Abrupt ;	3
	greater and greater variations	CTP_Multistbl	
82.	The point at which it is not possible to	CTH;	3
	reverse or stop global warming above a	CTP_Irrevers	
	given limit.		
83.	When the temperature of the globe reaches a	Temp; CTH	3
	certain level, we are at the point of no return		
84.	Ice melting in the arctic	Arcticice	3
85.	Melting of the Permafrost	Permfrost	3
86.	Issmelting	Cryos	3
87.	Melting in the Arctic Ocean	P_Cryos	3
88.	Increasing CO2 and methane concentration	CTP_Abrupt ; CTP	3
	in the atmosphere has an accelerating and	Irrevers ; XW ; SE	
	irreversible effect that leads to temperature		
	rise and more extreme weather, extinction		
	of species etc.		
89.	that it gets warm enough to permafrost	Permfrost	3
	tentin		
90.	The tipping point is when you can no longer	CTP_Abrupt ;	3
	stop something, but rather it escalates.	СТН	
91.	When the average temperature is increased	Temp	2b
	by 2 degrees Celsius		
92.	When the sea ice disappears	Arcticice	3
93.	When one passes a certain increase in	Temp	2b
	temperature		
94.	Destruction of rainforests	Amazon	2b
95.	Species are dying out at a rapid rate which	SE;	2b
	can lead to the collapse of the ecosystem	~ ~ .	_
96.	Temperature rise, causes the ice to melt	Cryos ; Ocean_circ	3
	down which leads to changes in ocean		
07	currents etc		2
97.	When the polar ice melts beyond a certain	P_Cryos :	3
0.0	extent, this development cannot be reversed	CIP_Irrevers	2
98.	Melting of glaciers	Cryos	3
99.		CTU	2a
100.	Global warming rises more than what is the		5
101	maximum for what nature can withstand		01
101.	Ocean temperature		26
102	Once certain things have been exceeded	CTP Irrevers	3
102.	there is no turning back	CTH	~
L		1	

103.	F		2a
104.	Melting of the ice	Cryos	3
105.	When the temperature has increased so much that the melting of the ice cannot be stopped and the sea is affected, certain species become extinct and land areas are put under water.	Cryos ; CTP_Irrevers ; SE ; SLR	3
106.	Isbresmelting	Cryos	3
107.	The ice sheet in Greenland, e.g	Greenland	3
108.	Average temperature increase of certain degrees	Temp	2b
109.	I'll tell you when it's me, and it's when the MAGNETIC NORTH POLE has moved over to Siberia - that's where the strongest geomagnetic field is. Early in 2023 we will see if changes happen quickly or slowly, it depends on whether the magnetic pole accelerates or continues at the same speed.		2b
110.	When the ocean has buffered so much CO2 that it is too acidic and cannot absorb any more	ОН	2b
111.	Gets over a threshold value that cannot be reversed.	CTP_Irrevers ; CTH	3
112.	If a glacier is melting and continues to melt/disappear even as it gets colder, it has passed a tipping point.	Cryos ; CTP_Irrevers	3
113.	Smeltibg	Cryos	3
114.	When the sea ice level becomes so low that warming accelerates.	Cryos ; CTP_Abrupt	3
115.	That if you fail to limit emissions to a given level within a given time, there is no going back.	CTP_Irrevers ; Temp ; Time	3
116.	The ocean is saturated with CO2, which causes more to remain in the atmosphere	ОН	2b
117.	When big/abrupt changes happen immediately, if only that the changes happen in such a way that there is nothing to do with the changes and that it is irreversible.	CTP_Abrupt ; CTP_Irrevers; CTP_Severe	3

118.	Bleaching and acidification of coral reefs	Pollut ; Coralr	3
119.	Big change compared to the norm		2b
120.	Animal species are disappearing	SE	2b
121.	When climate change has progressed so far that it is not possible to reverse.	CTP_Irrevers	3
122.	Water rise, ice melting	Cryos ; SLR	3
123.	The point where the temperature change is so great that, according to some researchers, you cannot turn around to avoid the consequences.	CTH ; Temp; CTP_Irrevers	3
124.	A time when not enough has been done to stop the progress of global warming, and nothing can be done to reverse what is going to happen	Time ; CTP_Irrevers	3
125.	ikea		2a
126.	Ice melting in self-reinforcing loop	Cryos ; CTP_Feedbk	3
127.	Acid levels and/or temperatures in ports. Increases above x concentration or degree, then it becomes much more difficult to turn back.	Temp ; CTP_Irrevers	3
128.	When the glaciers in Greenland melt	Greenland	3
129.	That you get to a point where a consequence of the changes has an impact on other systems, and it cannot be taken in again.	CTH ; CTP_Feedbk	3
130.	The ice cap is melting	Cryos	3
131.	CO 2 concentration in the air		2b
132.	When the policy that melts no longer refreezes. When something stops behaving as it previously did.	Cryos ; CTP_Irrevers	3
133.			2a
134.	The deforestation	DF	2b
135.	IN		2a

136.	For example, when the temperature rises so that it destabilises water flows so that they cannot return if the temperature drops again.	CTP_Irrevers ; Ocean_circ	3
137.	Permafrost is thawing. Polis/glaciers are not coming back. The ocean does not absorb more CO2. Loss of biodiversity, which cannot be recovered	Permfrost ; Cryos; CTP_Irrevers : SE	3
138.	Temperatures		2b
139.	A tipping point will be when we reach a certain concentration of co2 in the atmosphere that affects species, potentially exterminating them.	COC; SE	2b
140.	The temperature in the sea rises so much that all the sea ice melts, e.g	Arcticice	3
141.	More extreme weather	Xtreme	2b
142.	Rise of the sea level	SLR	2b
143.	A critical point where the system or soil cannot recover or return to its original state - e.g. a lot of emissions, volcanic eruptions, massive ice melting due to hot summers	CTH ; CTP_Irrevers ; Cryos ; CTP_Feedbk	3
144.	Deforestation in the Amazon has gone so far that the forest is shrinking on its own due to dynamics in the climate system	CTP_Feedbk ; Amzon ; CTP_Irrevers	3
145.	Неу		2a
146.	When the glacier melts so that we get extra heating as a result of a lack of reflection from the sun. The fact that it is getting warmer due to greenhouse effects can get us over a threshold where it is difficult to lower the temperature even if emissions that cause the greenhouse effect are reversed	Cryos ; CTP_Feedbk ; CTH ; CTP Irrevers	3
147.	The 2-degree target	Temp	2b
148.	The Gulf Stream breaks / disappears	Ocean_circ	3
149.	war, terror		2b
150.	When we reach a certain temperature	Temp	2b

151.	Melting of permafrost	Permfrost	3
152.	The poles are melting and the water level is rising	Cryos ; SLR	3
153.	Habitat destruction	HDF	2b
154.	Oil extraction		2b
155.	If one has passed a tipping point, it is no longer possible to naturally return to the previous state. For example, excessive felling of a forest can lead to drying out so that the entire forest eventually disappears.	CTP_Irrevers ; HDF	3
156.	С		2a
157.	When the temperature rises past a certain point, it will be too late to reverse the	Temp ; CTP Irrevers	3
	changes that will occur because of it		
158.	Changes that will occur because of it Changes in oceans and air currents	Ocean_circ ; Atmos_circ	3
158. 159.	Changes that will occur because of it Changes in oceans and air currents If the ice on Greenland or the South Pole melts, the sea level may rise	Ocean_circ ; Atmos_circ SLR; Greenland ; Cryos	3
158. 159. 160.	Changes that will occur because of itChanges in oceans and air currentsIf the ice on Greenland or the South Pole melts, the sea level may riseThe ice at the poles is melting	Ocean_circ ; Atmos_circ SLR; Greenland ; Cryos P_Cryos	3 3 3

Rank	Characteristic	Count	Share of Participants (N = 161) (%)
1	Limited Reversibility	46	28
2	Feedbacks	18	11
3	Critical Threshold	13	8
4	Abruptness/non-linearity	8	4
5	Multiple stable states	4	2

Table S7. Coded Features of Climate Tipping Points Identified by Participants