



Public perceptions of climate change and Pacific Northwest agriculture

Leigh Bernacchi (*lbernacchi@uidaho.edu*) UI, J. D. Wulforst UI, Liza Nirelli McNamee UI, and Monica Reyna UI

Debate over whether climate change is real and what can be done about it continues. Although it is not the main issue that the U.S. and European publics vote on, and many people struggle with how to discuss the key issues, the topic of climate change incites lively exchanges among scientists, politicians, and citizens. This short paper explores the perceptions of climate change among the general public in the Pacific Northwest (PNW). By surveying residents in this region, we established baseline information on the perceptions of climate change—with an emphasis on agriculture.

IMPACT

Public perceptions inform how we can address climate change in ID, OR, and WA. The general public is interested in seeing more action to address climate change through legislation at both the state and federal levels, via the agricultural community, and through individual choices. This creates an opportunity to promote the value of agriculture to address and mitigate food security risks related to climate change.

We designed the public perceptions survey within the context of agriculture to expand the integrative potential of REACCH: climate change can often be communicated through alternative topics that serve as “pivots” from a heated and divisive topic to a familiar one. In the 2013 REACCH annual report, we discussed how producers may pivot from focusing on

long-term climate to discussing current water availability. For the public, food quality, the environmental impacts of agricultural production, and food security are seemingly hot topics—and a constructive alternative to pivot climate change into a more familiar and tangible context, such as the dinner table, feeding our families and questions like “where does our community get its food?” Additionally, our stakeholders need to be aware of public perceptions and attitudes toward climate change response and responsibilities in order to reflect their perspectives through policy.

How did we do it? We conducted a dual-frame (landline and wireless) telephone survey of the general public using a random sample stratified by rural and urban counties in ID, OR, and WA, yielding 1,298 responses (25% response rate, 43% cooperation rate). Data were adjusted for sample design and then calibrated in each stratum so that our sample was representative of the general population (e.g., gender and age). This research can help us understand the baseline of climate perceptions in the region and could inform institutional adaptations.

Global temperature and causes of climate change

Climate change is one of the most politically polarized topics today. Those surveyed responded to one of the key measures of climate change: a change in average global temperatures. We asked, “Based on your understanding of the earth’s climate, how has the climate changed over the past 100 years?” with respect to temperature increase or decrease. Examining perceived change in temperature by political view (using a spectrum from conservative to liberal, rather than political party), we can see that across political views, a majority of respondents indicated that temperatures have increased (Figure 1).

The most intense aspect of climate change discussions is often the question of belief in climate change. Do you believe it is human caused? Naturally caused? Both? We asked, “What do you think is the main cause of this change in temperature?” Our respondents could reply “natural causes,” “human activities,” or “other.” We coded qualitative responses of “other,” including 17.7% of total respondents who specified that both humans and nature cause changes in temperature. Additionally, 14.2% of respondents either refused to answer, indicated “don’t know,” or asked to skip the question, revealing that a substantive portion of the population could be considered less “climate aware.” Using a nominal

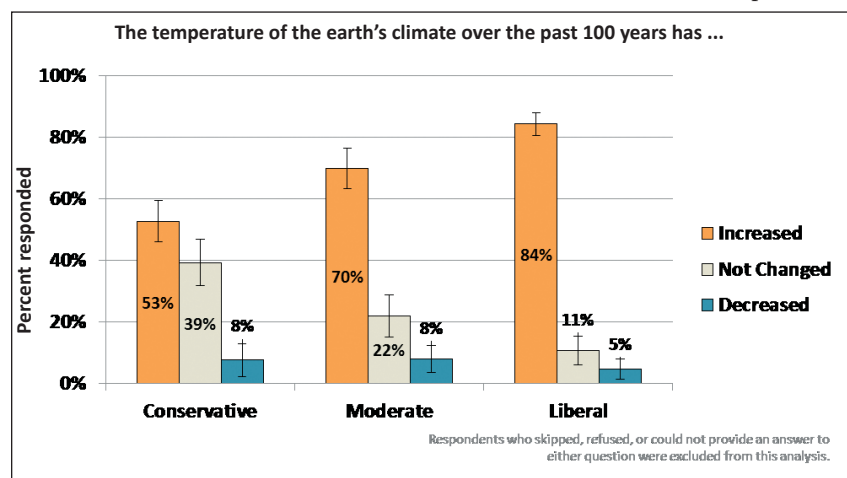


Figure 1. Perceptions of temperature change over the past 100 years by political view. People who identified as liberal were more likely to say the earth’s temperature has increased over the past 100 years. While the majority of conservatives agreed, a large portion (39%) said the temperature has not changed.

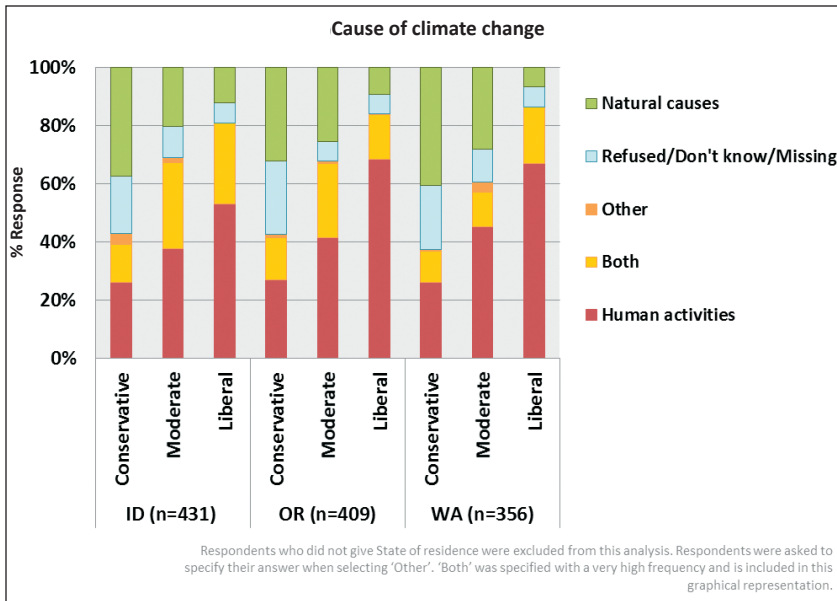


Figure 2. Perceived cause of change in temperature by state and political view. While perceptions of the main cause of change in temperature (proxy for climate change) tended to be similar among the states, respondents with different political views answered the question differently: liberals, compared to conservatives, had 9.9 times higher odds of responding “human activities” than “natural causes.”

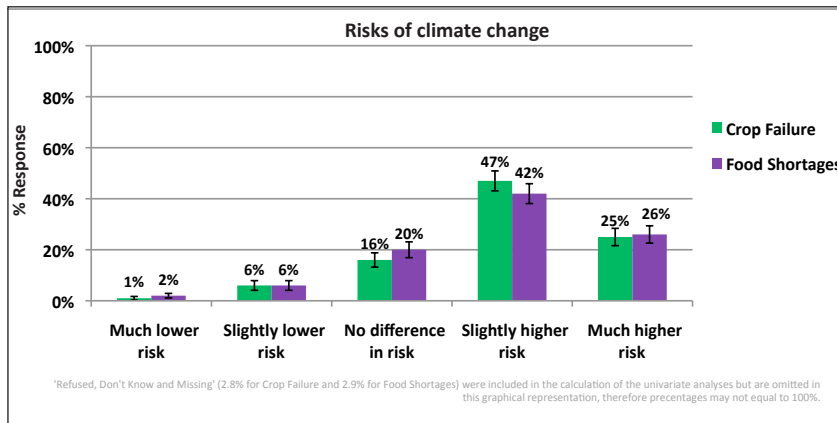
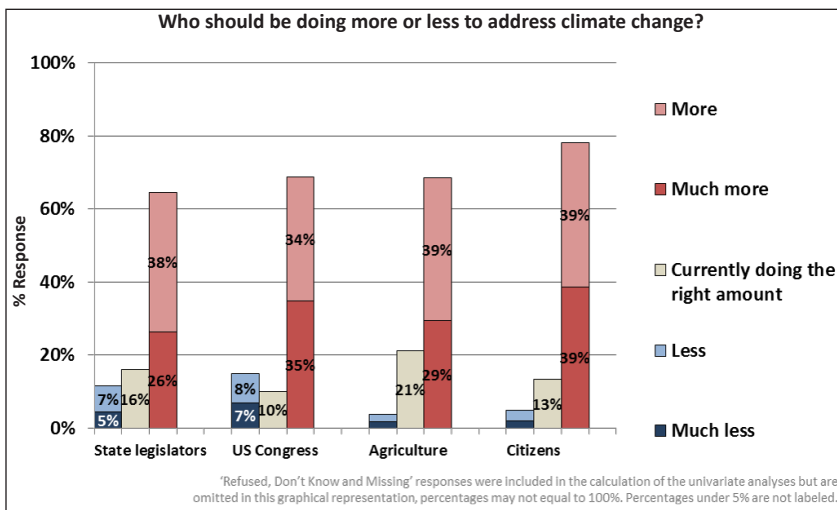


Figure 3. Perceived risks of climate change to regional agricultural resources. The majority of respondents said that an increase in risk of crop failure and food shortages due to climate change effects in the next 30 years is likely. Few people think there is a lower risk of these elements of food insecurity.



logistic regression procedure, we addressed the relationship between the main cause of temperature change and political view, analyzed by state. Specifically, those who identified themselves as liberal (compared to conservative) had 9 to 10 times higher odds of responding “human activities” compared to “natural causes” as the reason for the change in temperature (Figure 2).

Risks of climate change

Respondents indicated that global temperatures are rising, with many noting humans as the cause, at least in part. Some climate change effects are often perceived as risks. With attention to how the PNW region and food security could be affected by climate change, we asked about risks to local food production, in terms of crop failures, and to food availability, in terms of shortages. Most respondents described at least slightly higher, if not much higher, risk of both food shortages and crop failures (Figure 3).

Response to climate change

Another reason that climate change remains such a current topic pertains to unresolved debate about who is responsible for adapting to or mitigating climate change. A telephone survey format does not lend itself to in-depth questions, but we asked respondents whether governing bodies, the agricultural community, and/or citizens “should be doing more or less to address climate change.” The majority of respondents thought that all of these groups should be doing more to address climate change (Figure 4).

Our data indicate that, regardless of the percentage of respondents who think that climate change is primarily caused by humans (42%), the general public is interested in seeing more action to address climate change through legislation at both the state and federal levels, via the agricultural community, and through individual choices. This creates an opportunity to discuss the value of and opportunity for agriculture to address and mitigate food security risks related to climate change—a rhetorical pivot for climate change discourse in the PNW.

With this research we hope to add to the baseline of information about the public’s perspective on climate change.

All analyses were conducted in SAS 9.3 (release date 2009). SAS Survey Procedures were used to account for survey design.

Figure 4. Who should be doing more or less to address climate change? Respondents cited citizens as those who need to be doing more, above all other groups, but in general the majority of respondents think we should be doing more to address climate change. Fewer than 20% think we should be doing less.