

Public Opinion on Climate Change in the Gulf of Maine Region

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Community and Environment in Rural America (CERA) surveys

- Random-sample telephone surveys by UNH Carsey Institute researchers — 15,000 to date
 - 2007, rural counties in 9 states
 - 2008, Michigan's Upper Peninsula
 - 2009, Downeast Maine (Hancock & Washington Counties)
 - 2010, North Country (Essex Vt, Coos NH, Oxford ME) – SE Alaska – Gulf Coast – Olympic Peninsula

Granite State Poll

quarterly statewide surveys

- Telephone surveys of random samples of 500 New Hampshire adults, 4 times per year
- Three new climate-change questions became part of the poll starting in April 2010.
- Repeated quarterly, tracking possible changes in NH climate opinions
- The same climate questions were included on CERA surveys in 2010

Three climate change questions

Neutral wording follows that of statements by major scientific organizations (AAAS, AGU, NAS and many others)

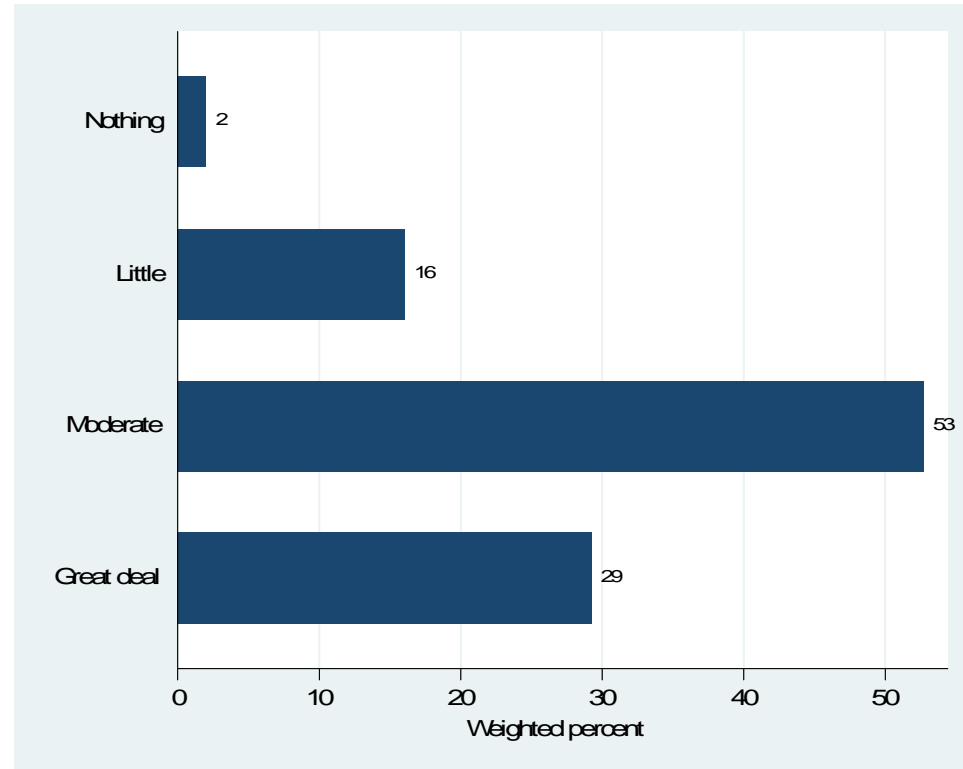
Order in which questions and responses are read is rotated across interviews, to eliminate question-order or response-order bias

Detailed analyses confirm the robustness of main conclusions

How much do you understand?

Next, I would like to ask you some questions about the issue of global warming or climate change. How much do you feel you understand about this issue — would you say a great deal, a moderate amount, only a little, or nothing at all?

- 1 DK/Nothing at all*
- 2 Only a little*
- 3 A moderate amount*
- 4 A great deal*

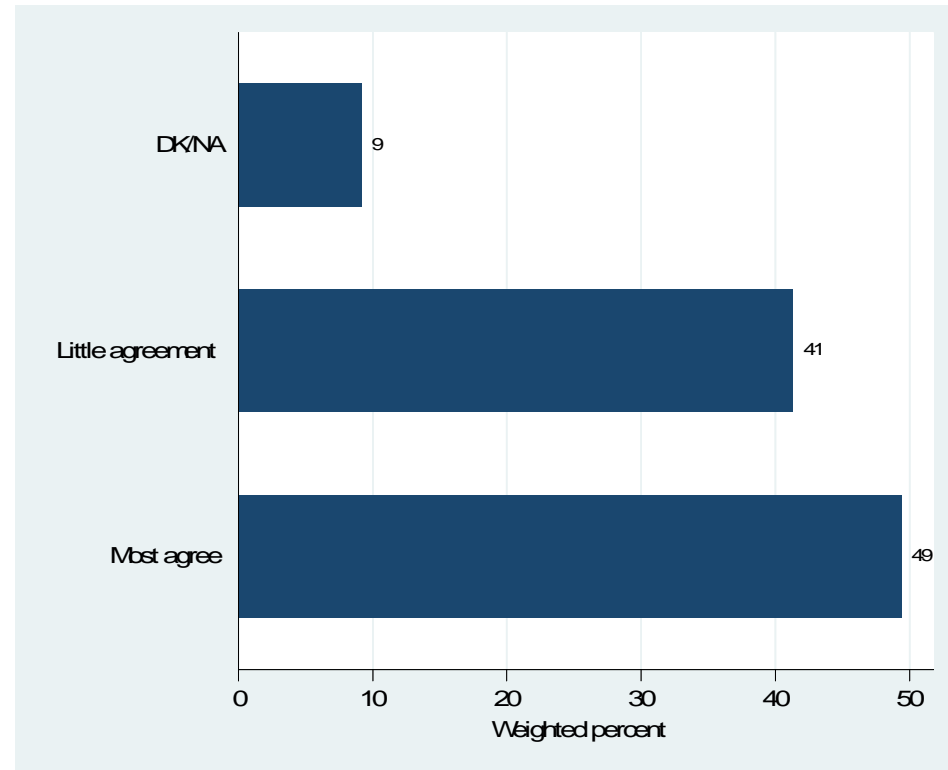


New Hampshire, April 2010 $n = 500$

Do most scientists agree?

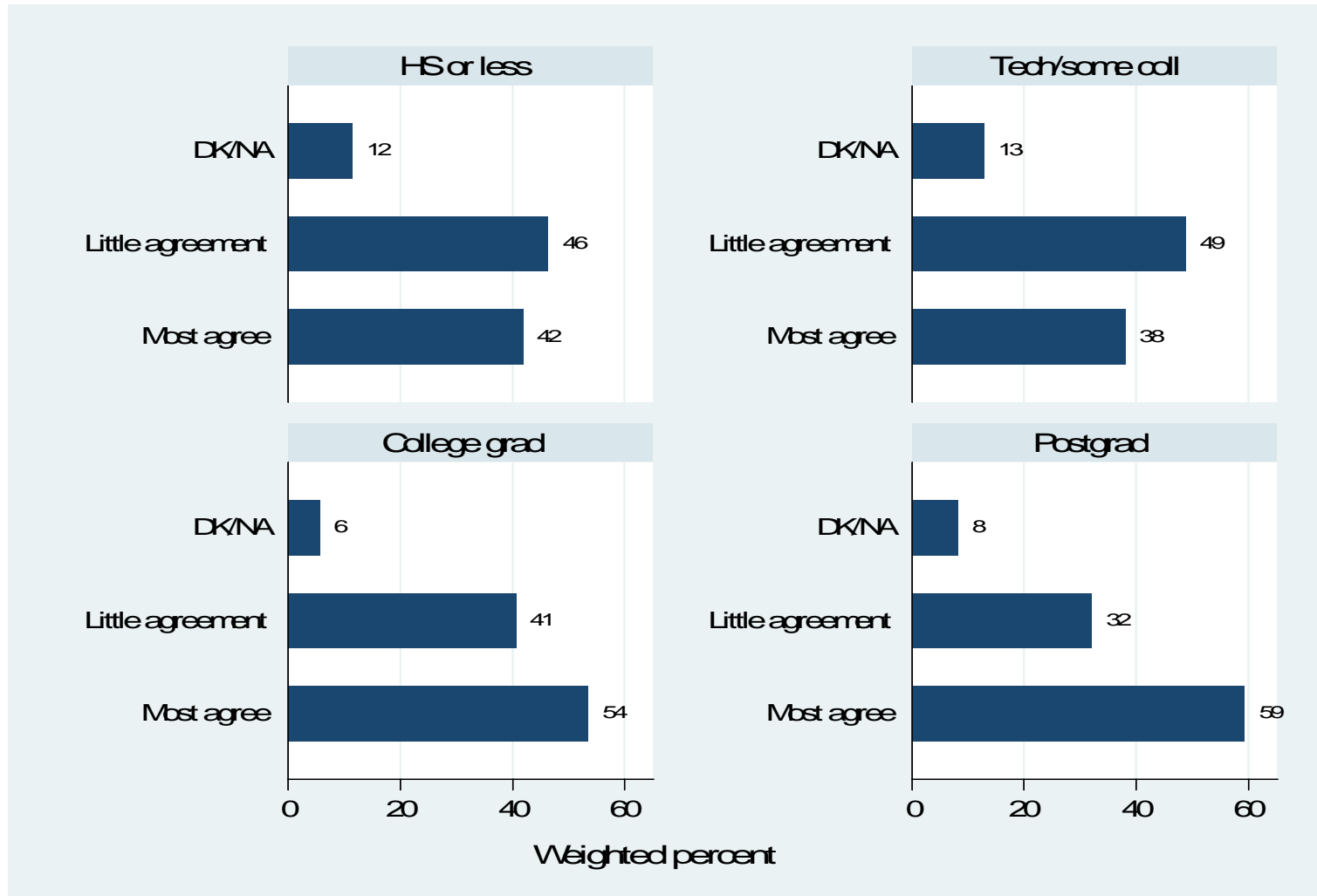
Which of the following two statements do you think is more accurate?

- 1 DK/no answer*
- 2 There is little agreement among scientists whether climate change is happening now, caused mainly by human activities.*
- 3 Most scientists agree that climate change is happening now, caused mainly by human activities.*

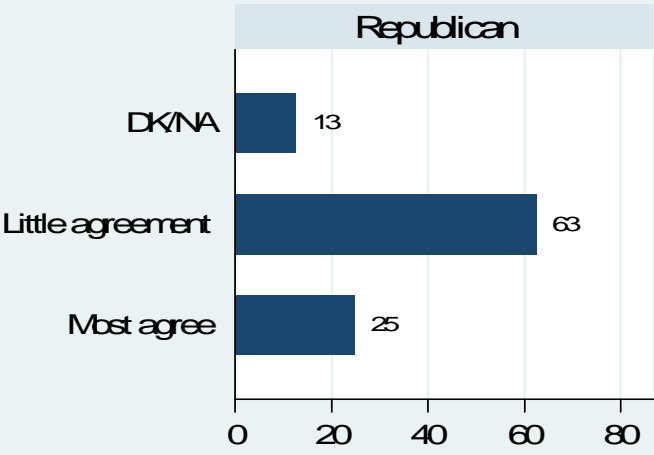
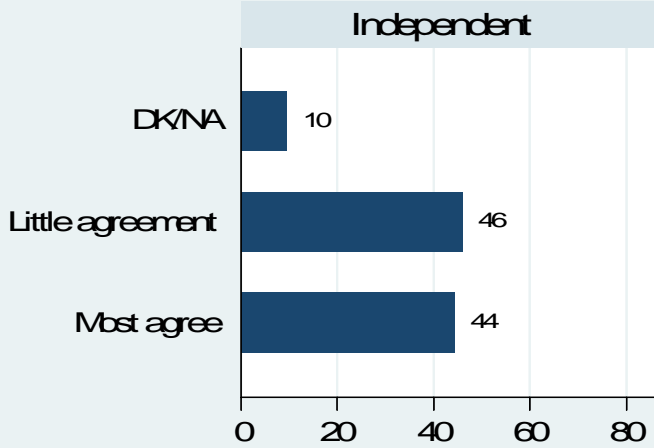
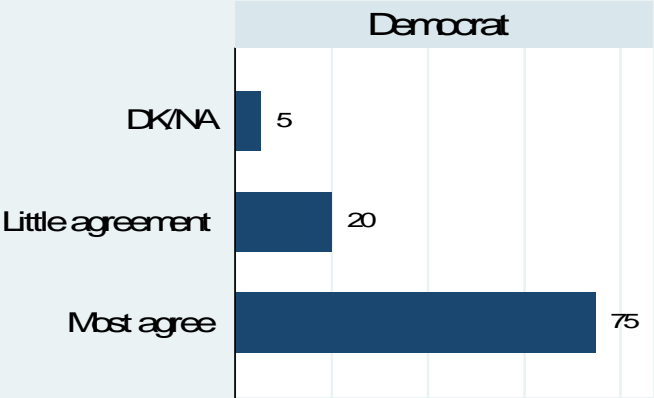


New Hampshire, April 2010 $n = 500$

Do most scientists agree? – by education



Do most scientists agree? – by party

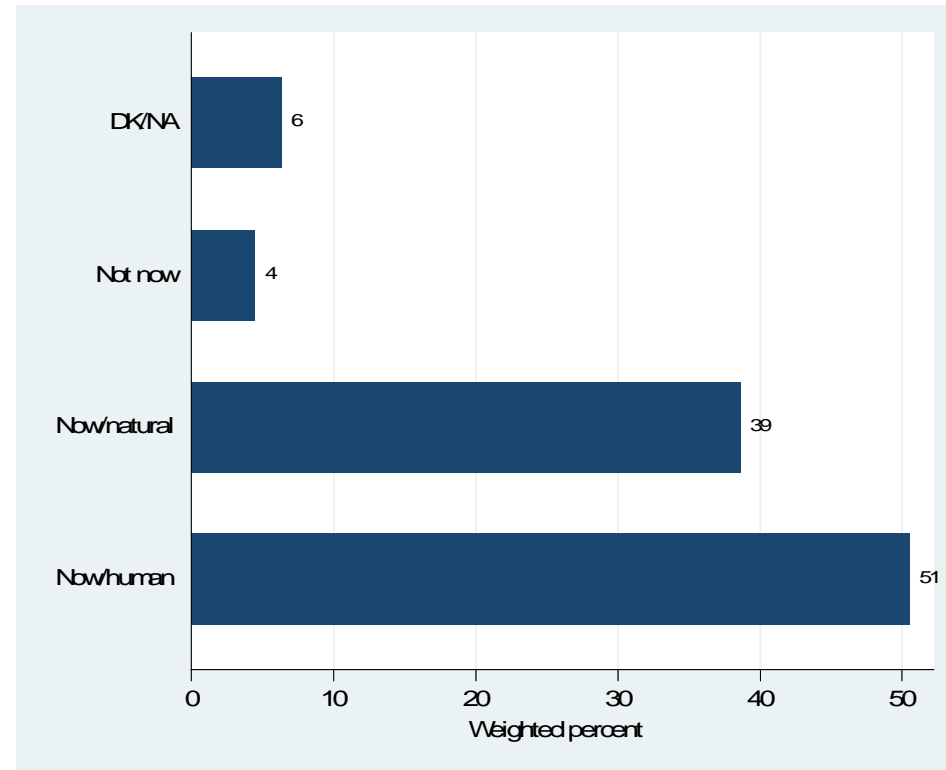


Weighted percent

What do you personally believe?

Which of the following three statements do you personally believe?

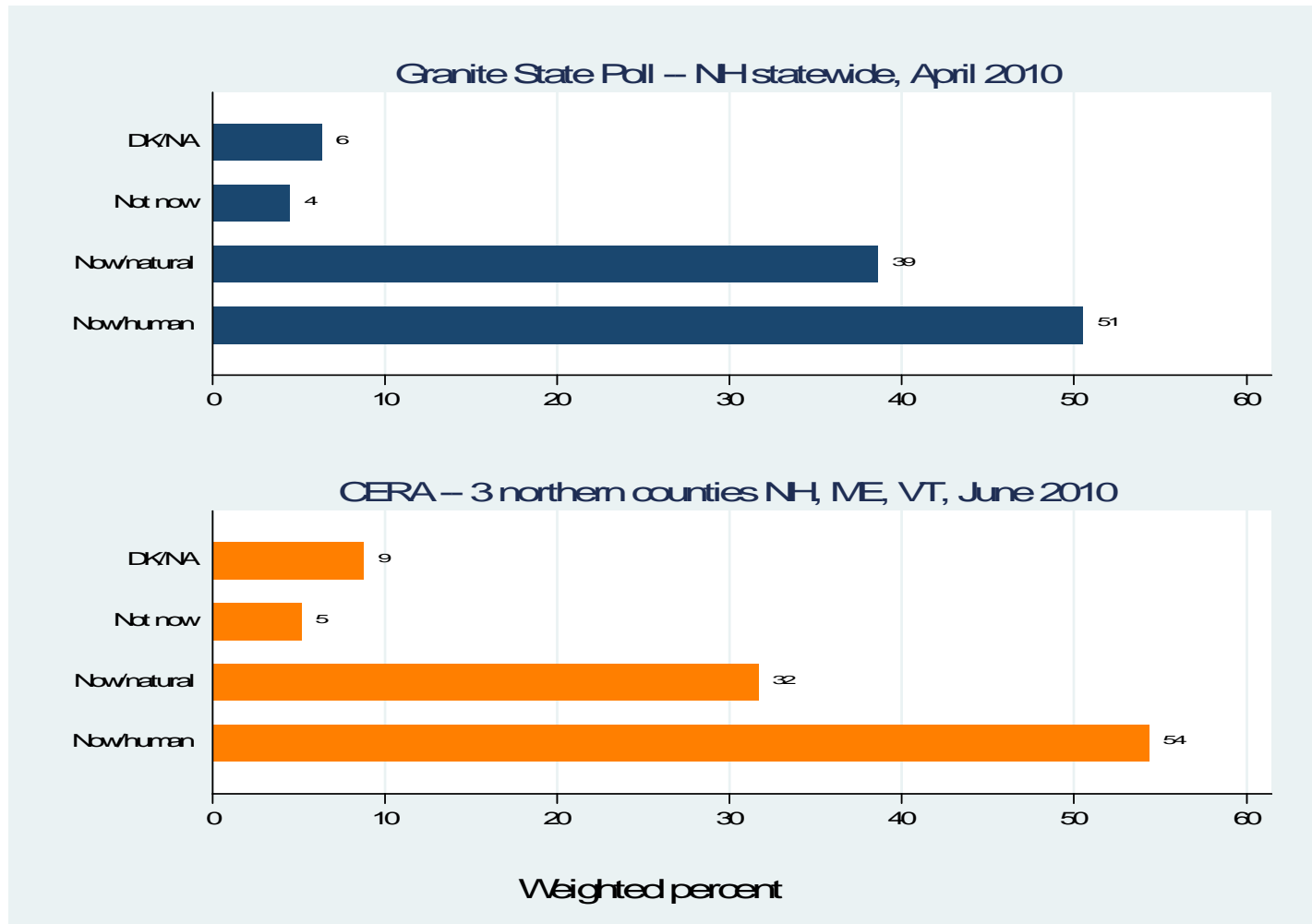
- 1 DK/no answer*
- 2 Climate change is not happening now.*
- 3 Climate change is happening now, but caused mainly by natural forces.*
- 4 Climate change is happening now, caused mainly by human activities.*



New Hampshire, April 2010 $n = 500$

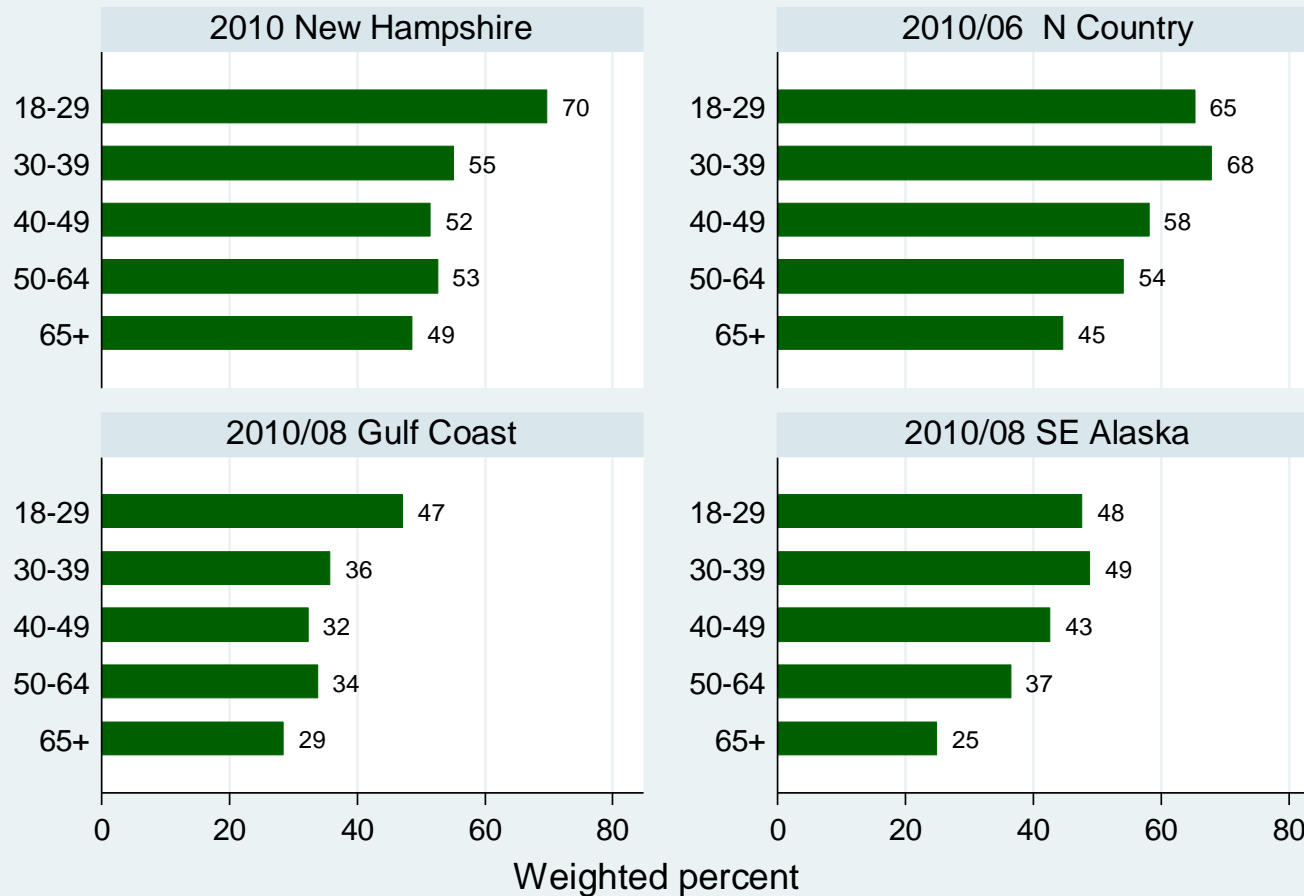
What do you personally believe?

New Hampshire and North Country surveys



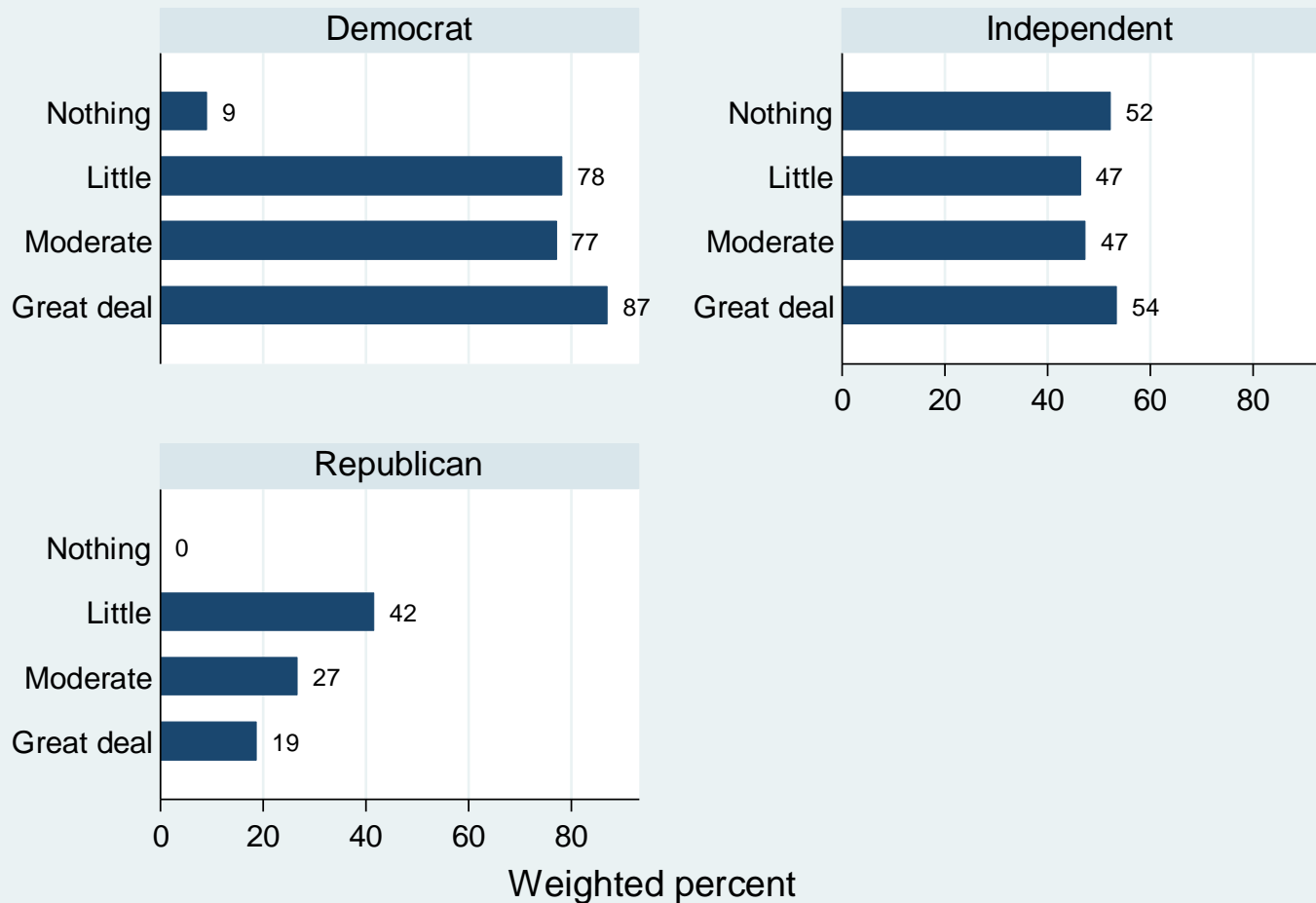
What do you personally believe? by age group, 4 surveys

Personally believe climate change now/human, by age



What do you personally believe? by party and understanding, NH April/July

Personally believe now/human, by party & understanding



3 climate questions – summary

- Most New Hampshire and North Country respondents believe climate is changing.
- This perception is stronger in New England than in some other regions. Perhaps because:
 - New Englanders notice & care about environment.
 - New England climate *is* changing.
- But, there are deep partisan divisions.

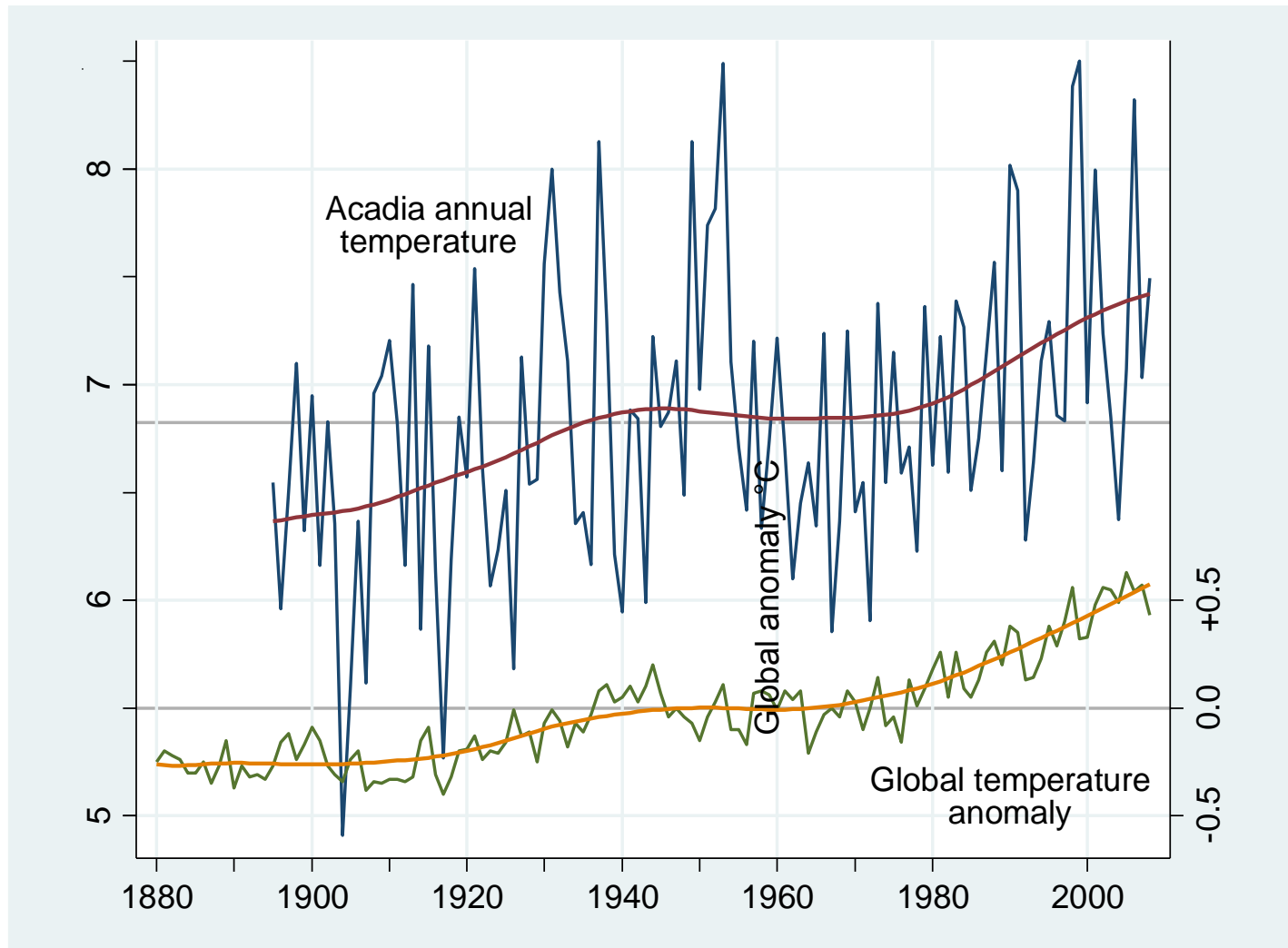
3 climate questions – summary

- Perceptions about the scientific consensus follow the same pattern as individual beliefs.
- Belief that most scientists agree, and personal belief in anthropogenic climate change,
 - Vary from *place to place*
 - Increase with *education*
 - Decrease with *age group*
 - Are most strongly affected by *political views*

3 climate questions – summary

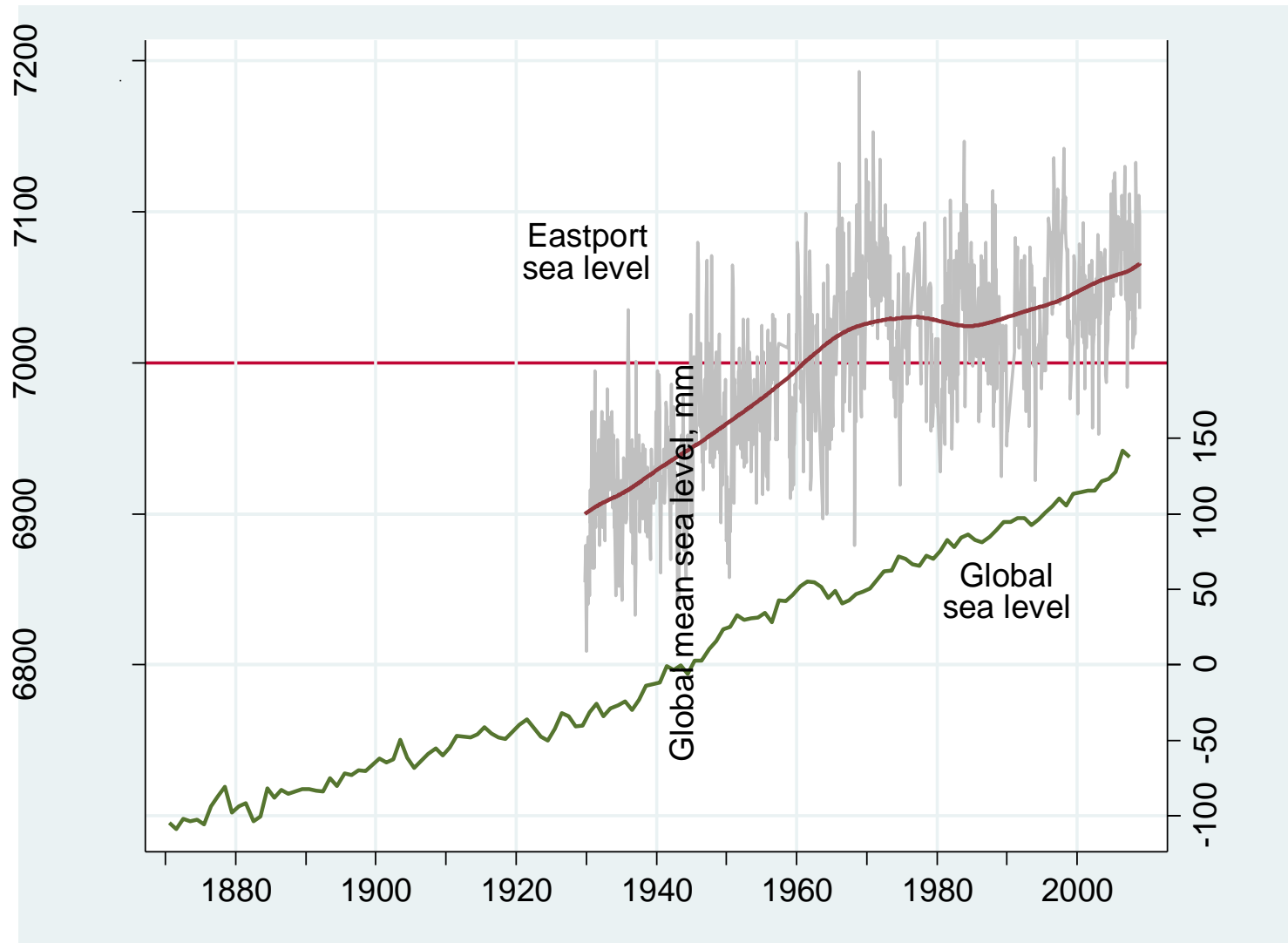
- Belief that most scientists agree, and personal belief in anthropogenic climate change,
 - Tend to *increase with education among Democrats*
 - *Increase less steeply or even decrease with education, among Republicans*
- Self-assessed understanding follows a similar pattern: ACC belief rises with understanding among Democrats, and falls among Republicans.
- Independents tend to hold views intermediate between Democrats and Republicans *in their region*

Is New England's climate warming? Acadia NP and global temperature change



Is the sea rising?

Eastport, Maine and global sea level



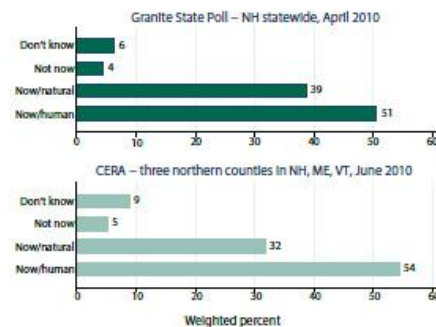
Is New Hampshire's Climate Warming?

LAWRENCE C. HAMILTON, BARRY D. KEIM, AND CAMERON P. WAKE

Introduction

In April 2010, the Granite State Poll asked a representative sample of 512 New Hampshire residents what they personally believe about climate change or global warming.¹ Is it happening now, caused mainly by human activities? Is it happening now, but caused mainly by natural forces? Or is it not happening now? The upper graph in Figure 1 shows results from this poll. Almost 90 percent believed that climate change is happening now, whether natural or human caused.² A separate poll taken in June 2010, for the Community and Environment in Rural America (CERA) project, asked the same question of 1,852 residents in three northern counties of New Hampshire, Maine, and Vermont. The CERA poll found similar results, shown at bottom in Figure 1: 86 percent believed that climate change is happening now.³

FIGURE 1. WHAT DO YOU PERSONALLY BELIEVE ABOUT CLIMATE CHANGE?



Note: Margins of error are plus or minus 4.5 percent for the Granite State Poll and 2.5 percent for CERA.

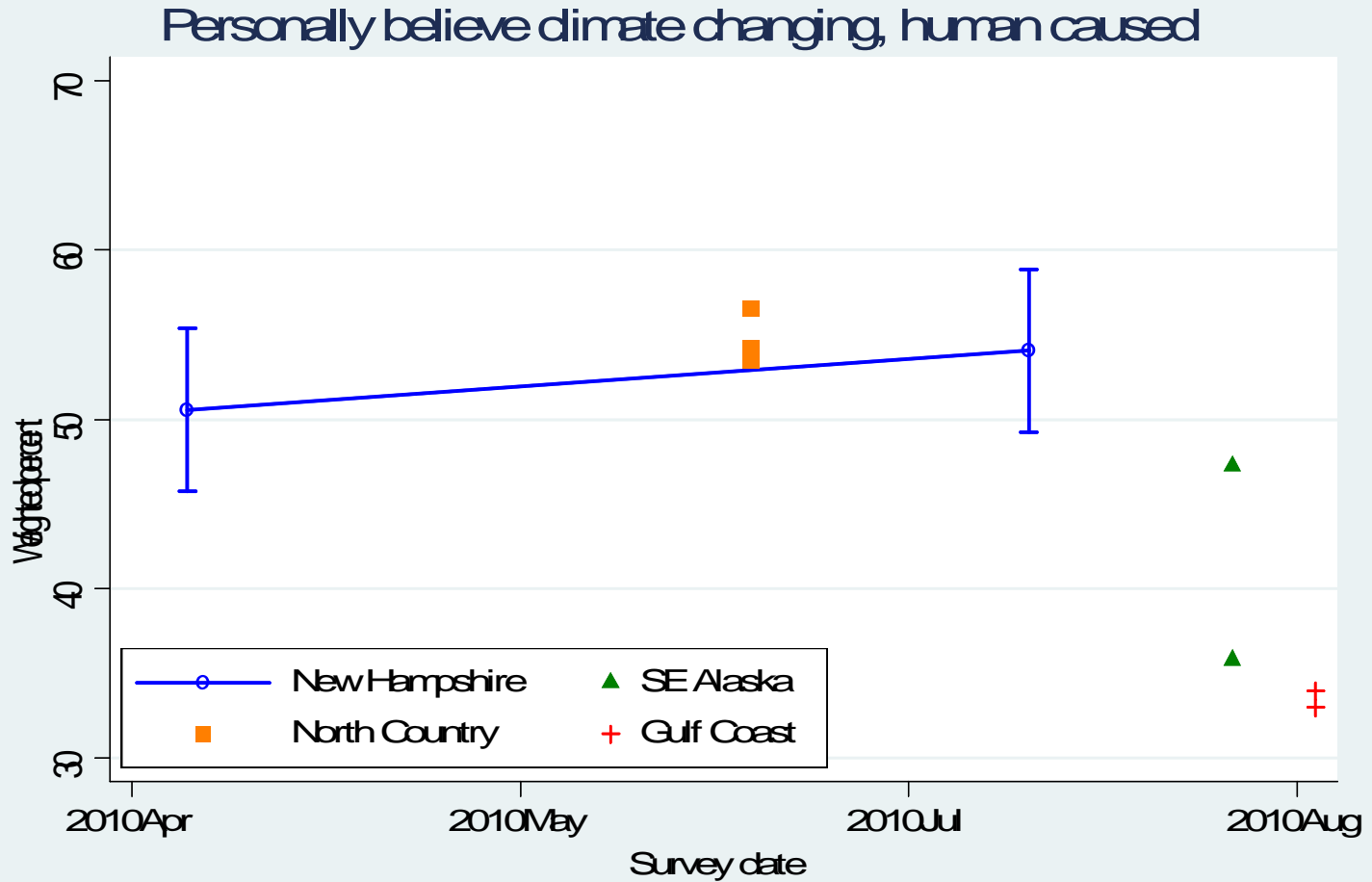
Key Findings

Recent surveys find that most New Hampshire residents believe the climate is changing, whether due to natural or human causes (Figure 1). In this brief, we look at some objective indicators to see whether New Hampshire's climate really has changed and how local trends compare with global patterns. It turns out that New Hampshire seasons, and winters in particular, have been warming at faster-than-global rates. The following are some examples:

- Annual temperatures at First Connecticut Lake, a rural site in far northern New Hampshire, warmed an average of .34 degrees Fahrenheit per decade, from 1895 to 1969, and about .54 degrees Fahrenheit per decade (faster than the global rate) since 1970.
- Winter temperatures in both northern and southern New Hampshire are warming even more steeply, especially through the past forty years.
- Using "temperature anomalies," instead of simple temperatures, helps to make comparisons of trends across places with seemingly much different climates, such as Durham and Mount Washington.
- Ice-out dates on New Hampshire's large lakes provide other indicators of winter warming, which follow patterns similar to those measured for temperature.
- Snowfall responds to temperature change in more complicated ways and often with inconsistent trends.
- Sea level in northern New England, as globally, is now rising at an accelerating rate.

These shifts in New Hampshire's climate, if they continue into the future, will have broad implications for our ecosystems, infrastructure, and economy.

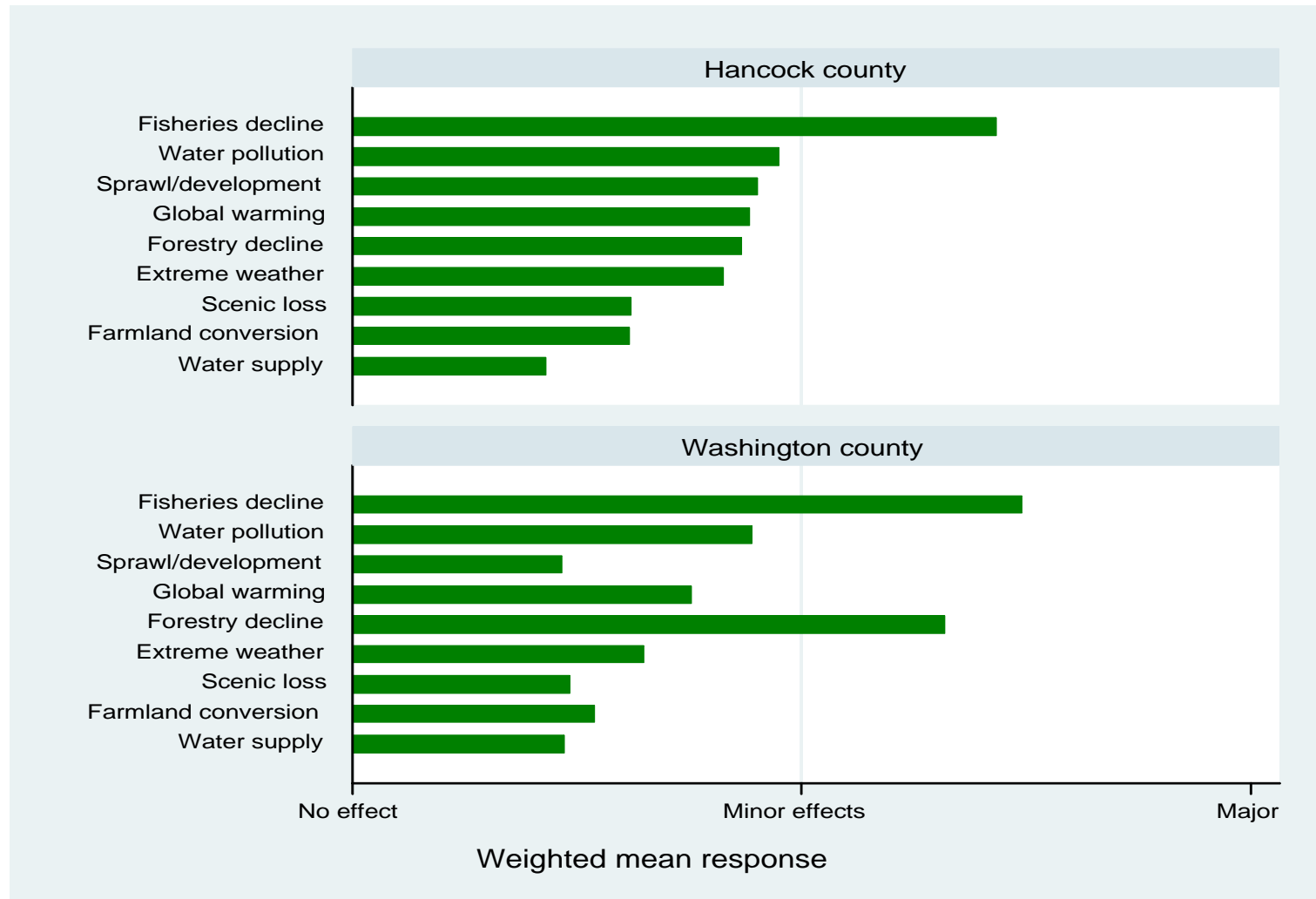
Comparison of 5 surveys



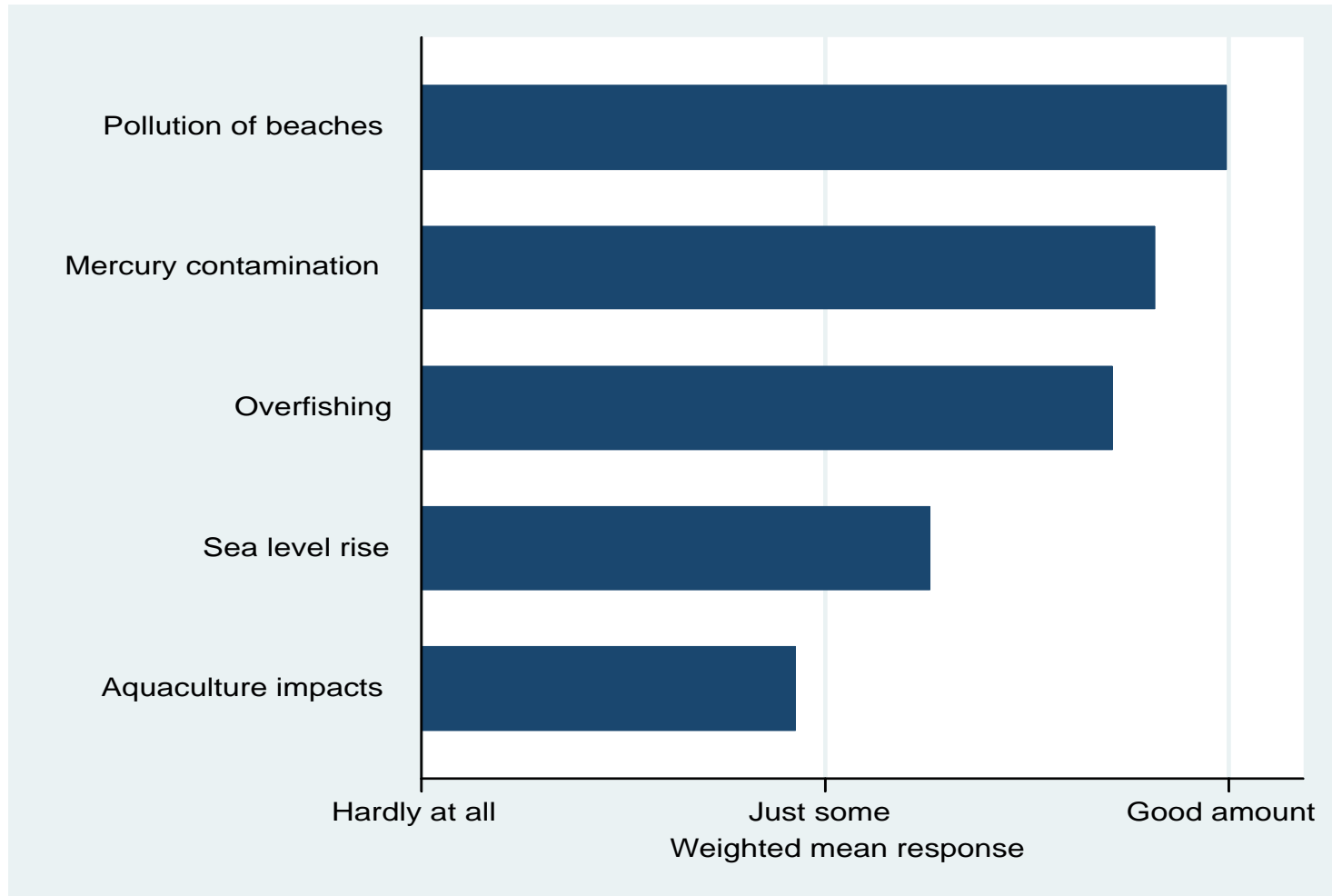
L. Hamilton, Carsey Institute UNH

preliminary Gulf Coast data, 8/24/2010 (n = 974)

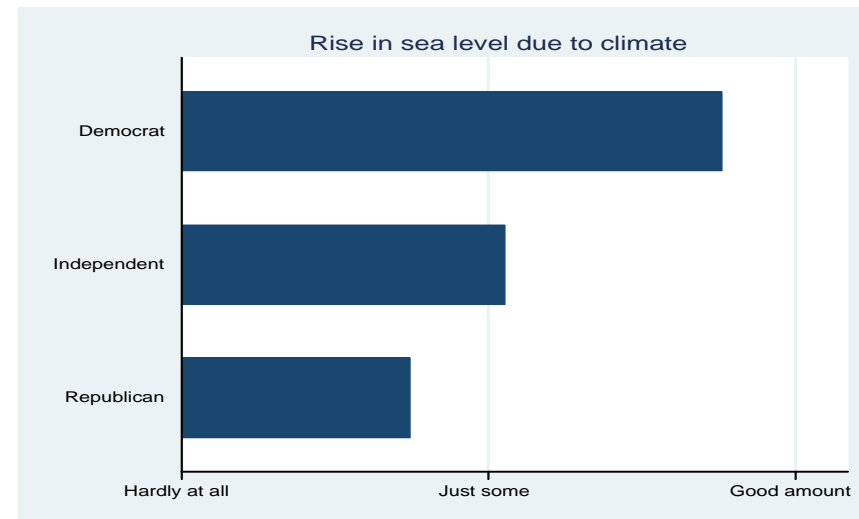
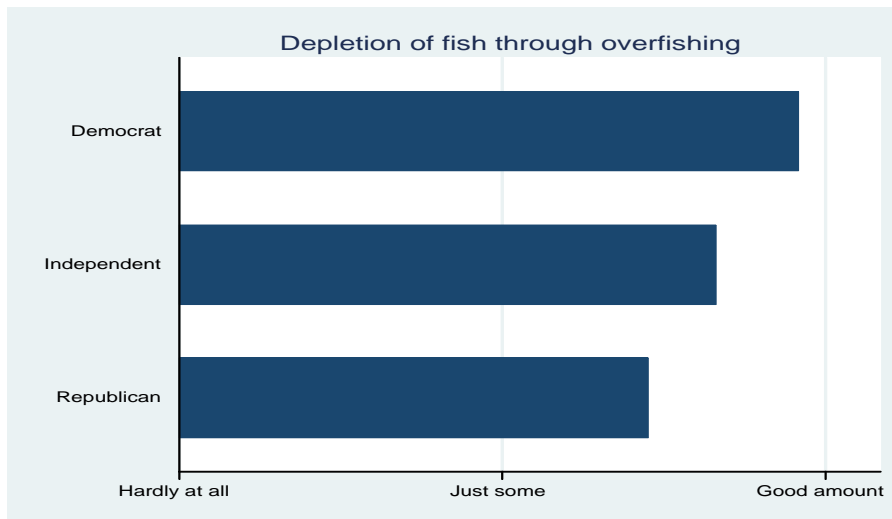
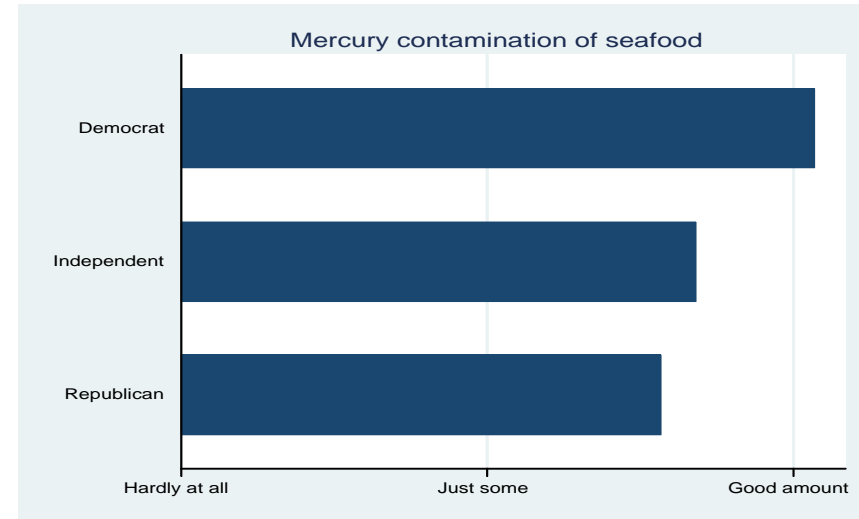
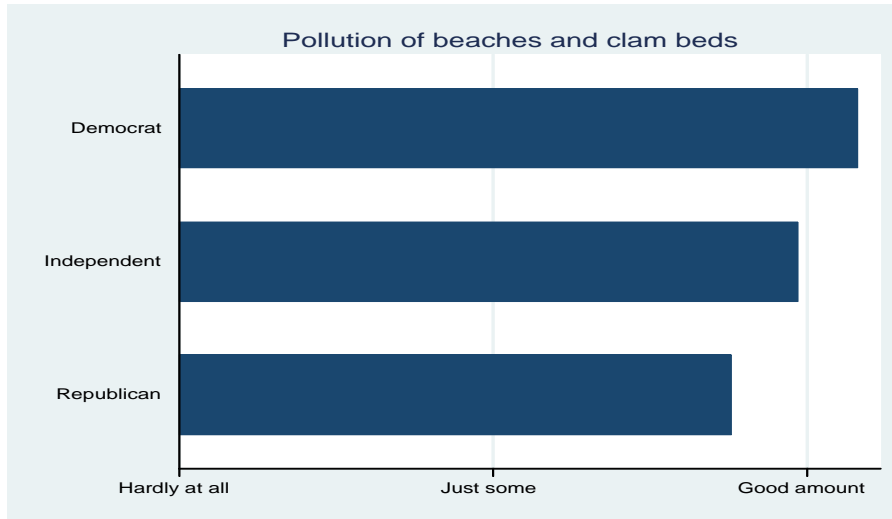
Environmental issues affecting your community? Downeast Maine CERA



How concerned are you about these issues? Downeast Maine CERA



How concerned are you about these issues? – by party



Climate and coastal issues

- * Climate-change issues, whether about the science, present reality, or the future, exhibit very strong partisan divisions.
- * Local environmental issues all exhibit similar, although weaker, partisan divisions.
- * Possibly the wedge-issue polarization of climate and regulation issues is extending to local issues, making these more divisive as well.

For more about these surveys

- **Carsey Institute Briefs**

- *Ocean views: Coastal environmental problems as seen by Downeast Maine residents* (2010)
- *Do scientists agree about climate change? Public perceptions from a New Hampshire survey 2010*
- *Is New Hampshire's climate warming?* (2010)

- **Research articles**

- “Regional variations in perceptions about climate change.” *International J. of Climatology* (2009)
- “Place effects on environmental views.” *Rural Sociology* (2010)

