

# Climate Change & Mental Wellbeing

*Perspectives from Montana Farmers and Ranchers*

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Read the full study in the Journal of Rural Mental Health: <https://doi.org/10.1037/rmh0000131>

**RESEARCH OBJECTIVES:** While the physical and economic implications of climate change are studied widely, including effects on agricultural systems, the consequent mental health implications have largely been overlooked. As farmers and ranchers support local, national, and global food security, they represent an especially vulnerable and critical population to support. Montana State University researchers (Howard, Ahmed, Lachapelle, and Schure, 2020) developed a novel survey tool to *investigate the relationship between climate change perceptions and mental wellbeing among farmers and ranchers.*

## HOW we MEASURED PERCEPTIONS of CLIMATE CHANGE and MENTAL WELLBEING

The survey structure was created by combining aspects of previously validated and widely used survey instruments. Questions were adapted from the Climate Change in the American Mind survey (Leiserowitz, Maibach, Roser-Renouf, Feinberg, & Rosenthal, 2015) to assess climate risk perception. Questions from the Generalized Anxiety Disorder Scale-7 (GADS-7) (Löwe et al., 2008) were further adapted to measure how strongly respondents feel symptoms of anxiety when they think about climate change and its effects on their farm/ ranch operation. Finally, an open-ended question gave respondents the opportunity to elaborate on their responses. The study

### Example Survey Question

How strongly do you feel each of the following emotions when you think about climate change and its effects on your agricultural business? (Please check your response)

	Not at all	Not very	Moderately	Very
a. Feel nervous or anxious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Feel uncontrollable worry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Feel worried about different things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Feel you can't relax	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Feel restless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Feel annoyed/irritable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Feel afraid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Feel hopeful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

team distributed paper surveys in-person at two annual agricultural conferences in Montana and online to three agricultural organizations' email list servers (n=125) following ethical guidelines for the participation of human subjects in research.

## CLIMATE Risks ARE

*Climate risks* are the potential negative effects of climate change. In this context, we refer to climate risk as the participant's perceived harm of climate change to their agricultural operation.

## MENTAL Wellbeing IS

*Mental wellbeing* is another way of saying mental health. The World Health Organization (WHO) describes mental health as: "Mental health is not just the absence of mental disorder. It is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community."

## SURVEY RESULTS

*Major findings of Montana producers' perceptions of climate change and mental wellbeing*

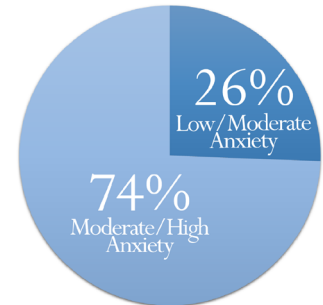
The majority of respondents (72%) agreed that **climate change is having an adverse effect** on their farm/ranch.

Nearly three quarters of respondents reported feeling **moderate to high levels of anxiety when thinking about climate effects** on their agricultural business (see figure at right).

The **greater the reported perceived risk** regarding climate change, the **greater the level of reported anxiety**.

The impact of **climate change on farm/ranch profitability** was perceived as the main **cause of distress**.

### Farmer and Rancher Anxiety Levels Regarding Climate Change Effects on Agriculture



## IN THEIR *Own* WORDS

*Open-ended survey question provided more in-depth insights into Montana producers' perspectives of climate change and mental wellbeing*

One respondent commented:

“(I am) worried about crop losses of current and future years, and about where funds will come for dealing with climate change on the farm. As with most, my worries generally stem from financial stress.”

Another respondent shared:

“Climate change contributes to my distress because it makes planning for long term crops more difficult and predicting weather patterns less predictable.”



## The IMPLICATIONS of this STUDY

**Public health preparedness efforts** are warranted to provide mental health support for the agricultural sector. **Research and outreach efforts** are further called for to promote the adoption of practices that mitigate climate risk and enhance personal and food system resilience. **Linkages of climate-induced anxiety to demographic challenges** of an increasingly aging and female farm and ranch population should also be studied. **Policy discussions at various scales** should be considered to address financial risk to agricultural enterprises in the face of increased climate variability.

REFERENCE: Howard, M., Ahmed, S., Lachapelle, P., & Schure, M. B. (in press). Farmer and rancher perceptions of climate change and their relationships with mental health. *Journal of Rural Mental Health*. <https://doi.org/10.1037/rmh0000131>

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