



North Carolina Cooperative Extension Professionals' Climate Change Perceptions, Willingness, and Perceived Barriers to Programming

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Executive Summary

This study evaluated North Carolina Cooperative Extension (NCCE) professionals' perceptions of global warming, willingness to participate in climate change-related programs, and barriers to climate change programming. Survey results show that the majority of NCCE professionals are cautious, concerned, or alarmed about global warming and are willing to engage in climate change programming. They perceive lack of audience interest, conflicting information, and lack of applied information to be the greatest barriers to programming.

Background

Climate change beliefs and concerns vary dramatically across the American public, spanning a spectrum from alarmed to dismissive attitudes, and it is unknown to what degree Extension professionals mirror their target audiences (Leiserowitz, Maibach, Roser-Renouf, & Hmielowski, 2012). Although the general public's perceptions of climate change are well-documented, few studies focus specifically on the beliefs and perceptions of agriculture and natural resource professionals, landowners, and other groups that are key to climate change adaptation and mitigation efforts.

Methods

We surveyed 646 North Carolina Cooperative Extension (NCCE) professionals using a web-based survey in the fall of 2011. The survey was part of a region-wide effort led by Pine Integrated Network: Education, Mitigation, and Adaptation Project (PINEMAP) collaborators at the University of Florida's School of Forest Resources and Conservation to survey several Southeastern states (Adams, Monroe, Plate, & Wojcik, 2012).

We assessed perceptions of climate change using the Six Americas segmentation analysis developed by the Yale Project on Climate Change and George Mason University and used in several national surveys (Leiserowitz, Maibach, Roser-Renouf, & Hmielowski, 2012). The analysis

segments respondents into six groups (alarmed, concerned, cautious, disengaged, doubtful, and dismissive) categorized by firmness of opinion, sense of urgency, and issue engagement.

We also asked respondents about their willingness to participate in climate change programming and their perceived barriers to incorporating climate change into new and existing programs. A list of potential barriers was created with the help of 32 Extension professionals from five states.

Results

We had a response rate of 62% (n=400). We found a wide array of beliefs and engagement with global warming during the Six Americas segmentation analysis. Respondents were skewed toward belief in global warming, with nearly 70% of respondents classified as alarmed, concerned, or cautious (Figure 1). These results are consistent with Six Americas segmentation analyses of the American public (Figure 2).

Figure 1. Six Americas Segmentation Analysis of NCCE Professionals.

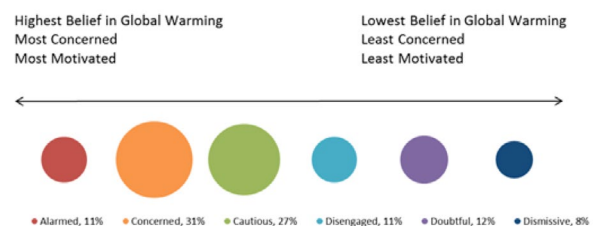
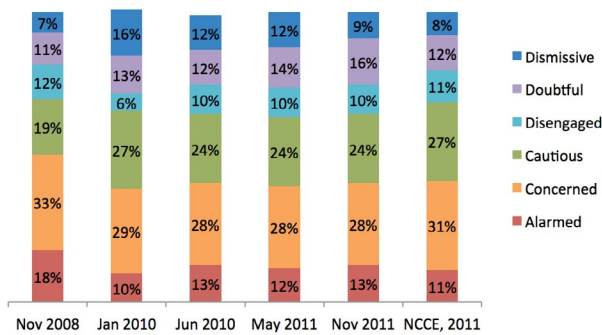
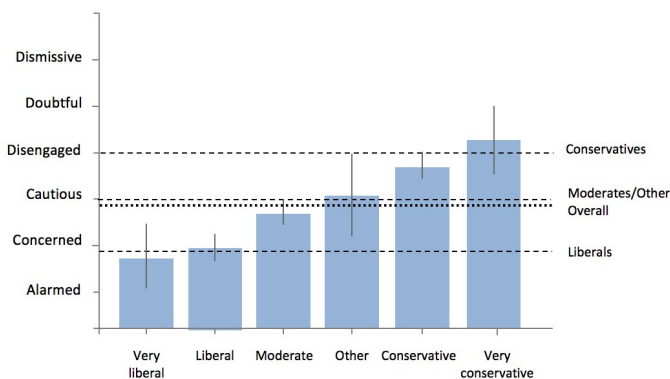


Figure 2. Six Americas Segmentation Analysis: Comparison of the American Public in November 2008, January 2010, June 2010, May 2011, and November 2011 (data from Leiserowitz, Maibach, Roser-Renouf, & Hmielowski, 2012) and NCCE.



Liberal and female respondents were more likely to be alarmed, concerned, or cautious than conservatives and males (political orientation: Welch statistic=25.146, $p < 0.0001$, Figure 3; and gender: $F = 19.094$, $p < 0.0001$). This trend between global warming attitudes, political orientation, and gender is consistent with national surveys, which suggests that liberals and women express opinions more consistent with the climate science community than their conservative, male counterparts (McCright, 2010; McCright, 2011).

Figure 3. Six Americas Segmentation and Self-Identified Political Organization.



Dashed lines are groups' means; dotted line is the overall mean. Error bars are 95% confidence intervals.

Respondents indicated willingness to engage in programming, with 69% of respondents somewhat to very willing to develop materials or programs. However, respondents indicated a need for training, with 82% of respondents somewhat to very willing to participate in continuing education, to address perceived conflicts within

research, gather applicable information, and emphasize relevancy. When asked to identify factors that limit climate change programming, respondents indicated to what extent each potential barrier on a provided list was limiting. Respondents perceived lack of audience interest, conflicts within available information, and lack of applied information as the greatest barriers.

Conclusions and Implications

The NCCE reflects the American public in its wide array of climate change beliefs, with 70% of respondents cautious, concerned, or alarmed. Cooperative Extension may take several approaches to implementing and integrating climate change into training and programming. Extension leadership may choose to target alarmed and concerned agents for climate change training and delivery. Alternatively, they may choose to focus on likely impacts of climate change and omit phrases such as global warming and climate change to appeal to more conservative professionals and likewise, conservative target audiences. Participation of conservative and male Extension professionals may be increasingly important where this demographic group comprises a majority in a content area (e.g., agriculture).

References

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