

Cold Winters Warming?

Perceptions of Climate Change in New Hampshire

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University of New Hampshire

**“What are people saying about climate?”
Coastal Adaptation Workgroup**

**Greenland, New Hampshire
May 13 2019**

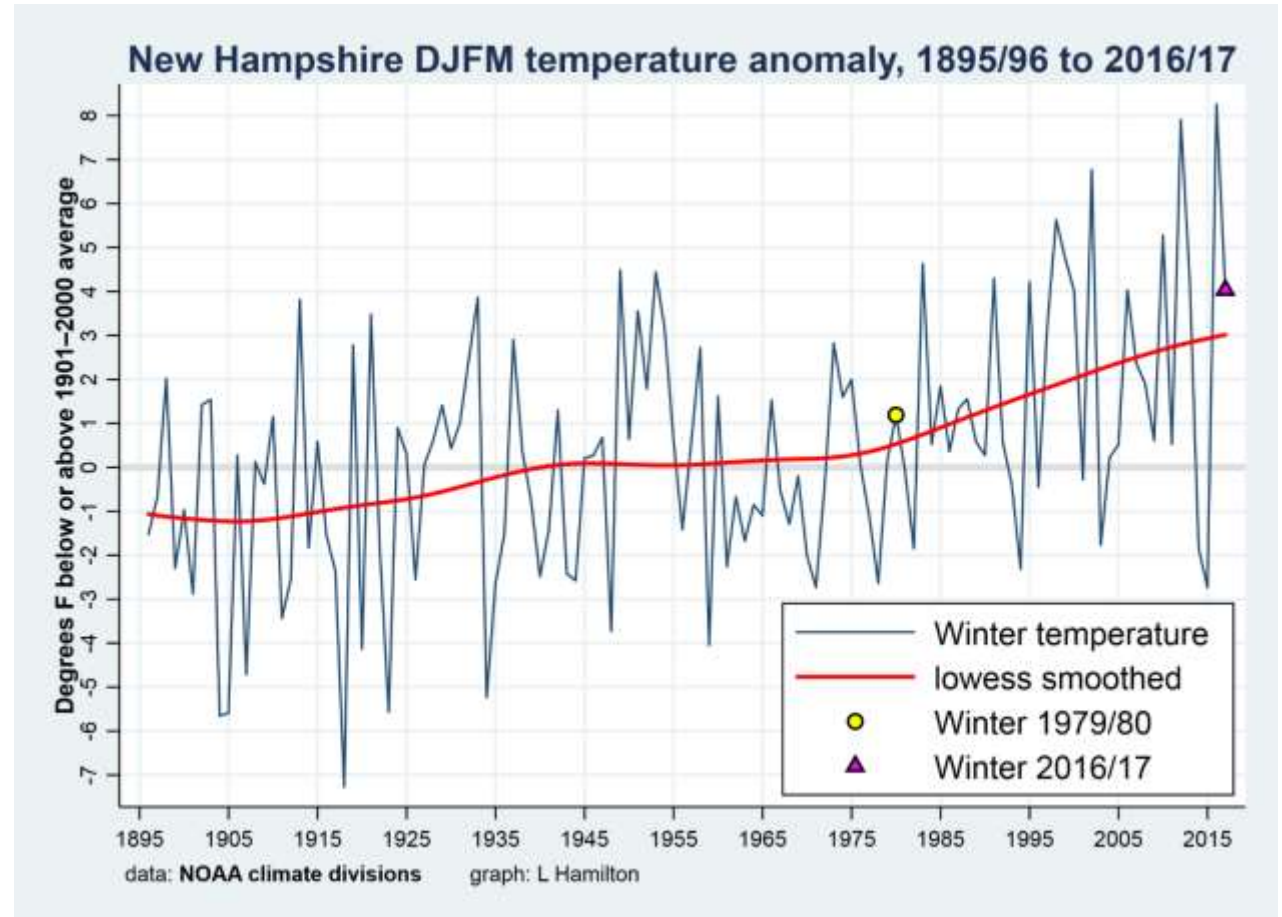
Research supported by grants from the US National Science Foundation (Living Bridge IIP-1230460; PoLAR Climate Change Education Partnership DUE-1239783; New Hampshire EPSCoR EPS-1101245), US Department of Agriculture (Communities and Forests in Oregon 2010-67023-21705 and 2014-68002-21782), Neil and Louise Tillotson Fund of the New Hampshire Charitable Foundation, and the Carsey School of Public Policy and the Sustainability Institute at UNH. Any opinions, findings, and conclusions expressed in this material are those of the author and do not necessarily reflect the views of supporting organizations.



Since 1980, NH
winters have been
warming

7 passed all
previous records

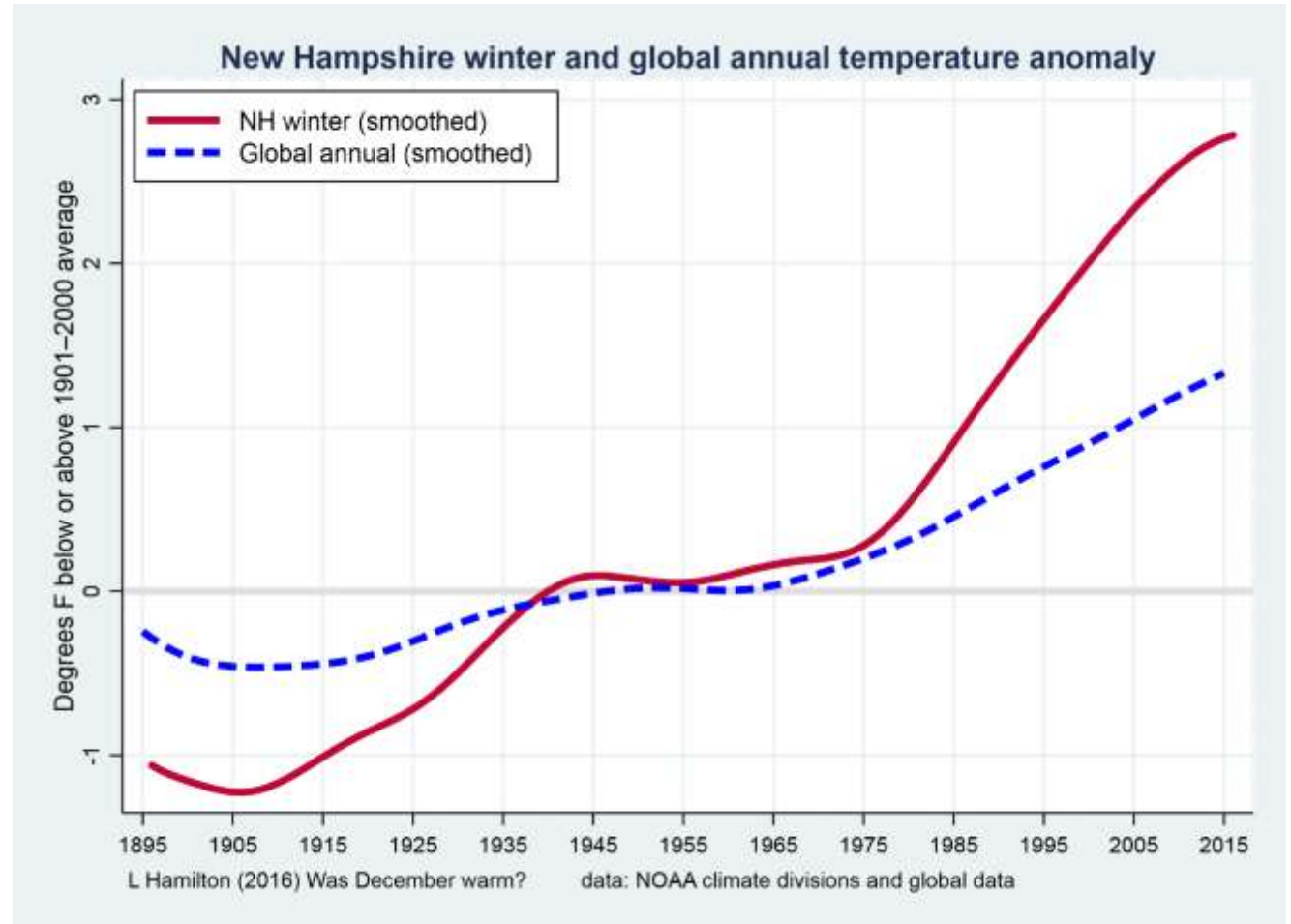
Some recent winters
that *seem* cold
would have been
“warm” earlier



NH winters are
warming
twice as fast
as global
warming

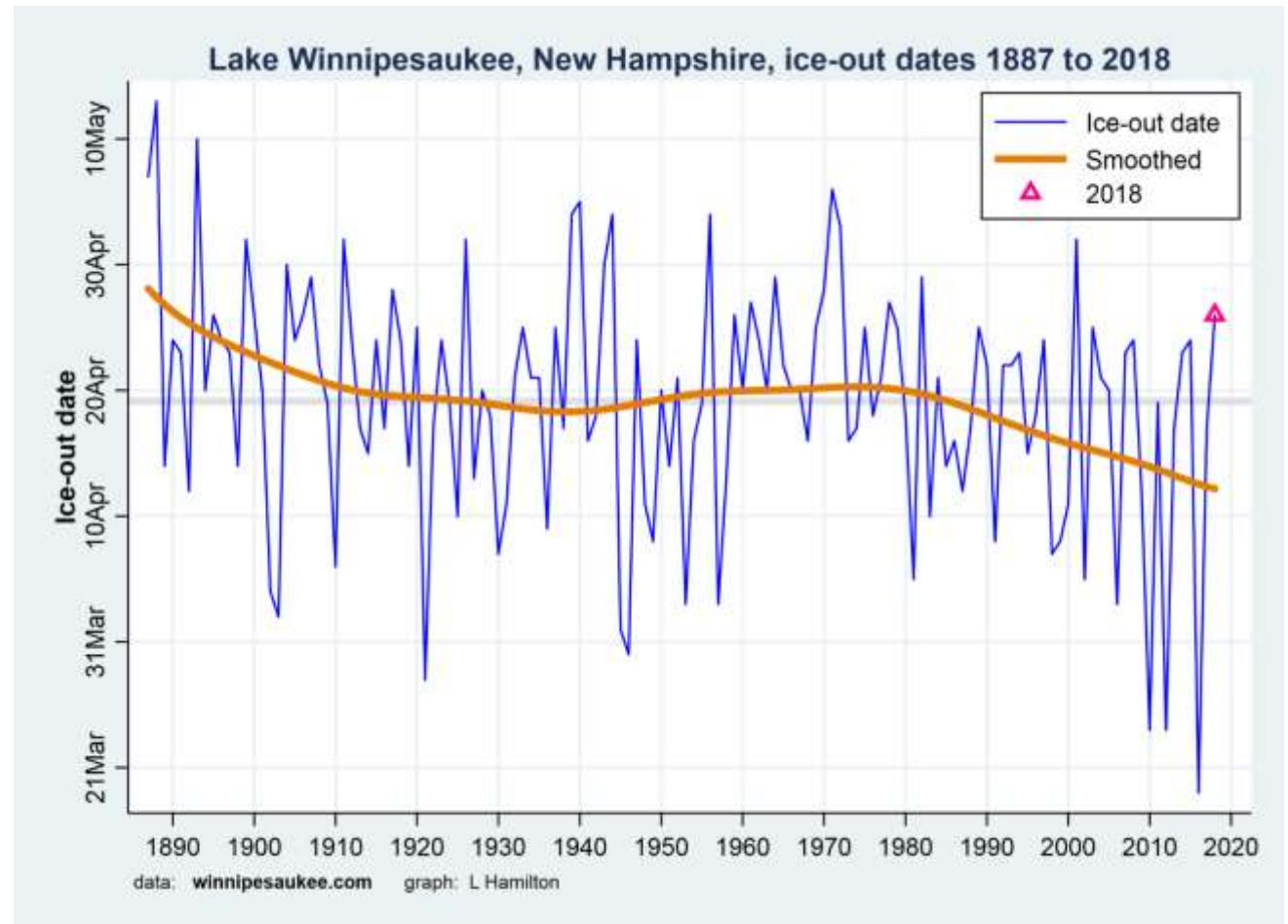
But with
global
signature:

- step
- pause
- takeoff



Lake Winnepesaukee ice-out

(Other data
show global
signature too)





How did I start down this road?

**There's a forest behind my house
where I've walked, skied or
snowshoed daily for past 40
years**





I noticed winters changing,
long before I ever heard the
term “climate change”

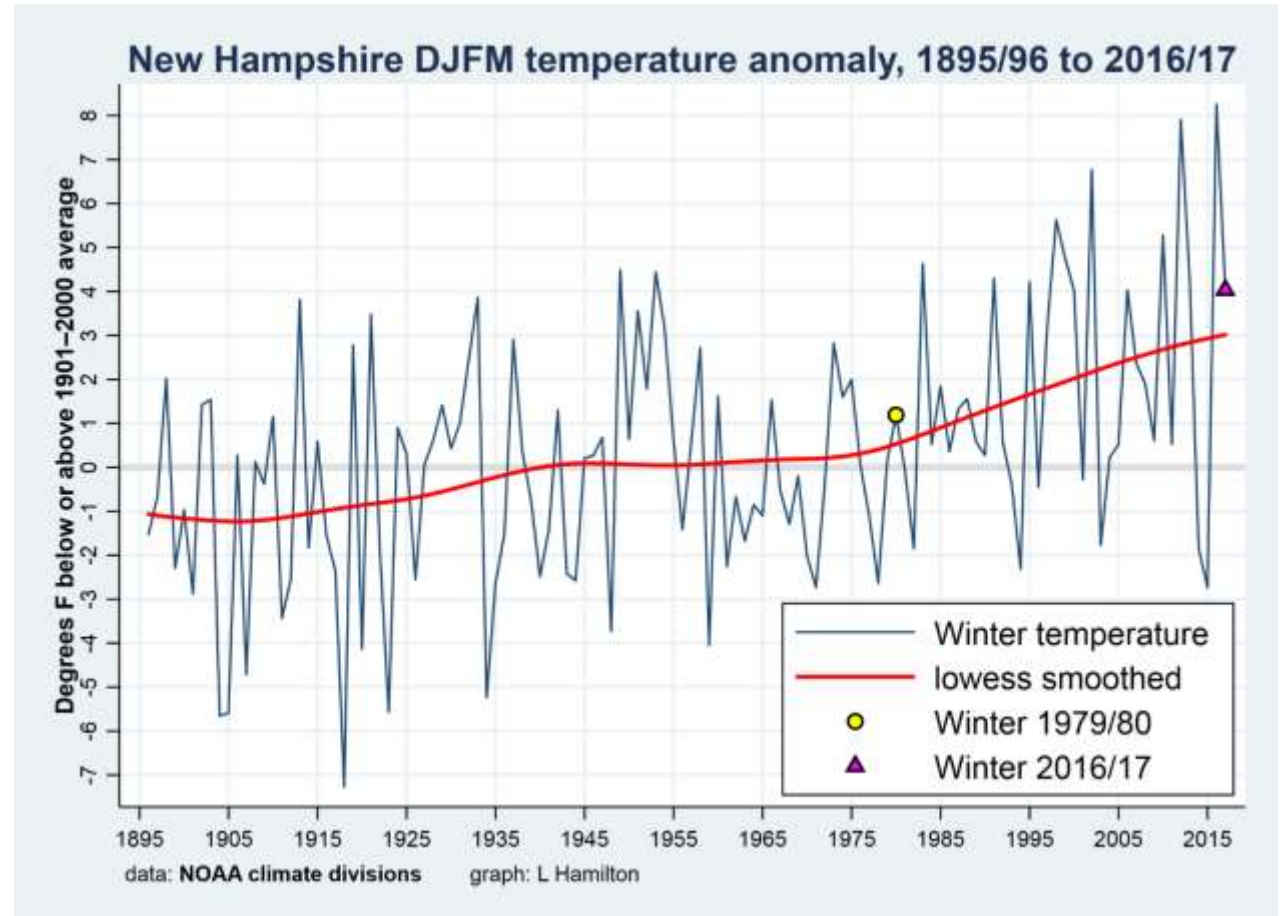
Maybe you’ve seen changes
too, around places you have
lived?

<= **My daughter in 1980**

Since 1980, NH
winters have been
warming

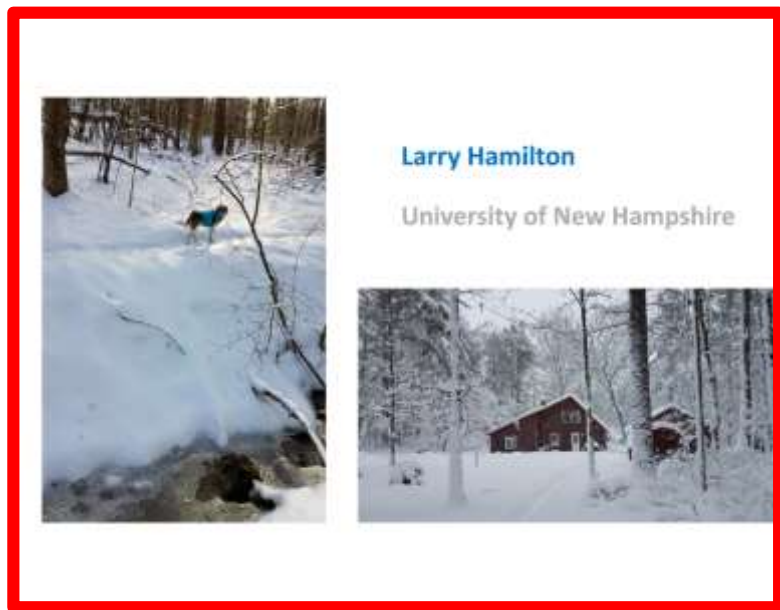
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Some recent winters
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These last few slides are from a “Pub Talk” last year in eastern Oregon, at the **Range Rider Saloon**

Talking about climate change



Our standard survey question about climate change:

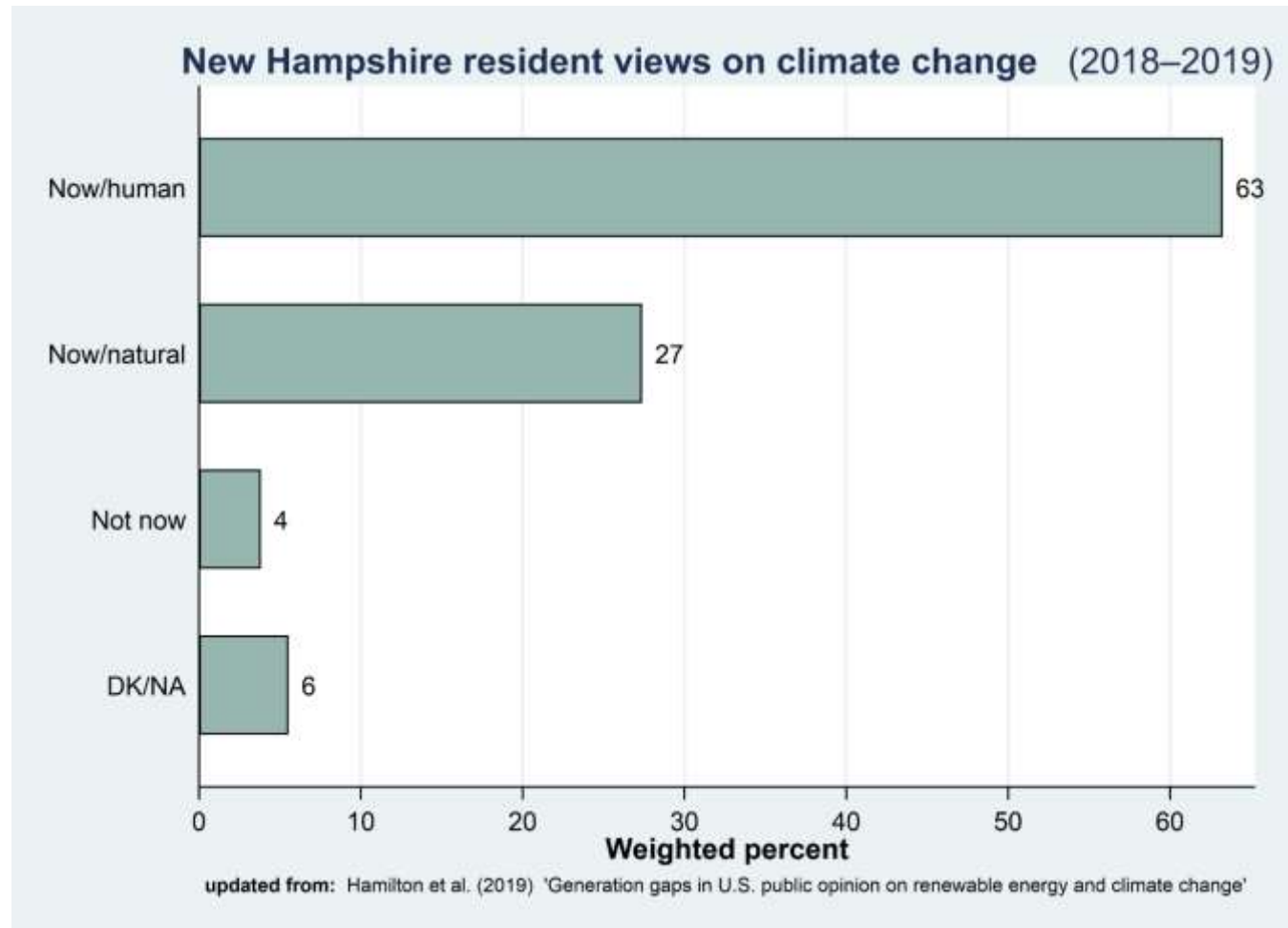
Which statement do you think is more accurate?

- Climate change is happening now, caused mainly by human activities
- Climate change is happening now, but caused mainly by natural forces
- Climate change is not happening now
- I don't know

Asked 4 times/year on the Granite State Poll since 2010

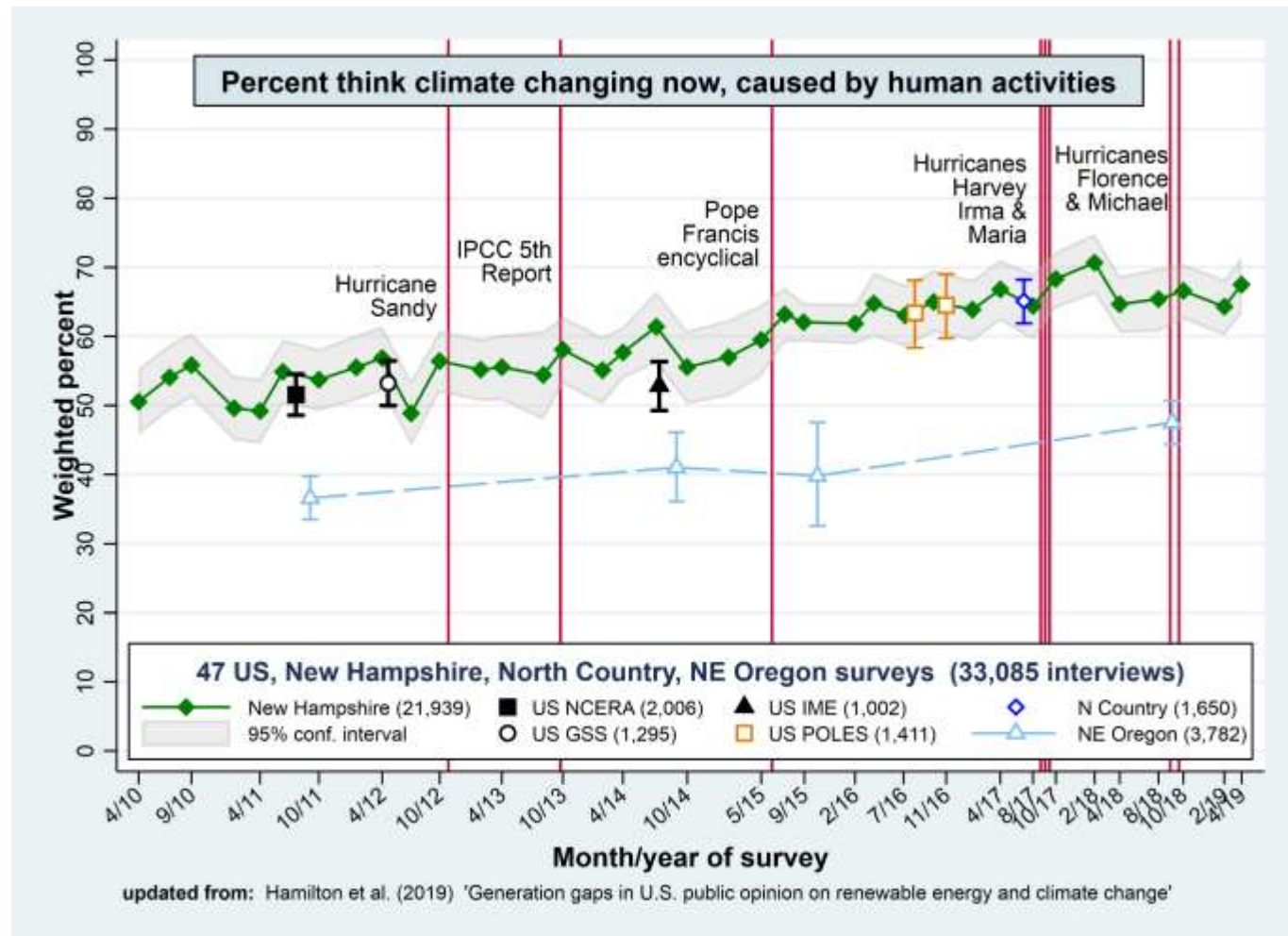
**2018–2019
Granite State
Poll: 63%**

*climate change is
happening now,
caused mainly by
human activities*



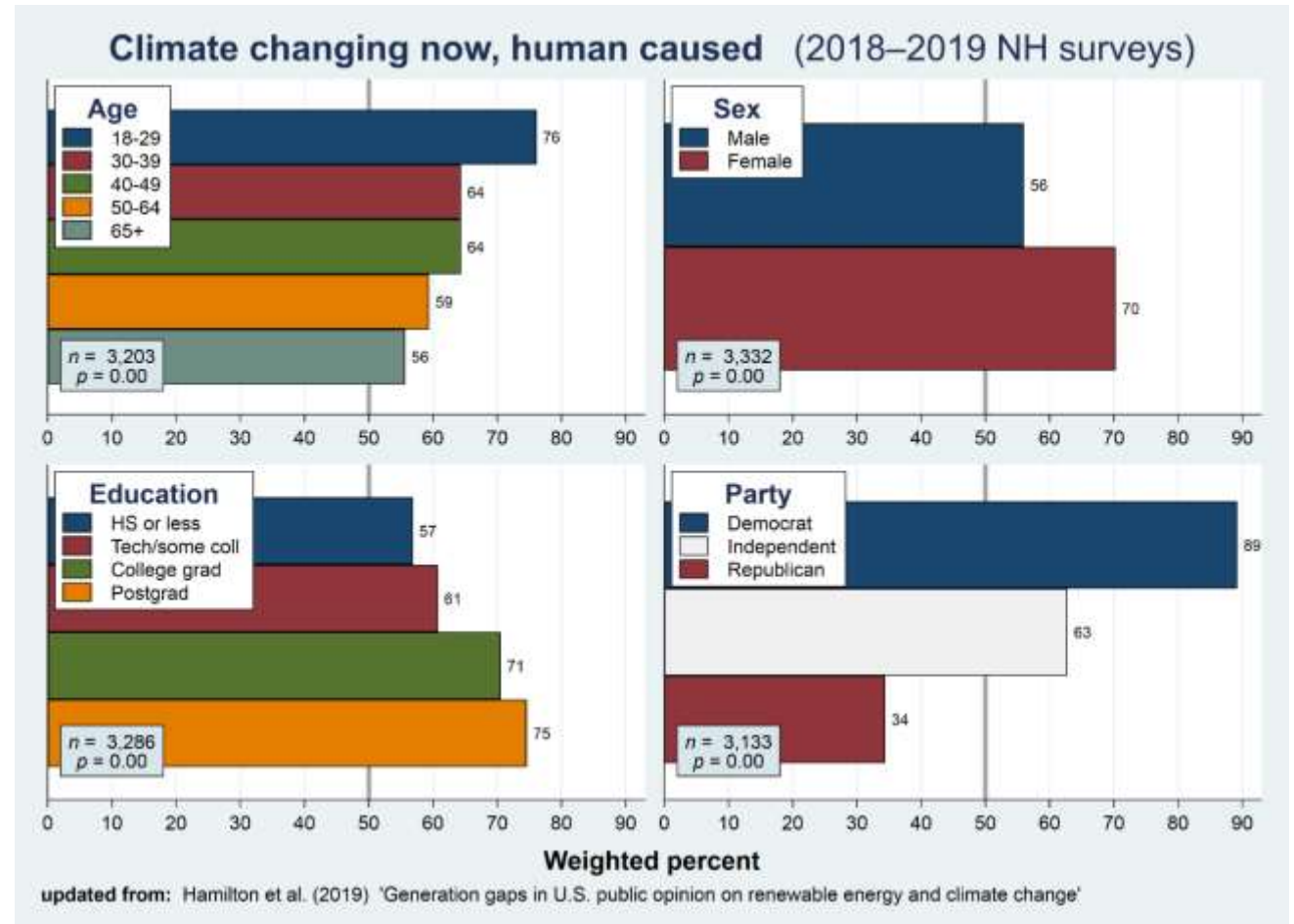
Climate change happening now, caused mainly by human activities tracked on 47 surveys

NH is not a bad proxy for US on this issue



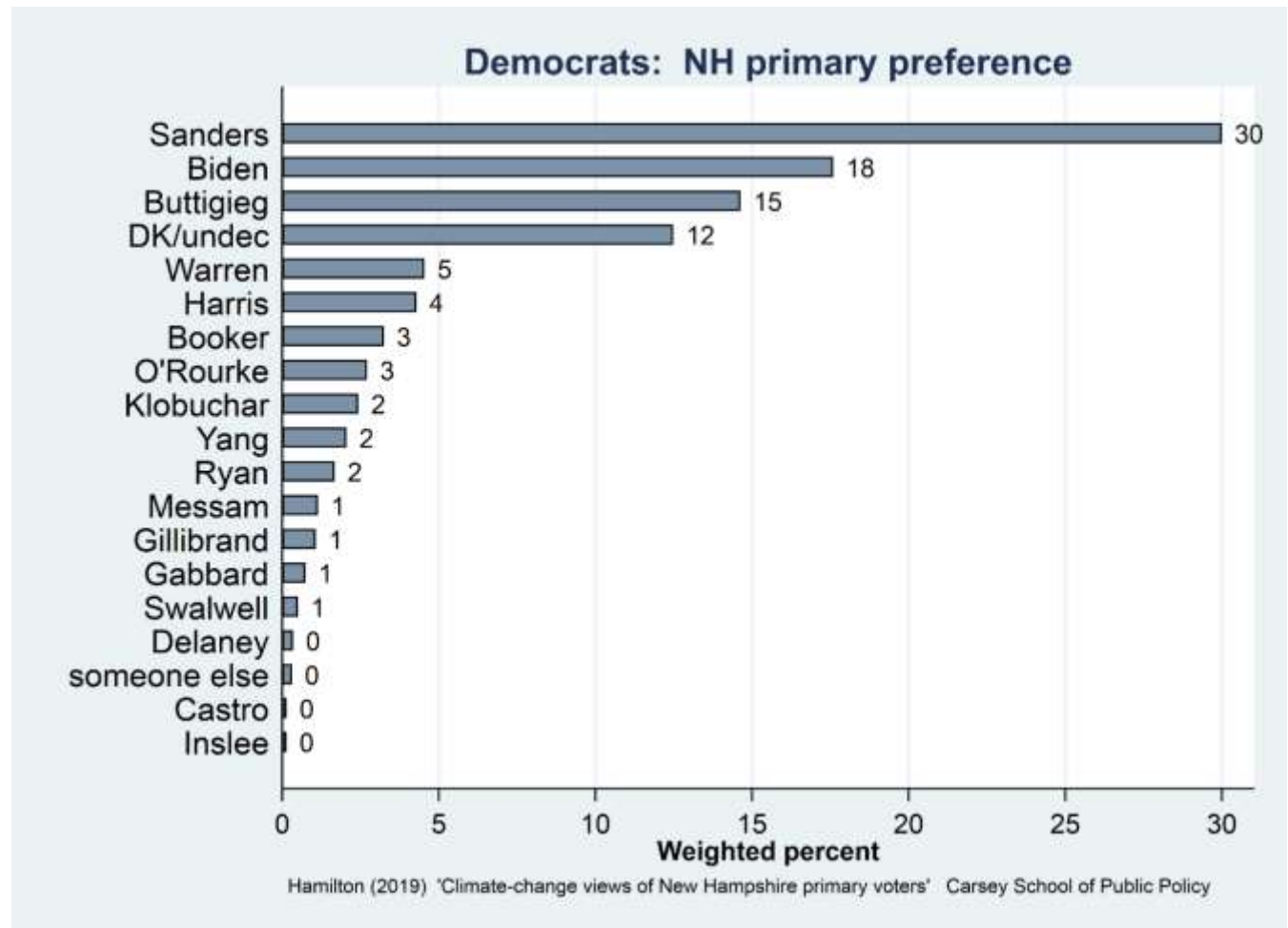
Majority of NH residents agree human activities are changing climate:

- young & old
- male & female
- any education
- not any party



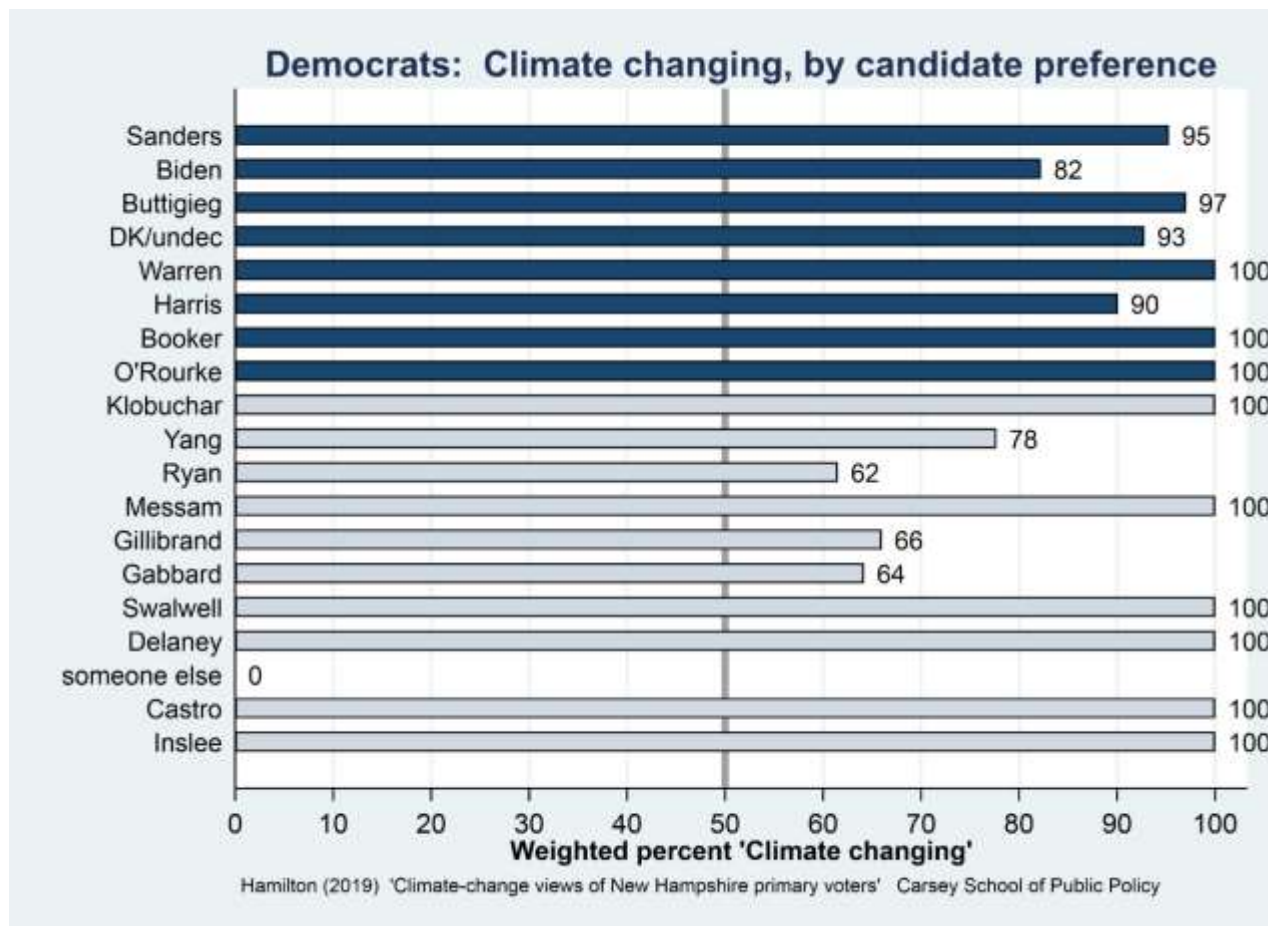
April 2019 Granite State Poll

Democrats:
who would you
vote for, if
primary held
today?



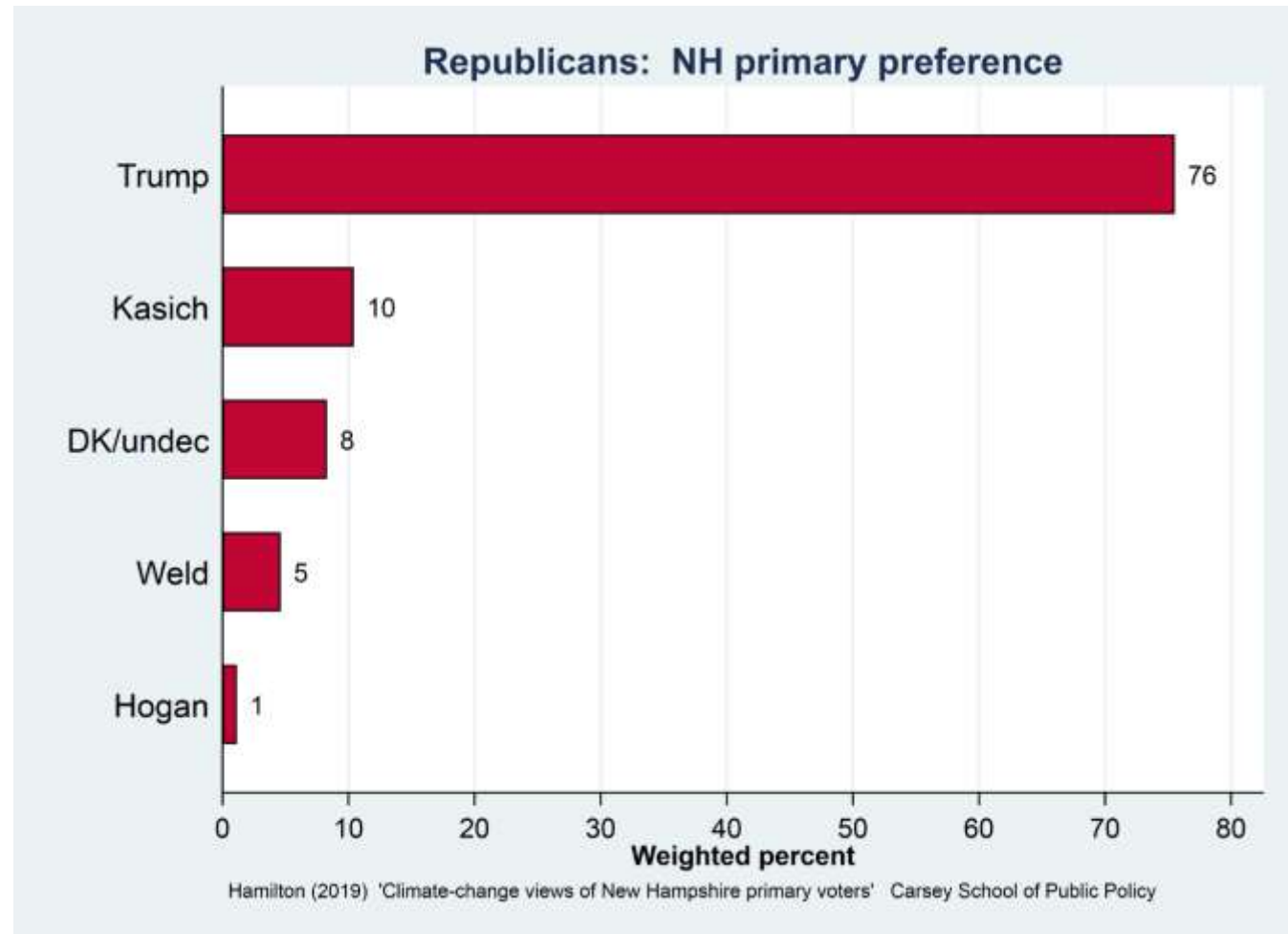
April 2019 Granite State Poll

Democrats: Climate views of each candidate's supporters



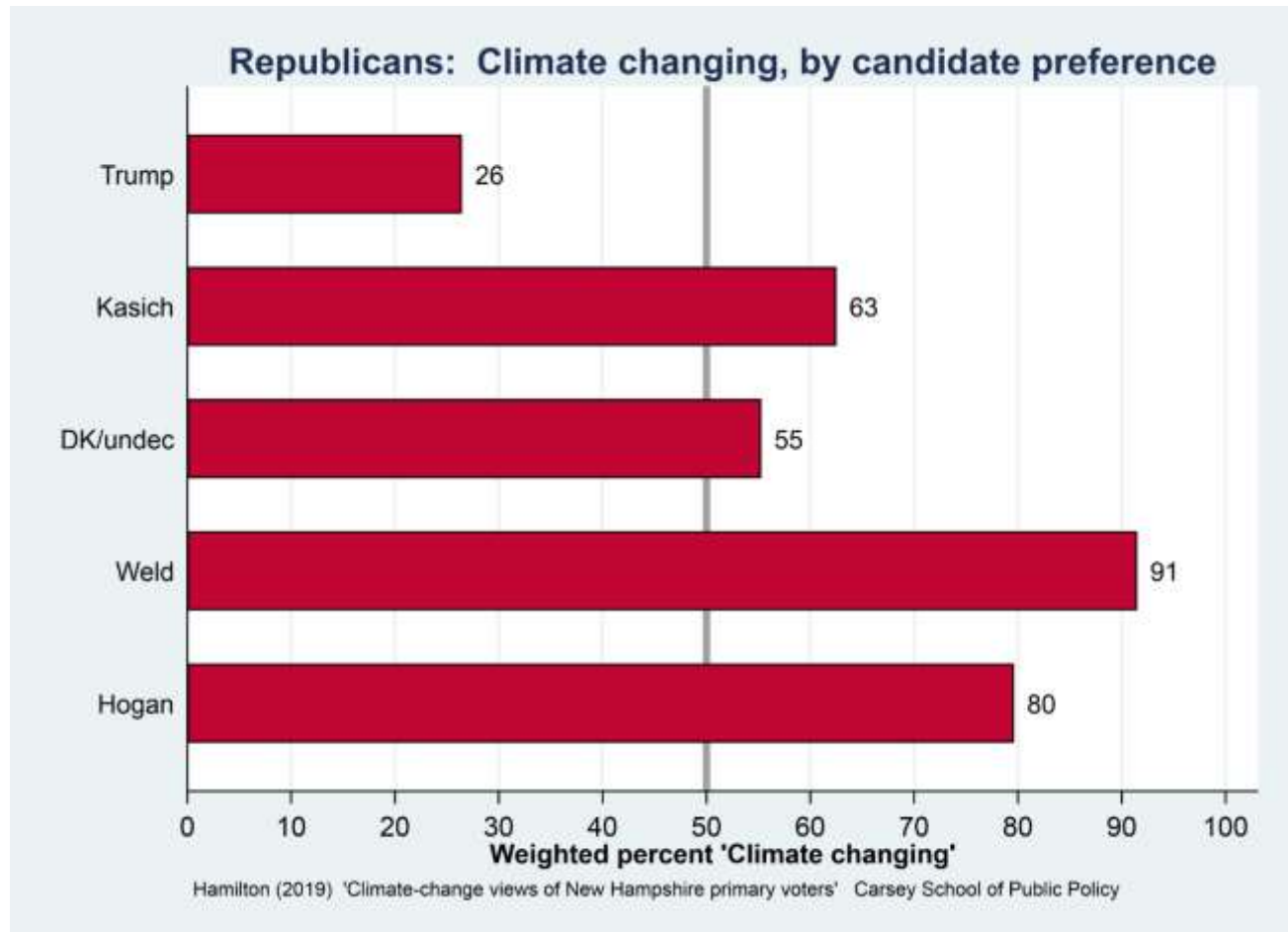
April 2019 Granite State Poll

**Republicans:
who would you
vote for, if
primary held
today?**



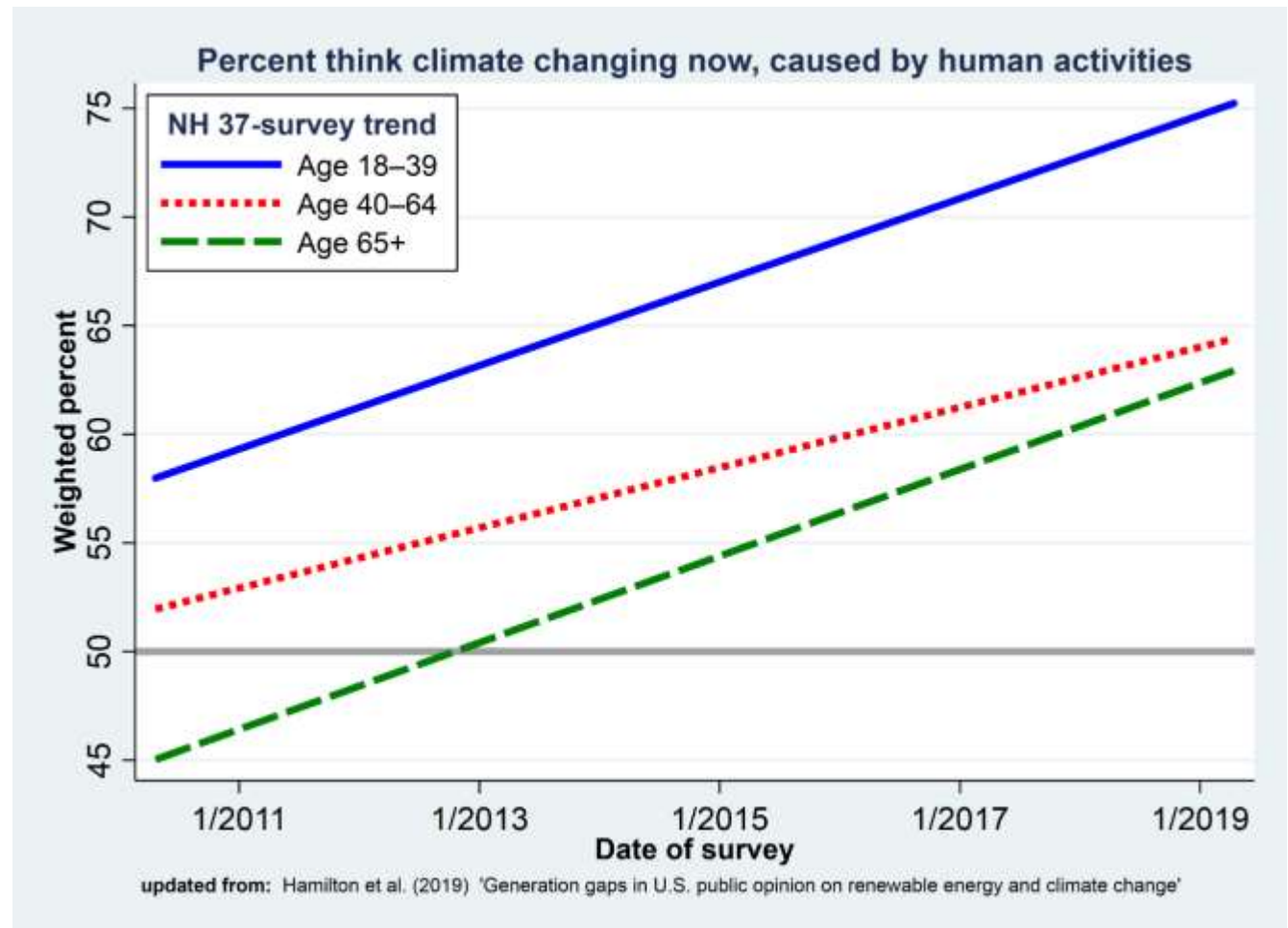
April 2019 Granite State Poll

Republicans: Climate views of each candidate's supporters



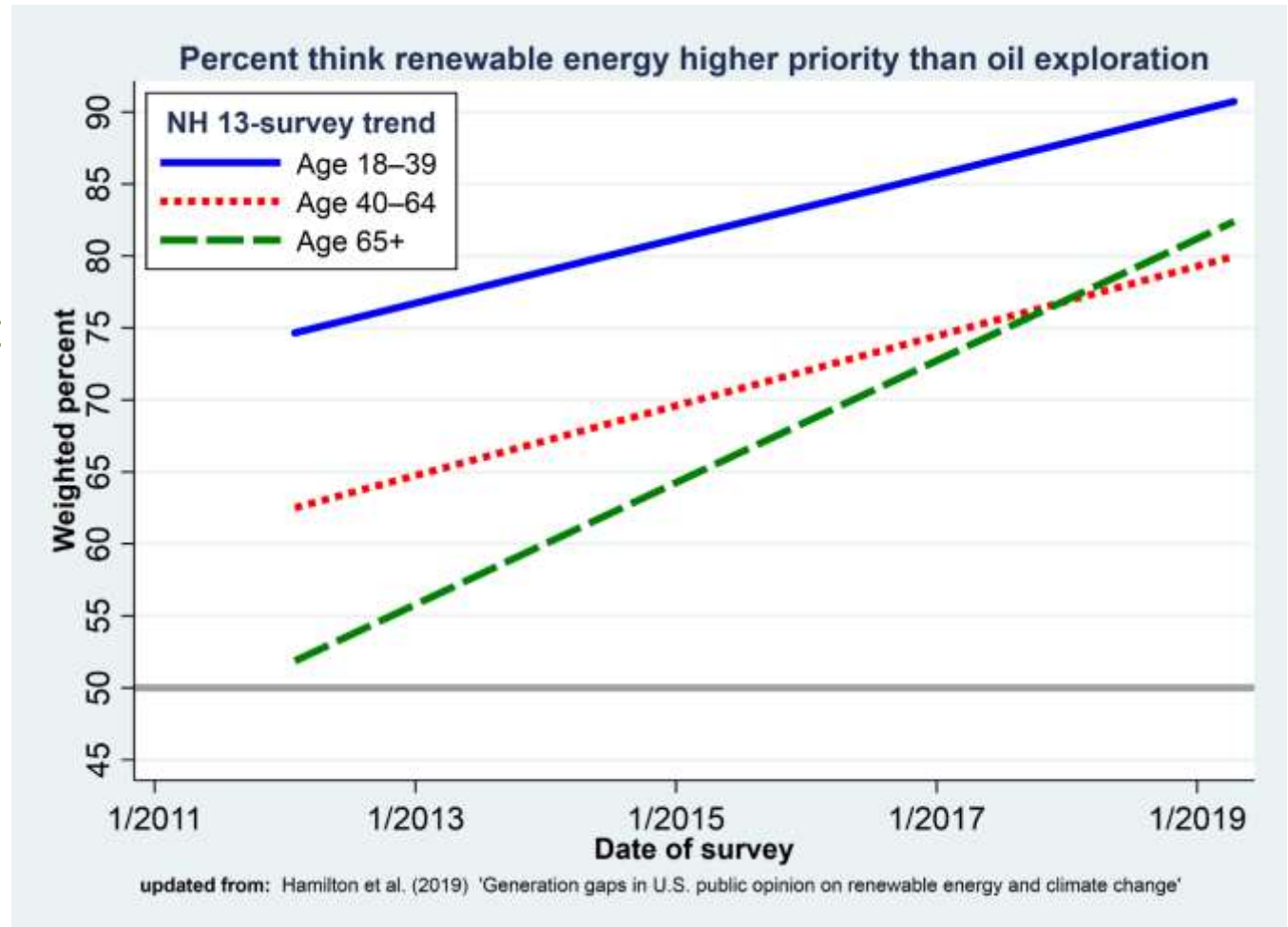
Generation gap

- **Millennials** recognize that humans are changing the climate
- But recognition is rising among all age groups



Generation gap

- **Millennials** also are much more likely to support renewable energy development
- As with climate, support is rising among all age groups



The Future?

- Upward trends among all age groups show gradually rising recognition that humans are changing the climate
- Public opinion has not responded to sudden events such as hurricanes, but there may be cumulative effects
- Science communication has cumulative effects as well
- Younger adults more likely to recognize the reality of human-caused climate change
- If their voting participation rises, change might come faster

Surveys analyzed in Carsey briefs & research papers, write me for copies

Lawrence C. Hamilton

PERCENTAGE WHO THINK THAT CLIMATE CHANGE IS HAPPENING NOW AND CAUSED MAINLY BY HUMAN ACTIVITIES, BY AGE GROUP


$$\text{Inkblotting: } 14.21 + 0.11 \text{ (Mean Speed)} = 12.61 \text{ (Mean)} \times 0.914 \\ \text{convert to inches} = 40.9 \text{ (in)} \times 0.0254$$

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Crabtree Hamilton LC, Hester J, Lemcke-Bianchini M, Moore CM. *Software TQ* (2015) Tracking Public Beliefs About Anthropogenic Climate Change. *PLoS ONE* 10(2): e0138208. doi:10.1371/journal.pone.0138208

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A simple question about climate change, with one choice designed to match consensus statements by scientists, was asked on 35 US nationwide, single-state or regional surveys from 2010 to 2015. Analysis of these data (over 28,000 interviews) yields robust and exceptionally well replicated findings on public beliefs about anthropogenic climate change, including regional variations, change over time, demographic bases, and the interacting effects of respondent education and political views. We find that more than half of the US public accepts the scientific consensus that climate change is happening now, caused mainly by human activities. A sizable, politically opposite minority (about 30 to 40%) considers the fact of climate change, but believe it has mainly natural causes. Few (about 10 to 15%) say they believe climate is not changing, or express no opinion. The overall proportions appear relatively stable nationwide, but exhibit place-to-place variations. Detailed analysis of 21 consecutive surveys within one fairly representative state (New Hampshire) finds a mild but statistically significant rise in agreement with the scientific consensus over 2010–2015. Effects from daily temperature

National Issue Brief #100

Spring 2016

Family, Politics, and Recollections of Weather

and Mary Lemcke-Stampona

cracked its warmest temperature exceeded temperatures by a wider historical records dating

an ongoing study of Granite State Poll
that New Hampshire's
nally colder, warmer, or
recalled or guessed that
e warmer than aver-
e; others thought that
ge. Sixteen percent
average.

ies Fahrenheit above
it topped the second-
1.7°F and the third-

h. temperatures were among the top fifteen (in the 2013-2016 March) overall the 136. another Granite thought that the older, warmer, or snow through much of spring (both winter of 2014-2015) 73 percent recognized

KEY FINDINGS

1

December 2013 was New Hampshire's warmest December on record. And by February 2014, only 63 percent remembered that the month was just over their shoulder.

73%

The 2015-2016 cold season was the warmest on record for New Hampshire. By April 2016, 73 percent acknowledged that the winter had been warmer than average.



Political independents and Tea Party supporters, as well as people who do not believe that humans are changing the climate, voted less likely to recall the worst environmentalists.



These results suggest that, even for such immediate phenomena as record local weather, climate change beliefs exert some influence on perceptions.

But who recalled the unusual season and who did not? The two surveys found no significant differences in the accuracy of responses by men and women or by age groups. Nor did temperatures on the day of interview seem to matter. Married respondents, however, and people with children at home tended to be more aware of recent warmth. Awareness also was higher among those who agree with the scientific consensus on climate change. Connections between climate-change beliefs and perceptions about weather have been observed in other studies, although not with regard to such extreme and recent local events.



Questions?

(back at the Range Rider Saloon)