Climate Change and The Public

Leigh Bernacchi
lbernacchi@uidaho.edu

Warm up:

• Why does it matter whether the public cares about climate change?

• What political analogues to climate change can you think of?
Something New Under the Sun

The thing that hath been, it is that which shall be; and that which is done is that which shall be done: and there is no new thing under the sun.

--Ecclesiastes 1:9 KJV

- Scale of the problem
- Responsibility of problem—Personal and Global
- Scientific discourse

In this class

- Discuss public opinions on climate change at multiple scales (local, regional, global)
  - Weather
  - Climate
  - Political parties
  - Understanding of science
- Identify communication barriers and opportunities
- Discuss politics of climate change

- Help me write my research papers by interpreting my data
How Social Polls/Surveys are Used

Understanding Values Relationships
- Globally 40% of people are “unaware” of climate change (2009)
- US similar to other countries: Environment is not a “top 10” issue.
- 1/3 US public say climate influence voting

And Social Capacity to Adapt and Respond

What are sources we can use to describe public opinion?
- Voting records
- Media
- Polls
- Surveys
- Interviews
- Management plans
- Government documents
- Economic spending (e.g. rational choice models)
Geography class: In general would you describe your political view as…

A. Very conservative 44%
B. Somewhat conservative 32%
C. Moderate 16%
D. Somewhat liberal 8%
E. Very liberal 0%
Political Profile of PNW

Chi-square statistic = 319.4, df = 12, pvalue <= 0.0001

Geography class: Based on your understanding of the Earth’s climate, which of the following categories describes how the climate has changed over the past 100 years?

A. Temperatures have increased a great deal
B. Temperatures have increased slightly
C. Temperatures have changed but not significantly
D. Temperatures have not changed
E. Temperatures have decreased slightly
F. Temperatures have decreased a great deal
PNW Public: Global temperatures over past 100 years have…

The more liberal you are… the more likely you are to perceive increases in temperature over the past century. And few people have observed decreases.

How the climate has changed over the past 100 years: Temperatures have…

Chi-square statistic = 47, df = 4, p-value <=0.0001
Geography class: What do you think is the MAIN cause of this change in temperature

A. Natural causes  
B. Human activities 
C. Other

6 Americas Study

About Half of Americans Believe Global Warming Is Human Caused
- Belief in human-caused global warming is down 7 percentage points since Fall 2012 -

![Graph showing percentage change in belief in human-caused global warming over time.](image-url)
PNW Public: What do you think is the MAIN cause of change in temperature?

What do you think is the MAIN cause of change in temperature?

- God’s intervention, scriptural, biblical.
- Activity of the sun; A long ice age we’re still withdrawing from.
- It’s cyclic, historical, evolutionary, normal part of earth’s process.
- Natural disasters. Fires.
- Population increase.
- BOTH! 17.7% response.
Geography class: How concerned are you about this (climate) change?

A. Greatly concerned
B. Somewhat concerned
C. A little concerned
D. Not concerned

PNW Public: Level of Concern
PNW Public: How concerned are you about this change? *Cause of temp. changes.

The more you perceive humans as the cause of climate change...the more concerned you are.

Chi-square statistic = 78.8, df = 20, p-value = 0.0001

Men are less concerned than women in the PNW.

Chi-square statistic = 18.5, df = 3, p-value = 0.0003
6 Americas Study

Half of Americans Are Worried About Global Warming, Although Few Are “Very” Worried

![Bar chart showing the percentage of Americans worried about global warming from November 2008 to November 2013. The chart indicates that the percentage of individuals very worried about global warming has fluctuated between 12% and 56% across different surveys.]

6 Americas Study

<table>
<thead>
<tr>
<th></th>
<th>Alarmed</th>
<th>Concerned</th>
<th>Cautious</th>
<th>Disengaged</th>
<th>Doubtful</th>
<th>Dismissive</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2008</td>
<td>18%</td>
<td>33%</td>
<td>19%</td>
<td>12%</td>
<td>11%</td>
<td>7%</td>
</tr>
<tr>
<td>(n=2,129)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>January 2010</td>
<td>10%</td>
<td>29%</td>
<td>27%</td>
<td>6%</td>
<td>13%</td>
<td>16%</td>
</tr>
<tr>
<td>(n=1,001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 2010</td>
<td>13%</td>
<td>28%</td>
<td>24%</td>
<td>10%</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>(n=1,024)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Highest Belief in Global Warming
Most Concerned
Most Motivated

Lowest Belief in Global Warming
Least Concerned
Least Motivated
How does 6 Americas affect policy?

Why do people deny climate change is occurring?

- Stand to lose something?
- Implies responsibility or culpability
- Requires response
- Ideological challenge
- Cognitive dissonance

- Shifting baselines/short-term memories
- Status quo
  - Cool White Dudes
  - Capitalism---check out Naomi Klein’s *this changes everything*
  - US world power—check out Oreskes & Conway *The collapse of western civilization*
What changes our perceptions on climate change?

- Education
- Personal Experience
- Weather observations ([http://climateinw.wordpress.com/](http://climateinw.wordpress.com/))
- Politics and political party
- Connection to other aspects of life

Geography class: In the areas of science and technology, would you say you are…

A. Very uninformed
B. Somewhat uninformed
C. Somewhat informed
D. Very informed
Geography class: In the area of climate science, would you say you are.. 

A. Very uninformed 
B. Somewhat uninformed 
C. Somewhat informed 
D. Very informed 

PNW Public understanding of science and technology; and climate science
Geography class: I have observed changes in weather patterns over the course of my lifetime.

A. Strongly disagree
B. Somewhat disagree
C. Neither agree nor disagree
D. Somewhat agree
E. Strongly agree

PNW Public: I have observed changes in weather patterns over the course of my lifetime…
Extreme Weather

"In 2011, Americans experienced a record-breaking 14 weather and climate disasters that each caused $1 billion or more in damages, in total costing approximately $53 billion, along with incalculable loss of human life. These disasters included severe drought in Texas and the Great Plains, Hurricane Irene along the eastern seaboard, tornadoes in the Midwest, and massive floods in the Mississippi River Valley. In the period of January through March 2012, Americans also experienced record warm temperatures, with temperatures across the contiguous United States 6.0 degrees F above the long-term average. In March alone, 15,292 warm temperature records were broken across the United States."—Extreme weather report from Yale Project on Climate Change Communication

Find out extreme weather in your area:
http://www.environmentamerica.org/page/ame/map-recent-weather-related-disasters-idaho

Geography Class: Do you recall any unusual weather events in your local area that occurred in the past twelve months

A. Yes
B. No
Geography class: Do you recall any unusual weather events that occurred elsewhere in the US in the past twelve months

A. Yes
B. No

Yale Extreme Weather

Do you recall any unusual weather events in your local area that occurred in the past twelve months?

<table>
<thead>
<tr>
<th></th>
<th>Nat'l Avg</th>
<th>Northeast</th>
<th>Midwest</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>56</td>
<td>68</td>
<td>60</td>
<td>51</td>
<td>50</td>
</tr>
<tr>
<td>No</td>
<td>44</td>
<td>32</td>
<td>40</td>
<td>49</td>
<td>50</td>
</tr>
</tbody>
</table>

Do you recall any unusual weather events that occurred elsewhere in the United States in the past twelve months?

<table>
<thead>
<tr>
<th></th>
<th>Nat'l Avg</th>
<th>Northeast</th>
<th>Midwest</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>62</td>
<td>70</td>
<td>62</td>
<td>59</td>
<td>60</td>
</tr>
<tr>
<td>No</td>
<td>38</td>
<td>30</td>
<td>38</td>
<td>41</td>
<td>40</td>
</tr>
</tbody>
</table>
Types of Extreme Weather (from Yale report)

Has extreme weather caused more or fewer of the following problems in your local area over the past few decades?

<table>
<thead>
<tr>
<th>Problem</th>
<th>Much more</th>
<th>Somewhat more</th>
<th>Stayed about the same</th>
<th>Somewhat fewer</th>
<th>Many fewer</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harm to crops</td>
<td>13</td>
<td>33</td>
<td>29</td>
<td>6</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Floods</td>
<td>13</td>
<td>26</td>
<td>35</td>
<td>8</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Problems with air quality</td>
<td>12</td>
<td>26</td>
<td>37</td>
<td>8</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>Forest fires</td>
<td>11</td>
<td>23</td>
<td>38</td>
<td>6</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>Problems with water quality</td>
<td>10</td>
<td>21</td>
<td>41</td>
<td>6</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Problems with transportation</td>
<td>7</td>
<td>16</td>
<td>43</td>
<td>9</td>
<td>3</td>
<td>21</td>
</tr>
</tbody>
</table>

Percent of Americans

Do you think the following groups should be doing more or less to address climate change:
The US Congress

A. Much less
B. Less
C. Currently doing the right amount
D. More
E. Much More
Do you think the following groups should be doing more or less to address climate change:

Citizens

A. Much less
B. Less
C. Currently doing the right amount
D. More
E. Much More

PNW Public: How much more should each group be doing?
How much more should each group be doing?

- State Legislators: 66%
- US Congress: 51%

How do we communicate climate science when this is the perception of climate scientists?

Only Four in Ten Americans Believe Most Scientists Think Global Warming Is Happening
Visualizing climate change perceptions

7 out of 10 Pacific Northwest citizens think citizens should be doing more about climate change.

Alternative images: Communicating Climate Change

- Girl at Moscow Community Garden growing local, organic food.
- Wind power in wheat field near Hwy 195 between Spokane and Pullman, Washington—alternative sources of income and energy.
Example of mainstream communication: Personal perspectives wane in comparison to NIMBY values. For example Nebraskans standup against the Keystone XL pipeline proposed to run through their state carrying crude from the Alberta Tar Sands, Canada to Texas refineries on the Gulf.

Political implications

The Fact That Climate Change Lost Big in This Election Could Be a Huge Win (Slate.com)

- According to exit poll data, global warming is now the most polarizing issue to Republicans—beating even Obama’s signature health care laws. But at least it’s an issue. This is in sharp contrast to 2012, when the two presidential candidates barely mentioned the issue at all. Even if the 2014 election wasn’t primarily about climate, it was one of the social issues that resonated most strongly with voters.
- Besides simply talking about the issue, there were tangible victories as well.
- The ongoing, successful carbon-trading platform in the Northeast is set to add Pennsylvania as a member. A climate-focused super PAC survived its initial election cycle with an encouraging win-loss record. A western North Dakota tribal election winner promised to crack down on America’s biggest oil boom
Discursive Alternatives to “CC”—Speaking to the values of the audience

- Food systems
- Water availability
- Human health
- Forest fires
- Wildlife
- Finances
- Risk in investments—e.g. Sierra club destabilization of investing in coal-fired power plants

Conclusions from PNW Public study

- Our region is politically diverse, and climate perceptions are connected to political views.
- “Believers” and women are more likely to be concerned. Public is aware of risks to family, community.
- People who think globally, think locally.
- The PNW public wants to do more about climate change.

Visit REACCHPNA.org for more information and for an upcoming report. The youtube channel of the Pacific Northwest Climate Science Conference shares more research, including my presentation.
Resources

Take the 6 Americas Survey online:
http://uw.kqed.org/climatesurvey/index-kqed.php

lbernacchi@uidaho.edu

Parting question: How do communication, politics, and perceptions interact on the subject of climate change?

Thank you for your time and attention. Best wishes being Climate Communicators!