

**APPENDIX A – Tables and figures**

**Table 1. Summary of Participants’ Demographics**

<b>Political Party</b>	<b>Highest Education Level Attained</b>		<b>Gender</b>		<b>Desire for Children</b>		<b>Religion</b>		<b>Age Groups</b>		<b>American Citizenship Status</b>		
percentage (n = 268)	percentage (n = 269)		percentage (n= 269)		percentage (n=259)		percentage (n=269)		percentage (n=262)		percentage (n=266)		
Democrat	35.1	No high school degree	1.5	Male	41.3	Yes (or already parents)	61.8	Agnostic	8.6	18-29	37.4	Yes	92.1
Green	3.0	High school diploma	8.9	Female	58.7	No	27.8	Atheist	7.1	30-39	15.6	No	7.9
Independent	11.6	Some college, no degree	32.7			Undecided	10.4	Buddhist	1.5	40-49	12.2		
Libertarian	2.2	Associate's degree	13.4					Christian	44.2	50-59	16.8		
None	19.0	Bachelor's degree	19.7							60-69	11.5		
Other	3.7	Master's degree	15.6					Hindu	0.4	70+	6.5		
Republican	14.6	Professional degree	4.1					Jewish	2.6				
Decline to State	10.8	Doctorate	4.1					Muslim	1.5				
								Other	7.1				
								Spiritual but not religious	16.7			Average years in U.S. for non-citizens: 9.5 years	
								Decline to State	10.4				

**Table 2. Percent of participants referencing listed concepts when asked about the causes of climate change (question 3), how to slow climate change (question 5), and how humans cause climate change (question 6)**

(note: percentages do not add to 100 because participants often referenced more than one concept).

<b>Question</b>	<b>The role of GHGs</b>	<b>Large scale human consumptive practices</b>	<b>The consequences of industrialization</b>	<b>Other Emissions</b>	<b>Irresponsible Stewardship of Earth</b>	<b>Climate Change is Natural</b>	<b>Effects as Cause</b>
Causes of climate change	29.3	18.5	55.2	13.0	11.9	10.0	6.3
How to slow climate change	18.9	22.6	26.3	17.4	10.0	0.3	1.8
How humans cause climate change	9.6	30.7	50.7	13.7	18.5	1.1	0.4
	<b>Ozone depletion</b>	<b>Human behaviors that directly affect GHG emissions</b>	<b>Human behaviors that indirectly affect GHG emissions</b>	<b>Climate change is not real</b>	<b>I do not know</b>	<b>Left blank/ Irrelevant Answer</b>	<b>We can't or we do not</b>
Causes of climate change	14.1	N/A	N/A	1.9	10.4	2.6	N/A
How to slow climate change	1.9	30.0	24.8	1.5	9.3	4.8	1.1
How humans cause climate change	2.2	7.4	17.0	2.6	7.0	4.1	0.4

Note: The scoring protocol in Appendix B lists all the individual concepts that are included these groupings. The tone of each grouping is adjusted to fit the question. For example, “the role of GHGs” would be “GHGs cause climate change,” “We need to lessen GHG emissions,” and “Humans emit GHGs, causing climate change” to fit each question. A N/A indicates that that group was not used in coding that question.

**Table 3. Summary of Knowledge Scores (by question and total)**

	<b>Causes</b>	<b>Mechanism</b>	<b>Mitigation</b>	<b>Humanity's Role</b>	<b>GHG Definition</b>	<b>GHG Example</b>	<b>Raw Knowledge Score</b>	<b>Adjusted Knowledge Score</b>
Median	2	0	3	2	0	2	9	6.5
Mean	2.04	0.65	2.20	2.09	0.50	1.41	8.9	6.6

Note: See scoring protocol in Appendix B for how responses were scored.

**Table 5. Percent of participants referencing listed concepts when asked how greenhouse gases work (question 7) and for an example of a greenhouse gas (question 8)**

(note: percentages do not add to 100 because participants sometimes referenced more than one concept).

Question	Gave a correct example of a GHG	I do not know	Left blank	Incorrect explanation/example of GHGs	GHGs depleted the ozone layer
How greenhouse gases work	3.7	48.1	7.8	16.3	6.3
GHG example	37.4	34.4	7.8	7.0	N/A
	<b>GHGs "trapped" heat</b>	<b>GHGs remained in Atmosphere</b>	<b>All GHGs are carbon-based</b>	<b>GHGs are generally dangerous and harmful</b>	<b>Could give a correct source of a GHG</b>
How greenhouse gases work	12.2	3.7	1.1	3.0	N/A
GHG example	N/A	N/A	N/A	N/A	14.1

Note: The scoring protocol in Appendix B lists all the individual concepts that are included these groupings. A N/A indicates that that group was not used in coding that question.

**Table 6. Inter-rater Reliability Analysis**

(Using about a sixth of the data)

Coding System	Cohen's Kappa	Coding System	Cohen's Kappa
Causes Question	0.765		
Mechanism Question	0.736	Greenhouse Gas Definition Question	0.761
Mitigation and Humanity's Role Question	0.646	Greenhouse Gas Example Question	0.809

**Table 7. Summary of Responses to Likert Items** (note: N =270, where percentages do not add to 100 indicates that some participants did not respond to a given question; an \* indicates a reverse coded question)

<b>Policy Preference Issue</b>	<b>Less effort (percent)</b>	<b>Same effort (percent)</b>	<b>More effort (percent)</b>	<b>Mean Likert score</b>
Creating alternative energy programs (e.g., solar or wind power)	4.1	5.9	88.9	4.55
Reducing pollution in the nation's rivers and lakes	1.5	9.3	88.5	4.41
Developing "green" technology	4.8	10.7	84.1	4.36
Creating "green" job programs	8.1	8.5	82.2	4.26
Protecting the ozone layer	5.9	13.0	80.4	4.28
Reducing air pollution in the U.S. (e.g., acid rain)	4.1	16.3	79.6	4.19
Reducing the loss of tropical rainforests	6.3	13.7	78.9	4.23
Maintaining drinkable water	3.0	19.3	77.8	4.18
Reducing America's greenhouse gas emissions	7.8	14.4	77.8	4.21
Protecting plant and animal species from extinction	8.1	15.2	75.2	4.13
Managing urban air pollution (e.g., smog)	5.2	18.9	75.2	4.04
Creating international treaties to limit greenhouse gas emissions worldwide	9.6	16.7	73.7	4.05
Creating more public transportation	5.2	22.6	70.0	4.04
Creating more protected coastal areas	5.9	26.7	64.4	3.95
Developing open space (e.g., for housing or businesses) *	40.0	29.3	28.5	2.87
Encouraging the use of fertilizers to improve agricultural production *	32.2	36.3	27.8	2.89
Lowering government regulation on greenhouse gas emissions *	48.9	22.6	27.0	2.58
Taxing gasoline	41.1	33.0	25.6	2.72
Maintaining economic growth (even at the expense of the environment) *	44.8	29.6	25.2	2.72
Creating more nuclear power plants	53.3	25.9	16.7	2.42

  

<b>Climate Change Beliefs</b>	<b>Disagree</b>	<b>Neither Agree or Disagree</b>	<b>Agree</b>	
I am certain that global warming (i.e., climate change) is actually occurring.	10.7	7.0	80.4	4.22
Human activities are a significant cause of global warming.	12.6	8.9	77.0	4.08

<b>Hypothetical Scenarios of Sacrifice</b>	<b>Would vote against policy</b>	<b>Undecided</b>	<b>Would vote for policy</b>	<b>Mean Likert score</b>
Would you vote for a policy that <i>dramatically</i> reduced greenhouse gas (GHG) emissions AND increased the income tax rate for all Americans by 1%?	17.8	18.9	60.7	3.63
Would you vote for a policy that <i>dramatically</i> reduced GHG emissions AND caused <i>sales taxes</i> in California to increase across the board by 1%?	25.6	21.9	50.0	3.29
Would you vote for a policy that <i>dramatically</i> reduced GHG emissions AND caused the U.S. to decline in relative economic power among the world's countries?	40.0	31.1	26.7	2.73
Would you vote for a policy that <i>dramatically</i> reduced GHG emissions AND doubled the price of gas?	49.6	28.1	19.6	2.49
<b>Feelings about Government, Religion, Evolution</b>		<b>Neither Agree nor Disagree</b>		
	<b>Disagree</b>		<b>Agree</b>	
I am satisfied with San Diego's current environmental policy efforts.	41.9	34.4	19.3	2.64
I trust the federal government.	63.7	17.0	16.3	2.17
I trust San Diego's government	52.2	28.5	15.6	2.37
I am satisfied with the federal government's current environmental policy efforts.	68.1	17.8	11.9	2.13
Human activities are largely responsible for the global warming that is going on now.	13.0	8.1	78.1	4.09
Evolution accurately explains how plants, animals, and humans came to be as they are.	20.0	11.9	66.7	3.77
There exists a supernatural being/deity (e.g., God) or set of beings/deities (gods).	19.6	21.5	57.8	3.69
After death, a person experiences some sort of afterlife (e.g., heaven/hell, nirvana, enlightenment, etc.).	16.3	27.4	55.2	3.67
The United States is one of the very best countries on our planet (e.g., "in the top three").	19.6	24.4	54.8	3.58
Biblical creation accurately explains how plants, animals, and humans came to be as they are.	52.6	15.6	30.7	2.54

**Table 8. Percent of participants choosing major cause, minor cause, or not a cause for given possible causes of climate change** (Notes: accepted responses bolded, N =270, where percentages do not add to 100 indicates that some participants did not respond to a given question)

	Major cause	Minor cause	Not a cause
Emissions from industry or business	<b>77.4</b>	18.1	1.5
Ozone depletion in the upper atmosphere	74.4	15.6	<b>6.7</b>
Deforestation	<b>74.1</b>	17.0	4.8
Use of gas-powered cars	<b>71.1</b>	23.0	3.0
Combustion of Oil	<b>70.0</b>	22.6	3.7
Combustion of Coal	<b>65.2</b>	25.9	4.4
Use of chemical pesticides	47.4	<b>37.0</b>	<b>11.5</b>
Use of aerosol cans	40.0	<b>44.4</b>	<b>12.6</b>
Use of chemical fertilizers	<b>39.6</b>	<b>42.2</b>	13.0
Generation of Nuclear Power	36.7	<b>31.9</b>	<b>27.4</b>
Use of air transportation	<b>35.9</b>	<b>50.7</b>	10.7
Production of livestock	<b>30.0</b>	41.1	25.6
Use of residential heating and cooling	<b>28.1</b>	52.2	15.6

**Table 9. Policy Preference and Adjusted Knowledge Score Correlations** (Bold  $\rho$  values are significant,  $p < 0.05$ , a \* indicates a reverse coded question)

Scale	Pollution Issues	$\rho$ (p-value)	Resources Issues	$\rho$ (p-value)	Climate Issues	$\rho$ (p-value)
Local	Maintaining drinkable water	0.0480 (0.483)	Developing open space (e.g., for housing or businesses) *	-0.0682 (0.288)	Creating more public transportation	0.107 (0.113)
	Managing urban air pollution (e.g., smog)	<b>0.152</b> (0.0211)				
National	Reducing pollution in the nation's rivers and lakes	0.0943 (0.184)	Creating "green" job programs	0.0935 (0.180)	Creating alternative energy programs (e.g., solar or wind power)	<b>0.252</b> ( $<0.001$ )
	Developing "green" technology	<b>0.197</b> (0.00295)	Maintaining economic growth (even at the expense of the environment) *	<b>-0.154</b> (0.0132)	Reducing America's greenhouse gas emissions	<b>0.283</b> ( $<0.001$ )
	Reducing air pollution in the U.S. (e.g., acid rain)	<b>0.147</b> (0.0274)	Creating more protected coastal areas	0.0673 (0.324)	Lowering government regulation on greenhouse gas emissions *	<b>-0.398</b> ( $<0.001$ )
	Encouraging the use of fertilizers to improve agricultural production *	<b>-0.284</b> ( $<0.001$ )				
	Taxing gasoline	<b>0.246</b> ( $<0.001$ )				
	Creating more nuclear power plants	0.0364 (0.588)				
Global			Protecting plant and animal species from extinction	0.0325 (0.636)	Creating international treaties to limit greenhouse gas emissions worldwide	<b>0.261</b> ( $<0.001$ )
	Protecting the ozone layer	0.0850 (0.235)	Reducing the loss of tropical rainforests	<b>0.193</b> (0.00379)		

**Table 10. Adjusted Knowledge score by demographic group** (bold p-values indicate significant difference,  $p < 0.05$ ); groups ordered by decreasing knowledge score

Relationship	Kruskal-Wallis Results	Level	Mean	n
Adjusted Knowledge – Location <sup>1</sup>	Kruskal-Wallis $\chi^2 = 7.143$ , df = 4, p-value = 0.129	Chemistry Class 2	8.23	21
		Balboa Park	6.82	170
		Humanities Class	6.20	27
		Chemistry Class 1	5.93	21
		Santee Lakes	5.30	30
Adjusted Knowledge - Religion	Kruskal-Wallis $\chi^2 = 27.979$ , df = 9, <b>p-value &lt; 0.001</b>	Hindu (only one participant)	11.00	1
		Agnostic	9.80	23
		Atheist	8.79	19
		Decline to state	7.45	28
		Spiritual but not religious	6.97	45
		Other	5.82	19
		Christian	5.68	119
		Jewish	5.07	7
		Buddhist	4.75	4
Muslim	2.63	4		
Adjusted Knowledge – Education Level	Kruskal-Wallis $\chi^2 = 40.618$ , df = 7, <b>p-value &lt; 0.001</b>	Doctorate	11.09	11
		Master's degree	8.47	42
		Professional degree	7.95	11
		Bachelor's degree	7.11	53
		Associate's degree	6.56	36
		Some college, no degree	5.93	88
		High school diploma	2.92	24
No high school diploma	1.75	4		
Adjusted Knowledge – Gender	Kruskal-Wallis $\chi^2 = 0.834$ , df = 1, p-value = 0.361	Male	6.93	111
		Female	6.38	158
Adjusted Knowledge – Desire for Children	Kruskal-Wallis $\chi^2 = 9.788$ , df = 2, <b>p-value = 0.00749</b>	undecided	7.81	27
		no	7.69	72
		yes	5.88	160
Adjusted Knowledge – Age Groups	Kruskal-Wallis $\chi^2 = 7.646$ , df = 5, p-value = 0.177	60-69	7.52	30
		30-39	7.26	41
		18-29	6.94	98
		50-59	6.45	44
		40-49	5.36	32
		70+	4.74	17
Adjusted Knowledge – Political Party	Kruskal-Wallis $\chi^2 = 15.4716$ , df = 7, <b>p-value = 0.03041</b>	Green	12.13	8
		Libertarian	8.17	6
		Democrat	7.05	94
		None	6.61	51
		Other	6.60	10
		Decline to state	6.09	29
		Independent	5.91	31
		Republican	5.06	39

<sup>1</sup> There was one park site where only one participant completed the survey. Though that participant is included in all the other analyses, that data is excluded from analysis based on location surveyed.



**Table 11. Mechanistic Knowledge's Relation to Acceptance of climate change and willingness to sacrifice** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ˆ 0.1); none, low, medium, and high correspond to 0,1,2, and 3 points, respectively, on knowledge question 4

<b>Factor</b>	<b>Kruskal-Wallis <math>\chi^2</math>(df), p-value</b>	<b>Means</b>	
Mechanistic Knowledge score and Belief in <i>Anthropogenic</i> climate change	1.946(3), p=0.584	None	4.00
		Low	4.15
		Medium	4.23
		High	4.28
Polychoric correlation		Rho = 0.114 (p= 0.151)	
Mechanistic Knowledge score and Belief in Climate Change	5.245(3), p =0.155	None	4.09
		Low	4.37
		High	4.40
		Medium	4.59
Polychoric correlation		Rho = 0.172, (p = <b>0.0331*</b> )	
<i>Sacrifice: Increase income tax</i>	5.684(3), p = 0.128	None	3.57
		Low	3.58
		Medium	3.80
		High	4.10
<i>Sacrifice: Double Price of Gas</i>	8.633(3), p=0.0346	Low	2.26
		None	2.46
		High	2.95
		Medium	3.00
<i>Sacrifice: Decrease US's economic standing</i>	1.34(3), p=0.719	Low	2.62
		None	2.75
		Medium	2.85
		High	2.90
<i>Sacrifice: Increase CA's sale tax</i>	6.327(3), p=0.0968	Low	3.14
		None	3.23
		Medium	3.70
		High	3.76

## Ordinal models and linear model estimates

### *Acceptance of Climate Change Model*

**Table 12. Analysis of deviance of ordinal model with certainty in global warming's reality as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1). Note: **bold** values indicate significance,  $p < 0.05$ ; *italicized* values indicate marginal significance,  $p < 0.1$

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Mean	Lm estimate (p-value)
			<b>4.393</b>	<b>(&lt;0.001 ***)</b>
<b>Adjusted Score</b>	<b>7.323 (1)</b>	<b>0.00685 **</b>	<b>slope</b>	<b>0.163 (0.0215*)</b>
<b>Political Party</b>	<b>17.323 (7)</b>	<b>0.0154 *</b>	None	4.211 (0.386)
			Decline	4.145 (0.297)
			Green	4.070 (0.452)
			<b>Independent</b>	<b>3.833 (0.0186*)</b>
			Other	3.833 (0.134)
			<b>Republican</b>	<b>3.765 (0.00387**)</b>
			<i>Libertarian</i>	<i>3.615 (0.0949')</i>
<b>Educational Level</b>	<b>16.711 (7)</b>	<b>0.0194 *</b>	Doctorate	5.085 (0.103)
			Professional	4.926 (0.187)
			<b>Bachelors</b>	<b>4.923 (0.0291*)</b>
			Masters	4.827 (0.0916)
			Some college	4.668 (0.214)
			< High school	4.478 (0.886)
			High school	3.957 (0.148)
<b>American citizenship Y/N</b>	<b>4.002 (1)</b>	<b>0.0455 *</b>	<i>yes</i>	<i>3.904 (0.0593')</i>

## Willingness to sacrifice models

**Table 15. Analysis of deviance of ordinal model with willingness to sacrifice: increase income tax as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
<b>Adjusted Score</b>	<b>3.897 (1)</b>	<b>0.0484 *</b>	<b>slope</b>	<b>2.160 (&lt;0.001 ***)</b>
<b>Political Party</b>	<b>25.407(7)</b>	<b>&lt;0.001***</b>	Green	2.805 (0.0109)
			None	2.2321 (0.688)
			Other	1.927 (0.494)
			<b>Decline</b>	<b>1.704 (0.0416*)</b>
			<b>Independent</b>	<b>1.665 (0.0219*)</b>
			<b>Republican</b>	<b>1.433 (&lt;0.001***)</b>
<b>Satisfaction level with the federal government</b>	<b>13.928(4)</b>	<b>0.00753**</b>	slope	-0.0977 (0.139)
<b>Attitude about anthropogenic CC</b>	<b>48.713(4)</b>	<b>&lt;0.001***</b>	<b>slope</b>	<b>0.430 (&lt;0.001***)</b>

**Table 17. Analysis of deviance of ordinal model with willingness to sacrifice: USA loses economic prominence as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
<b>Age</b>	<b>7.585(1)</b>	<b>0.00589 **</b>	<b>slope</b>	<b>-0.011(0.00865**)</b>
<b>Political Party</b>	<b>14.704(7)</b>	<b>0.0400 *</b>	Green	2.391 (0.696)
			Other	2.3016 (0.830)
			None	2.033 (0.351)
			Decline	1.823 (0.103)
			<i>Independent</i>	<i>1.811 (0.0882')</i>
			<b>Republican</b>	<b>1.433 (&lt;0.001***)</b>
<b>Attitude about anthropogenic CC</b>	<b>32.863 (4)</b>	<b>&lt;0.001 ***</b>	<b>slope</b>	<b>0.297 (&lt;0.001***)</b>

**Table 18. Analysis of deviance of ordinal model with willingness to sacrifice: increase sales tax as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
<b>Adjusted Score</b>	<b>16.694 (1)</b>	<b>&lt;0.001 ***</b>	<b>Score</b>	<b>1.745(&lt;0.001 ***)</b>
<b>Political Party</b>	<b>18.095 (7)</b>	<b>0.0116*</b>	Green	2.109 (0.551)
			None	1.599 (0.461)
			Decline	1.37 (0.129)
			<b>Independent</b>	<b>1.272 (0.0466*)</b>
			<b>Republican</b>	<b>0.991 (&lt;0.001***)</b>
			Libertarian	0.976 (0.104)
<b>Satisfaction level with the federal government</b>	<b>10.802 (4)</b>	<b>0.0289*</b>	slope	-0.120 (0.102)
<b>Attitude about anthropogenic CC</b>	<b>40.695(4)</b>	<b>&lt;0.001***</b>	<b>slope</b>	<b>0.414 (&lt;0.001***)</b>

*Climate change policy issues***Table 20. Analysis of deviance of ordinal model with desire to make policy that creates alternative energy programs as the outcome**

(Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ‘ 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )		Lm estimate (p-value)
			<b>Mean</b>	<b>3.553 (&lt;0.001 ***)</b>
<b>Adjusted Score</b>	<b>4.502 (1)</b>	<b>0.0339 *</b>	<i>slope</i>	<i>0.0753 (0.0917')</i>
<b>Attitude about anthropogenic CC</b>	<b>16.953 (4)</b>	<b>0.00197***</b>	<b>slope</b>	<b>0.234 (&lt;0.001***)</b>
<b>Satisfaction level with the federal government</b>	<b>15.168 (4)</b>	<b>0.00436 **</b>	<i>slope</i>	-0.0371 (0.4165)

**Table 21. Analysis of deviance of ordinal model with desire to create policy that lowers government regulation on greenhouse gas emissions as the outcome (reverse coded\*)**

(Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ‘ 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )		Lm estimate (p-value)
			<b>Mean</b>	<b>3.912 (0.001***)</b>
<b>Adjusted score</b>	<b>21.257 (1)</b>	<b>&lt;0.001 ***</b>	<b>Slope</b>	<b>-0.342 (&lt;0.001***)</b>
<b>Educational Level</b>	<b>18.315 (7)</b>	<b>0.0106 *</b>	Some college	3.927 (0.952)
			High school	3.890 (0.946)
			Bachelors	3.780 (0.623)
			< High school	3.724 (0.771)
			<b>Masters</b>	<b>3.294 (0.0300*)</b>
			<b>Professional</b>	<b>3.033 (0.0375*)</b>
			<b>Doctorate</b>	<b>2.805 (0.0181*)</b>
<i>Attitude about anthropogenic CC</i>	<i>8.426 (4)</i>	<i>0.0772 ‘</i>	<b>slope</b>	<b>-0.143 (0.0283*)</b>

**Table 22. Analysis of deviance of ordinal model with desire to create policy that creates international treaties to reduce GHGs as the outcome (reverse coded)**  
(Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ‘ 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
				<b>2.406 (&lt;0.001***)</b>
<b>Political Party</b>	<b>14.740 (7)</b>	<b>0.0395*</b>	<b>Green</b>	<b>3.140 (0.0378*)</b>
			Republican	2.400 (0.976)
			Libertarian	2.397 (0.982)
			None	2.348 (0.720)
			Decline	2.326 (0.686)
			Independent	2.109 (0.121)
			Other	1.987 (0.169)
<b>Attitude about anthropogenic CC</b>	<b>26.704 (4)</b>	<b>&lt;0.001 ***</b>	<b>slope</b>	<b>0.357 (&lt;0.001***)</b>
<b>Certainty that CC is occurring</b>	<b>12.973 (4)</b>	<b>0.0114 *</b>	<i>slope</i>	<i>0.132 (0.0986‘)</i>
<b>Satisfaction level with federal government</b>	<b>23.599(4)</b>	<b>&lt;0.001 ***</b>	<b>slope</b>	<b>-0.148 (0.0122*)</b>

**Table 23. Analysis of deviance of ordinal model with desire to create policy that creates more public transportation as the outcome**  
(Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ‘ 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
				<b>4.582 (&lt;0.001***)</b>
<b>Satisfaction level with federal government</b>	<b>12.385 (4)</b>	<b>0.0147 *</b>	<b>Slope</b>	<b>-0.150 (0.00979**)</b>
<b>Political Party</b>	<b>24.641 (7)</b>	<b>&lt;0.001 ***</b>	Green	4.776(0.612)
			Decline	4.472 (0.581)
			Libertarian	4.445 (0.715)
			Other	4.314 (0.377)
			<b>None</b>	<b>4.105(0.00393**)</b>
			<b>Independent</b>	<b>3.962(&lt;0.001***)</b>
<b>Educational Level</b>	<b>29.565 (7)</b>	<b>&lt;0.001 ***</b>	<b>Republican</b>	<b>3.839(&lt;0.001***)</b>
			<b>Masters</b>	<b>5.06 (0.0238*)</b>
			<b>Bachelors</b>	<b>4.986 (0.0466*)</b>
			Professional	4.774 (0.575)
			High school	4.576(0.978)
			Doctorate	4.458 (0.692)
			Some college < High school	4.371 (0.244) 4.200 (0.424)

*Resources Policy Issues*

**Table 24. Analysis of deviance of ordinal model with desire to create policy that reduces the loss of tropical rainforests as the outcome**  
 (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 . 0.1)

Factor	Logistic Regression $\chi^2$ (df)	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			<b>Mean</b>	<b>3.383 (&lt;0.001***)</b>
<b>Political Party</b>	<b>33.280(7)</b>	<b>&lt;0.001***</b>	<b>Libertarian</b>	<b>4.259 (0.0220*)</b>
			<i>Green</i>	<i>3.991(0.0850')</i>
			None	3.549 (0.300)
			Republican	3.386 (0.986)
			Decline	3.227 (0.425)
			<b>Independent</b>	<b>2.933(0.0189*)</b>
			<b>Other</b>	<b>2.632 (0.0137*)</b>
<b>Attitude about anthropogenic CC</b>	<b>29.576 (4)</b>	<b>&lt;0.001***</b>	<b>slope</b>	<b>0.290 (&lt;0.001***)</b>
<b>Satisfaction level with federal government</b>	<b>27.374 (4)</b>	<b>&lt;0.001***</b>	<b>slope</b>	<b>-0.138 (0.0186 *)</b>

**Table 25. Analysis of deviance of ordinal model with desire to create policy that develops open space as the outcome**

(Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
				<b>2.349 (&lt;0.001*)</b>
<b>Satisfaction level with federal government</b>	<b>9.677 (4)</b>	<b>0.0462*</b>	<b>Slope</b>	<b>0.160 (0.0300*)</b>
<b>Educational Level</b>	<b>18.874 (7)</b>	<b>0.00859**</b>	< High school	3.22(0.165)
			Doctorate	3.06 (0.0990')
			High school	2.901 (0.0881')
			Bachelors	2.84 (0.0640')
			Professional	2.78 (0.312)
			Masters	2.676 (0.236)
			Some college	2.152 (0.411)

**Table 26. Analysis of deviance of ordinal model with desire to create policy that creates more green jobs programs as the outcome**

(Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
				<b>2.951 (&lt;0.001***)</b>
<b>Satisfaction level with federal government</b>	<b>30.424 (4)</b>	<b>&lt;0.001***</b>	<b>Slope</b>	<b>-0.0852 (0.120)</b>
			Green	3.42 (0.159)
			None	2.843(0.478)
			Decline	2.755 (0.289)
<b>Political Party</b>	<b>17.074 (7)</b>	<b>0.0169 *</b>	Republican	2.678 (0.110)
			Libertarian	2.594 (0.319)
			Other	2.537(0.148)
			<b>Independent</b>	<b>2.443 (0.00549**)</b>
<b>Attitude about anthropogenic CC</b>	<b>49.816 (4)</b>	<b>&lt;0.001 ***</b>	<b>slope</b>	<b>0.403 (&lt;0.001***)</b>

**Table 27. Analysis of deviance of ordinal model with desire to create policy that protects plant and animal species as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2$ (df)	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
Attitude about anthropogenic CC	15.411(4)	0.00392 **	slope	3.005 (<0.001 ***)
Satisfaction level with the federal government	20.514 (4)	<0.001 ***	slope	0.338(<0.001***)
				-0.114 (0.056')

**Table 28. Analysis of deviance of ordinal model with desire to create policy that maintains economic growth the outcome (reverse coded\*)** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2$ (df)	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
Attitude about anthropogenic CC	14.965 (4)	0.00477**	slope	2.904 (<0.001 ***)
Satisfaction level with the federal government	21.390 (4)	<0.001***	slope	-0.170 (0.00461**)
				0.237 (0.00102**)

**Table 29. Analysis of deviance of ordinal model with desire to create policy that protects coastal areas as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2$ (df)	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
American citizenship status	3.237 (1)	0.0720 '	yes	2.557 (<0.001 ***)
Certainty that CC is occurring	22.433 (4)	<0.001 ***	slope	3.0457 (0.0377 *)
Satisfaction with the federal government	13.717(4)	0.00826 **	slope	0.257(<0.001***)
				-0.0689 (0.272)



## Pollution Policy Issues

**Table 30. Analysis of deviance of ordinal model with desire to create policy that maintains drinkable water as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )		Lm estimate (p-value)
			Mean	3.250 (<0.001***)
Age	7.592 (1)	0.00586**	slope	0.00796(0.00655**)
Humans are a significant cause of CC	18.611 (4)	<0.001 ***	slope	0.173 (<0.001***)
Satisfaction with the federal government	19.121 (4)	<0.001 ***	slope	-0.0344 (0.495)

**Table 31. Analysis of deviance of ordinal model with desire to create policy that reduces pollution in rivers and lakes as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )		Lm estimate (p-value)
			Mean	3.766
			Libertarian	4.066(0.319)
			Green	3.933 (0.547)
			Decline	3.7463 (0.945)
<i>Political Party</i>	<i>13.488(7)</i>	<i>0.0611'</i>	None	3.7206(0.730)
			Republican	3.535 (0.107)
			<b>Independent</b>	<b>3.354(0.00919**)</b>
			Other	3.338 (0.0723')
Attitude about anthropogenic CC	12.385 (4)	0.0147 *	slope	0.171 (<0.001***)
Satisfaction level with federal government	23.467 (4)	<0.001 ***	slope	-0.0829 (0.0707')
Age	5.551 (1)	0.0185 *	slope	0.00565 (0.0362*)

**Table 32. Analysis of deviance of ordinal model with desire to create policy that develops green technology as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2$ (df)	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
				<b>3.141 (&lt;0.001 ***)</b>
<b>Attitude about anthropogenic CC</b>	<b>45.041(4)</b>	<b>&lt;0.001 ***</b>	<b>slope</b>	<b>0.349 (&lt;0.001***)</b>
<b>Satisfaction level with the federal government</b>	<b>14.382 (4)</b>	<b>0.00617 **</b>	<b>slope</b>	<b>-0.102 (0.0393*)</b>

**Table 33. Analysis of deviance of ordinal model with desire to create policy that protects the ozone layer as the outcome**  
(Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2$ (df)	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
				<b>2.770 (&lt;0.001***)</b>
<b>Political Party</b>	<b>15.980(7)</b>	<b>0.0253*</b>	<i>Green</i>	<i>3.414(0.0575')</i>
			Libertarian	3.062 (0.417)
			Republican	2.846 (0.660)
			None	2.817(0.754)
			Decline	2.628 (0.444)
			<i>Independent</i>	<i>2.413(0.0516')</i>
			Other	2.368(0.160)
<b>Attitude about anthropogenic CC</b>	<b>62.734 (4)</b>	<b>&lt;0.001***</b>	<b>slope</b>	<b>0.454 (&lt;0.001***)</b>
<i>Satisfaction level with federal government</i>	<i>8.392 (4)</i>	<i>0.0782'</i>	slope	-0.0871 (0.123)
<b>Adjusted Knowledge Score</b>	<b>4.457 (1)</b>	<b>0.0348*</b>	slope	-0.0695 (0.166)

**Table 34. Analysis of deviance of ordinal model with desire to create policy that reduces national air pollution as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 . 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
				<b>3.616 (&lt;0.001***)</b>
<i>Political Party</i>	13.532 (7)	0.0607'	Green	4.056 (0.145)
			Other	3.611 (0.984)
			None	3.55(0.762)
			Libertarian	3.573(0.895)
			Decline	3.450 (0.322)
			Republican	3.372(0.115)
			<b>Independent</b>	<b>3.159 (0.00539**)</b>
<b>Attitude about anthropogenic CC</b>	<b>27.405 (4)</b>	<b>&lt;0.001***</b>	<b>slope</b>	<b>0.227 (&lt;0.001 ***)</b>
<b>Satisfaction level with federal government</b>	<b>13.967 (4)</b>	<b>0.00740* *</b>	<b>slope</b>	<b>-0.100 (0.0446*)</b>

**Table 35. Analysis of deviance of ordinal model with desire to create policy that uses fertilizers to increase agricultural production as the outcome (reverse coded\*)** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 . 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	
				<b>3.969 (&lt;0.001 ***)</b>
<b>Adjusted Knowledge</b>	<b>17.933 (1)</b>	<b>&lt;0.001***</b>	<b>slope</b>	<b>-0.283 (&lt;0.001***)</b>
<b>Age</b>	<b>13.139 (1)</b>	<b>&lt;0.001 ***</b>	<b>slope</b>	<b>-0.0156 (&lt;0.001***)</b>

**Table 36. Analysis of deviance of ordinal model with desire to create policy that taxes gasoline as the outcome**

(Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	<b>1.476(&lt;0.001***)</b>
<b>Political Party</b>	<b>20.630 (7)</b>	<b>0.00436 **</b>	Independent	1.495 (0.380)
			Green	1.164 (0.473)
			Other	1.161 (0.415)
			Decline	1.160 (0.203)
			Libertarian	1.045 (0.380)
			<b>None</b>	<b>0.792 (&lt;0.001***)</b>
			<b>Republican</b>	<b>0.657 (&lt;0.001***)</b>
<b>Attitude about anthropogenic CC</b>	<b>25.434 (4)</b>	<b>&lt;0.001 ***</b>	slope	<b>0.303 (&lt;0.001***)</b>
<b>Adjusted knowledge</b>	<b>8.653 (1)</b>	<b>0.00326**</b>	slope	<b>0.194(0.00406**)</b>

**Table 37. Analysis of deviance of ordinal model with desire to create policy that manages urban air pollution as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	<b>2.797 (&lt;0.001 ***)</b>
<i>American citizenship status</i>	<i>3.375 (1)</i>	<i>0.0662 '</i>	yes	<b>3.228 (0.0376 *)</b>
<b>Certainty that climate change is occurring</b>	<b>26.794 (4)</b>	<b>&lt;0.001 ***</b>	slope	<b>0.231(&lt;0.001***)</b>
<b>Satisfaction with the federal government</b>	<b>16.072 (4)</b>	<b>0.00293 **</b>	slope	-0.056 (0.311)

**Table 38. Analysis of deviance of ordinal model with desire to create policy that creates more nuclear power plants as the outcome** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Lm estimate (p-value)	
			Mean	<b>3.592 (&lt;0.001 ***)</b>
<i>Adjusted Knowledge</i>	<i>2.917 (1)</i>	<i>0.0877 '</i>	slope	<i>0.127 (0.062')</i>
<b>Certainty that CC is occurring</b>	<b>27.014 (4)</b>	<b>&lt;0.001***</b>	slope	<b>-0.327 (&lt;0.001***)</b>

## Models which include RTMD constructs

**Table 39. Analysis of deviance of ordinal model with belief in global warming's reality as the outcome + RTMD constructs** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Mean	Lm estimate (p-value)
			<b>4.407</b> (<0.001***)	
<b>American Y/N</b>	<b>5.713 (1)</b>	<b>0.0168*</b>	<b>yes</b>	<b>3.850 (0.0287*)</b>
<b>Educational Level</b>	<b>20.354 (7)</b>	<b>0.00485**</b>	<i>Doctorate</i>	<i>5.138 (0.0678')</i>
			Professional	5.006 (0.123)
			<b>Bachelors</b>	<b>4.950 (0.0210*)</b>
			<b>Masters</b>	<b>4.910 (0.0412*)</b>
			Some college	4.752(0.108)
			< High school	4.296 (0.844)
			High school	4.050 (0.211)
<b>Evolution</b>	<b>9.510(4)</b>	<b>0.0495*</b>	<b>slope</b>	<b>0.154 (0.00852**)</b>
<b>Creation</b>	<b>11.935(4)</b>	<b>0.0178*</b>	<b>slope</b>	<b>-0.137 (0.00755**)</b>
<i>Political Party</i>	<i>12.530 (7)</i>	<i>0.0844'</i>	None	4.187 (0.252)
			Decline	4.179 (0.317)
			Green	4.137 (0.503)
			Other	4.041(0.315)
			Independent	4.023 (0.104)
			<b>Republican</b>	<b>3.934 (0.0238*)</b>
			Libertarian	3.810 (0.181)

**Table 40. Analysis of deviance of ordinal model with belief in anthropogenic global warming as the outcome+ RTMD constructs** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ' 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )	Mean	Lm estimate (p-value)
				<b>2.959</b> (<0.001***)
<b>Gender</b>	<b>4.205 (1)</b>	<b>0.0403*</b>	<b>male</b>	<b>2.683 (0.00912**)</b>
<b>Educational Level</b>	<b>14.087 (7)</b>	<b>0.0497*</b>	<i>Doctorate</i>	<i>3.743 (0.0575')</i>
			Professional	3.573 (0.114)
			< High school	3.522 (0.350)
			<b>Masters</b>	<b>3.521 (0.0305*)</b>
			Bachelors	3.361 (0.103)
			Some college	3.216 (0.256)
			High school	2.823 (0.656)
<b>Evolution</b>	<b>20.207 (4)</b>	<b>&lt;0.001***</b>	<b>slope</b>	<b>0.217(&lt;0.001***)</b>
<i>Adjusted score</i>	<i>3.0340 (1)</i>	<i>0.0815'</i>	slope	0.0946 (0.179)

**Table 41. Analysis of deviance of ordinal model with mechanistic knowledge score (knowledge question 4) as the outcome + RTMD constructs** (Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05 ‘ 0.1)

Factor	Logistic Regression $\chi^2(df)$	Pr(> $\chi^2$ )		Lm estimate (p-value)
			Mean	<b>1.116 (&lt;0.001***)</b>
<b>Gender</b>	<b>10.464(1)</b>	<b>0.00121**</b>	male	1.497 (<0.001***)
<b>Educational Level</b>	<b>16.042 (7)</b>	<b>0.0247*</b>	<b>Doctorate</b>	<b>1.829 (0.0182*)</b>
			<i>Professional</i>	<i>1.682 (0.0626')</i>
			<i>Masters</i>	<i>1.453 (0.0940')</i>
			Bachelors	1.180 (0.738)
			Some college	1.0263 (0.609)
			High school	0.938 (0.451)
			< High school	0.612 (0.274)
<b>Age</b>	<b>7.605(1)</b>	<b>0.00582**</b>	<b>slope</b>	<b>-0.00888 (0.00734**)</b>
<b>Creation</b>	<b>15.086 (4)</b>	<b>0.00453**</b>	<b>slope</b>	<b>-0.126 (&lt;0.001***)</b>

**Table 42. RTMD Pearson's correlation matrix** (upper right half = r values; lower left half = p-values)

	Evolution	GW	Nationalism	Deity	Afterlife	Creation
Evolution	1	0.401	-0.105	-0.396	-0.339	-0.514
GW	<b>&lt;0.001</b>	1	-0.0663	-0.214	-0.187	-0.298
Nationalism	<i>0.0792</i>	0.233	1	0.279	0.263	0.272
Deity	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1	0.713	0.589
Afterlife	<b>&lt;0.001</b>	<b>0.00315</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1	0.474
Creation	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1

Note: controlled for American citizens or non-citizens who had resided in the US for 10+ years.

### APPENDIX B – Scoring protocol

(Note: interrater reliability was conducted on the *concept group level*, italicized and underlined)

In response to Question 3: “Regardless of whether *you* believe that global warming is occurring, what do scientists (who think that global warming is occurring) believe causes global warming?”

<b>3 Points</b>	Correct scientific explanations of major causes of global warming	Idealized example
	<u><i>The Role of Carbon/Greenhouse Gas Emissions</i></u>	
	Carbon emissions, greenhouse gases	“Carbon emissions,” “our carbon footprint” “GHGs”
	The greenhouse effect	“The greenhouse effect causes global warming”
	<u><i>Large Scale Human Consumptive Practices that Emit GHGs</i></u>	
	Livestock or agriculture	“Raising cattle” “using fertilizers for agriculture”
	Deforestation	“cutting down trees” “killing the rainforest”
Fossil fuel usage	“Burning fossil fuels causes global warming”	
<b>2 Points</b>	More vague or general responses than those listed above	Idealized example
	<u><i>Humans’ Irresponsible Stewardship of Earth</i></u>	
	Natural resources overused/ over developed.	“We are using too many natural resources”
	Human failure to preserve	“We are abusing the environment”
	Overpopulation	“There are too many people”
	<u><i>The Consequences of Modern Industrialization</i></u>	
	Production, industry, factories, power plants	“Human industry”
	Human behaviors (e.g., driving/cars)	“We drive too many cars”
	Pollution/human waste (does <i>not</i> list a specific gas)	“smog” “air pollution”
	<u><i>Other Emissions</i></u> (compare with “carbon emissions/GHG” category above)	
	Aerosols, chemicals	“Chemicals in the air” “pesticides”
General emissions	“gas emissions” “car emissions”	
<b>1 Point</b>	<u><i>Climate Change is at least partially natural</i></u>	
	Natural processes – implies that global warming is at least partially not related to humans.	“The natural cycles of the earth cause global warming” “It is a natural and normal change”
	<u><i>Effects as Cause</i></u>	
	Effects as cause- warmer oceans, El Nino.	“the oceans are warmer and that causes global warming”
<b>0 Points</b>	Incorrect or Incomplete Responses	
	<u><i>Misconceptions</i></u>	
	Ozone depletion	“The ozone hole causes global warming”
	Nonresponsive	
	<u><i>Don’t care, fake, not a threat</i></u>	“Global warming isn’t real, so nothing causes it”
	<u><i>I don’t know</i></u>	
<u><i>Left Blank/ Completely Irrelevant Answer</i></u>		

In response to Question 4: “How is global warming supposed to work (according to scientists who think that global warming is occurring)? That is, what is the basic physical, chemical, or biological mechanism of global warming?” Combine codes above with mechanism codes (a-i) below. To get a-i, however, the response has to be mechanistic somehow – not just a list of causes. Many responses just listed causes, and so only get credit for the causes, not the mechanism.

label	Definition	Examples	Points
<u>Complete Mechanism</u>			
<b>a</b>	Something is trapping heat → gets combined with codes above	“GHGs are trapping heat from the sun.”	<b>3 Points: a referenced with GHG/carbon emissions, deforestation, agriculture, or fossil fuel use</b>
<u>Energy Differentiation</u>			
<b>e</b>	Energy differentiation attempt. Has to imply that some type of energy is leaving surface of earth (not just coming in).	“Visible light gets absorbed by earth, and is emitted as infrared light. GHGs absorb infrared light, causing warming”	<b>2 bonus points</b>
<u>Something is trapping heat, but not as complete as above</u>			
<b>a</b>	Something is trapping heat → gets combined with codes above	“Car emissions are trapping heat from the sun.”	<b>2 Points: a, a referenced with general emissions, general human activities, or pollution</b>
<u>GHGs augment heat, but no reference as to HOW</u>			
<b>c</b>	GHGs augmenting heat on own – no explanation of how GHGs trap heat. Augment GHG level or make a layer, temps increase	“There is a layer of GHGs that is making it hotter”	<b>2 Points: c with GHG/carbon emissions</b>
<u>Tangential Mechanism</u>			
<b>f</b>	Loss of x → heat increase. Combined with above.	“We are losing too many trees and this causes temps to go up”	<b>1 point: f with deforestation or effects</b>
<b>i</b>	Something is wrong with the atmosphere. Vague and holistic.	“The earth cannot handle all the gases we emit, causing temperatures to go up”	<b>1 point: i with anything</b>
<u>Causes as Mechanism</u>			
	Must be alone and not a mechanistic explanation: Just a cause.	“GHGs cause global warming”	<b>1 point</b>
<u>No Mechanism Given, but acknowledges change</u>			
<b>d</b>	Temperature increasing – vague – often in conjunction with effects	“Temperatures are rising, causing melting glaciers and more hurricanes”	<b>0 points: d with anything</b>
<b>h</b>	Just changing on its own, natural	“The environment is changing, causing global warming”	<b>0 Points: h with anything</b>
<u>Mechanism with Misconception</u>			
<b>b</b>	A hole in the atmosphere/ozone is letting heat/energy/light, etc. in or out → gets combined with codes above	“A hole in the ozone is letting too much energy in”	<b>0 Points: b, b with anything</b>
<u>Non Responsive</u>			
	<u>I don't know,</u>		<b>0 points</b>
	<u>I don't care, I don't think it's real</u>		
	<u>Left Blank/ Irrelevant answer</u>		



In response to: 5) “What can be done to slow global warming, according to those who believe that it is occurring?”

And 6) “How are humans, if at all, believed to contribute to global warming?”

For Question 5: Adjust tone of codes below to “Reduce x.” E.g., “We must reduce GHG emissions” would be the GHG code in Question 5.

For Question 6: Adjust tone of codes below to “We do x” E.g., “we produce GHGs” would be the GHG code in question 6.

<b>3 Points</b>	Correct scientific explanations of how to slow global warming	Idealized example
	<u><i>The Role of Carbon/Greenhouse Gas Emissions</i></u>	
	Carbon/gas emissions, GHGs	“Carbon emissions,” “our carbon footprint” “GHGs”
	<u><i>Large Scale Human Consumptive Practices that Emit GHGs</i></u>	
	Deforestation	“cutting down trees” “killing the rainforest”
	Livestock/agriculture	“Raising cattle” “using “fertilizers for agriculture”
	Fossil Fuel Usage	“Burning fossil fuels causes global warming”
	<u><i>Human behavior that directly influence climate change</i></u>	
	Use Alternative/green transportation or Alternative/ green energy technology	“we need to find new ways to produce energy”
	Lower energy use/consumption	“We must lower our energy use at home”
Carbon abatement	“We should sequester carbon”	

<b>2 points</b>	Mostly correct scientific explanations of how to slow global warming	Idealized example
	<u><i>The Consequences of Modern Industrialization</i></u>	
	Human activities	“We drive too many cars”
	Human industry, electricity, factories, power plants.	“businesses”
	Pollution/human waste	“smog”/ “air pollution”
	<u><i>Other Emissions</i></u> (compare with “carbon emissions/GHG” category above)	
	Aerosols, chemicals, cfc's	“Chemicals in the air” “CFCs”
	General emissions	“gas emissions”
	<u><i>Humans' Irresponsible Stewardship of Earth</i></u>	
	Natural resources overused/ over developed.	“We are using too many natural resources”
	Human failure to preserve.	“We are abusing the environment”
	Overpopulation	“There are too many people”
	<u><i>General Human Behaviors that can Indirectly Influence Climate Change</i></u>	
	General green/ecofriendly	“We need to go green”
	Increase governmental regulation, policy	“The government needs to have stricter regulations”
	Recycle etc.	“People must reduce, reuse, and recycle”
	Lower consumption, waste, litter	“We must use fewer products”
	Education	“People need to learn about the causes”

<b>1 Point</b>	Other explanations to slow climate change vague or general	Idealized Examples
	<i>Change Natural processes</i> – implies that global warming is at least partially not related to humans.	“The natural cycles of the earth cause global warming”
	<i>Effects as Cause</i> Change effects as cause- warmer oceans, el Nino.	“the oceans are warmer and that causes global warming”
	Slow down causes (useless answer)	“We have to slow down the causes”

<b>0 Points</b>	Misconceptions	
	<i>Ozone depletion</i>	“The ozone hole causes global warming”
	<i>Don't care, fake, not a threat</i>	“Global warming isn't real, so nothing causes it”
	<i>We can't</i>	“It is too late”
	Nonresponsive	
	<i>I don't know</i>	“I don't know”
	<i>Left blank/ Completely Irrelevant Answer</i>	

New coding scheme for Greenhouse gas questions 7) “What distinguishes a greenhouse gas from other types of gases in our atmosphere?” And 8) “What is an example of a greenhouse gas?”

Greenhouse gases do/are/make ... etc.		
<i>Correct Explanation</i>		
<b>3 Points</b>	Trap heat/cause insulation/ solar energy retention.	“Greenhouse gases absorb heat” or “GHGs stop heat from leaving earth”
<i>Correct Source</i>		
<b>2 Points</b>	Gas/fuel/car emissions	“GHGs come from gas emissions”
<i>Partially Correct Explanation</i>		
<b>2 Points</b>	Generally harmful/raise temp	“GHGs raise the earth's temperature”
<i>Correct Example</i> (note: in q7, a correct example of a GHG falls into the partially incorrect overarching category, while in q8 it falls into the correct overarching category)		
<b>In q7: 1 point In q8: 3 Points</b>	Gives at least one correct example of GHG	CO <sub>2</sub> , Methane, CO, Ozone, CFCs NOT oxygen, nitrogen, etc.
<i>Partially Incorrect Chemical Explanations</i>		
<b>1 Point</b>	Stay in atmosphere	“GHGs remain in the atmosphere longer”
	Carbon-based	“GHGs are carbon based”
<b>0 Points</b>	<i>Misconceptions</i>	
	Not natural/human origin	“GHGs are not naturally in our atmosphere”
	Something to do with plants	“GHGs come from photosynthesis”
	Other wrong explanation	“GHGs are not harmful”
	<i>Ozone Misconception</i>	
	Affect ozone	“Greenhouse gases destroy the ozone”
	Non responsive	
	<i>I don't know</i>	“I don't know”
	<i>Left Blank/ Completely Irrelevant Answer</i>	

### APPENDIX C- List of survey questions

<b>How much effort do you think the federal government should put into addressing the issues below?</b>					
<b>(please circle your response)</b>	A lot less	Moderately less	About the same	Moderately more	A lot more
Maintaining drinkable water	1	2	3	4	5
Reducing pollution in the nation's rivers and lakes	1	2	3	4	5
Developing open space (e.g., for housing or businesses)	1	2	3	4	5
Creating international treaties to limit greenhouse gas emissions worldwide	1	2	3	4	5
Reducing the loss of tropical rainforests	1	2	3	4	5
Creating alternative energy programs (e.g., solar or wind power)	1	2	3	4	5
Reducing America's greenhouse gas emissions	1	2	3	4	5
Developing "green" technology	1	2	3	4	5
Creating "green" job programs	1	2	3	4	5
Protecting the ozone layer	1	2	3	4	5
Maintaining economic growth (even at the expense of the environment)	1	2	3	4	5
Reducing air pollution in the U.S. (e.g., acid rain)	1	2	3	4	5
Protecting plant and animal species from extinction	1	2	3	4	5
Lowering government regulation on greenhouse gas emissions	1	2	3	4	5
Creating more public transportation	1	2	3	4	5
Encouraging the use of fertilizers to improve agricultural production	1	2	3	4	5
Creating more protected coastal areas	1	2	3	4	5
Taxing gasoline	1	2	3	4	5
Managing urban air pollution (e.g., smog)	1	2	3	4	5
Creating more nuclear power plants	1	2	3	4	5

**Please circle whether you agree or disagree with the following statements:**

1) I am certain that global warming (i.e., climate change) is actually occurring.

1	2	3	4	5
Strongly Disagree	Mildly Disagree	Neither Agree Nor Disagree	Mildly Agree	Strongly Agree

2) Human activities are a significant cause of global warming.

1	2	3	4	5
Strongly Disagree	Mildly Disagree	Neither Agree Nor Disagree	Mildly Agree	Strongly Agree

**Please answer the following questions in about 3 sentences: (If unsure, please guess or write "I don't know.")**

3) Regardless of whether *you* believe that global warming is occurring, what do scientists (who think that global warming is occurring) believe causes global warming?

4) How is global warming supposed to work (according to scientists who think that global warming is occurring)? That is, what is the basic physical, chemical, or biological mechanism of global warming?

5) What can be done to slow global warming, according to those who believe that it is occurring?

6) How are humans, if at all, believed to contribute to global warming?

7) What distinguishes a greenhouse gas from other types of gases in our atmosphere?

6) What is an example of a greenhouse gas? \_\_\_\_\_

<b>Please rate whether the following actions cause global warming:</b>	Not a cause	Minor cause	Major cause
Emissions from industry or business	1	2	3
Use of chemical pesticides	1	2	3
Combustion of oil	1	2	3
Using aerosol spray cans	1	2	3
Using residential heating or cooling	1	2	3
Use of chemical fertilizers	1	2	3
Combustion of coal	1	2	3
Deforestation	1	2	3
Emissions from livestock	1	2	3
The generation of power in nuclear power plants	1	2	3
Use of air transportation	1	2	3
Depletion of the ozone layer in the upper atmosphere	1	2	3
Driving gasoline-powered cars	1	2	3

<b>Please rate your opinions about the following hypothetical scenarios:</b>	Definitely vote against	Probably vote against	Undecided	Probably vote for	Definitely vote for
Would you vote for a policy that <i>dramatically</i> reduced greenhouse gas (GHG) emissions AND increased the income tax rate for all Americans by <b>1%</b> ?	1	2	3	4	5
Would you vote for a policy that <i>dramatically</i> reduced GHG emissions AND doubled the price of gas?	1	2	3	4	5
Would you vote for a policy that <i>dramatically</i> reduced GHG emissions AND caused the U.S. to decline in relative economic power among the world's countries?	1	2	3	4	5
Would you vote for a policy that <i>dramatically</i> reduced GHG emissions AND caused <i>sales taxes</i> in California to increase across the board by <b>1%</b> ?	1	2	3	4	5

<b>Please consider whether you agree or disagree with the following statements:</b>	Strongly disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Strongly agree
I am satisfied with the federal government's current environmental policy efforts.	1	2	3	4	5
I am satisfied with San Diego's current environmental policy efforts.	1	2	3	4	5
I trust the federal government.	1	2	3	4	5
I trust San Diego's government.	1	2	3	4	5

**Please consider whether you agree or disagree with the following statements:**

- 1) Evolution accurately explains how plants, animals, and humans came to be as they are.  
 1                                      2                                      3                                      4                                      5  
 Strongly Disagree      Mildly Disagree      Neither Agree Nor Disagree      Mildly Agree      Strongly Agree
- 2) Human activities are largely responsible for the global warming that is going on now.  
 1                                      2                                      3                                      4                                      5  
 Strongly Disagree      Mildly Disagree      Neither Agree Nor Disagree      Mildly Agree      Strongly Agree
- 3) The United States is one of the very best countries on our planet (e.g., “in the top three”).  
 1                                      2                                      3                                      4                                      5  
 Strongly Disagree      Mildly Disagree      Neither Agree Nor Disagree      Mildly Agree      Strongly Agree
- 4) There exists a supernatural being/deity (e.g., God) or set of beings/deities (gods).  
 1                                      2                                      3                                      4                                      5  
 Strongly Disagree      Mildly Disagree      Neither Agree Nor Disagree      Mildly Agree      Strongly Agree
- 5) After death, a person experiences some sort of afterlife (e.g., heaven/hell, nirvana, enlightenment, etc.).  
 1                                      2                                      3                                      4                                      5  
 Strongly Disagree      Mildly Disagree      Neither Agree Nor Disagree      Mildly Agree      Strongly Agree
- 6) Biblical creation accurately explains how plants, animals, and humans came to be as they are.  
 1                                      2                                      3                                      4                                      5  
 Strongly Disagree      Mildly Disagree      Neither Agree Nor Disagree      Mildly Agree      Strongly Agree

**Please specify your political party affiliation:**

1. None                                      4. Independent                                      7. Other (please specify): \_\_\_\_\_  
 2. Democrat                                      5. Libertarian                                      8. Decline to state  
 3. Green                                      6. Republican

**Please specify your highest educational level:**

1. No high school diploma                                      5. Bachelor’s Degree  
 2. High school diploma                                      6. Master’s Degree  
 3. Some college, no degree                                      7. Professional Degree  
 4. Associate’s Degree                                      8. Doctorate

**Please specify your gender:** M or F                                      **Please specify the zip code in which you live:** \_\_\_\_\_

**Are you an American citizen?** Yes or No

**If not an American citizen, how many years have you resided in the United States?** \_\_\_\_\_

**Please specify your age in years:** \_\_\_\_\_

**Do you have children or are planning to have children (please circle response)? (Yes / No / Undecided)**

**What is your main religious faith, if you had to pick one?**

1. Atheist                                      5. Hindu                                      9. Other (please specify): \_\_\_\_\_  
 2. Agnostic                                      6. Jewish                                      10. Decline to state  
 3. Buddhist                                      7. Muslim  
 4. Christian                                      8. Spiritual but not religious