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New Hampshire's *New Normal*



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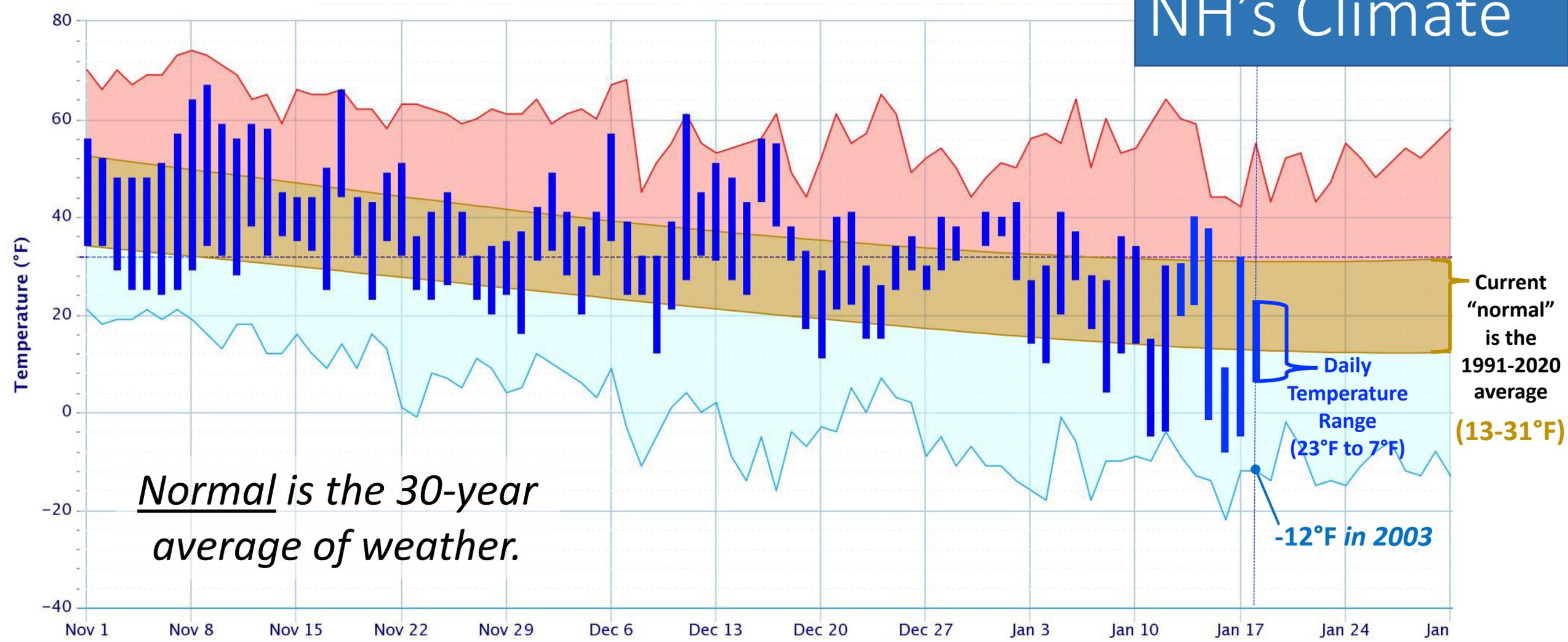
DEPARTMENT OF GEOGRAPHY

NEW HAMPSHIRE STATE CLIMATE OFFICE

UNIVERSITY OF NEW HAMPSHIRE

Daily Temperature at Jaffrey, NH – Winter 2021-22

NH's Climate



Normal is the 30-year average of weather.

Current "normal" is the 1991-2020 average (13-31°F)

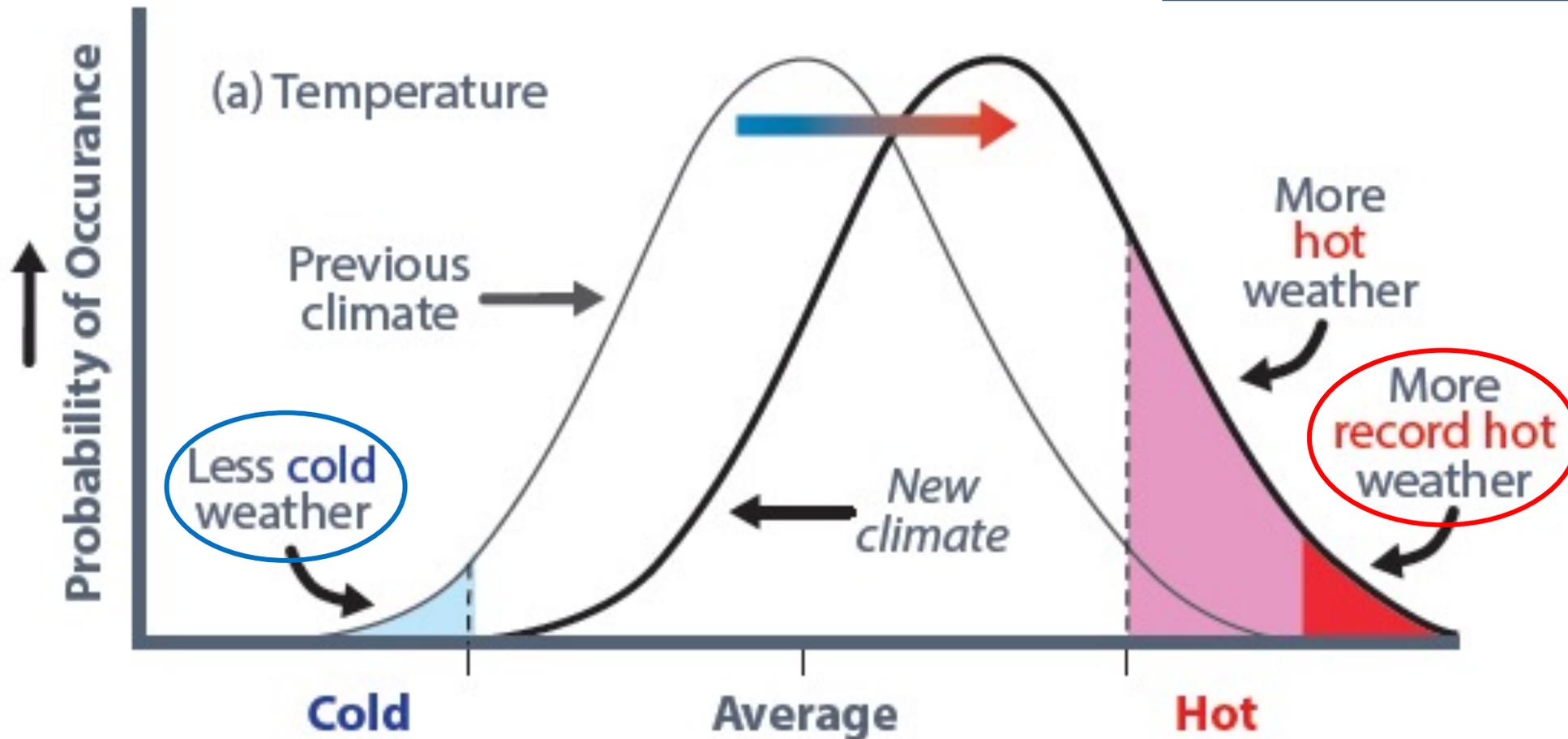
Daily Temperature Range (23°F to 7°F)

-12°F in 2003

Observed, record, and normal daily temperature (°F) at Jaffrey, NH – Winter 2021-22 (Figure source: Northeast Regional Climate Center).



Our Changing Climate

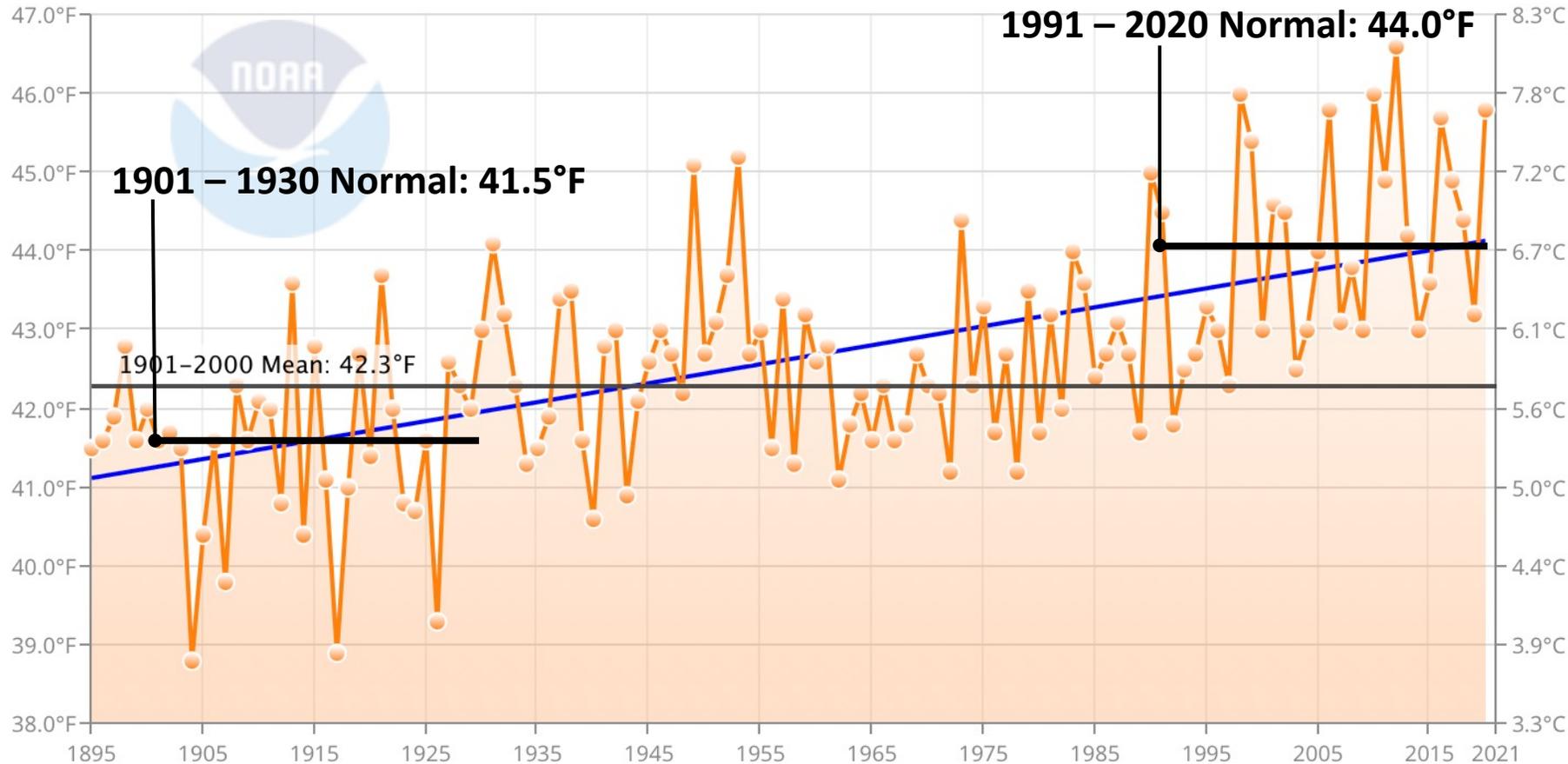


A warming climate is characterized by greater warm and fewer cold extremes

Schematic diagram of shifting climate normal (Figure source: IPCC Working Group II - <http://ipcc-wg2.gov/SREX/>)

Our Changing Climate

NH Average Annual Temperature – 1895 to 2020



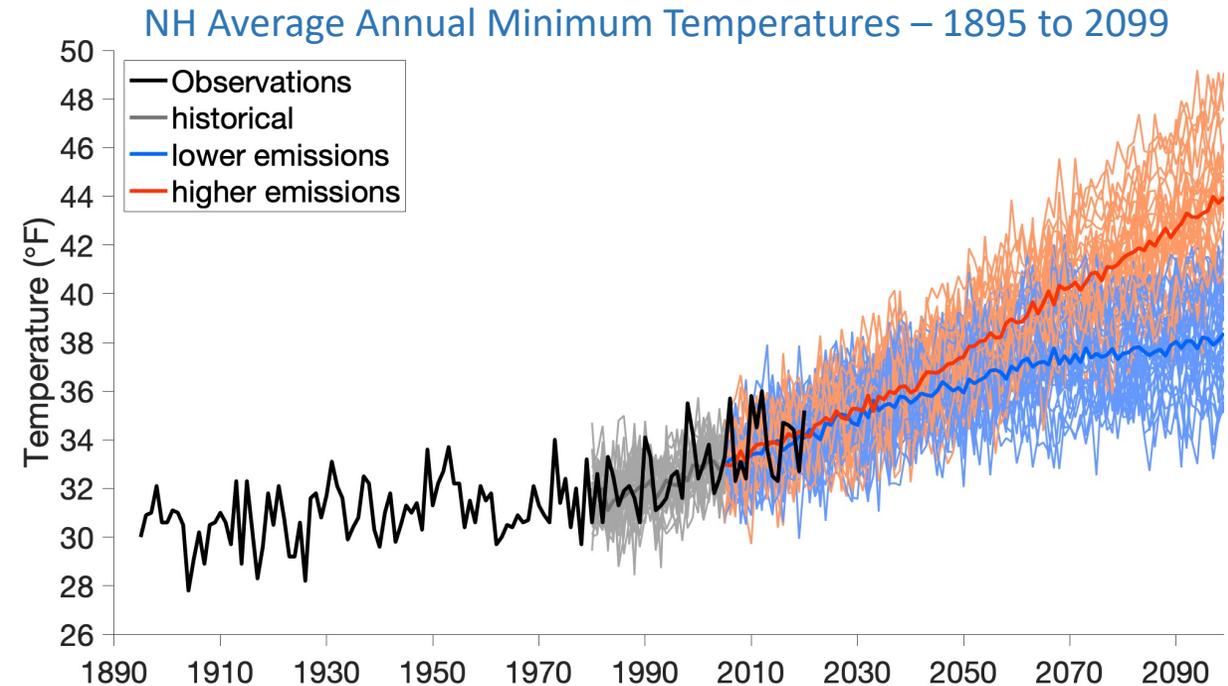
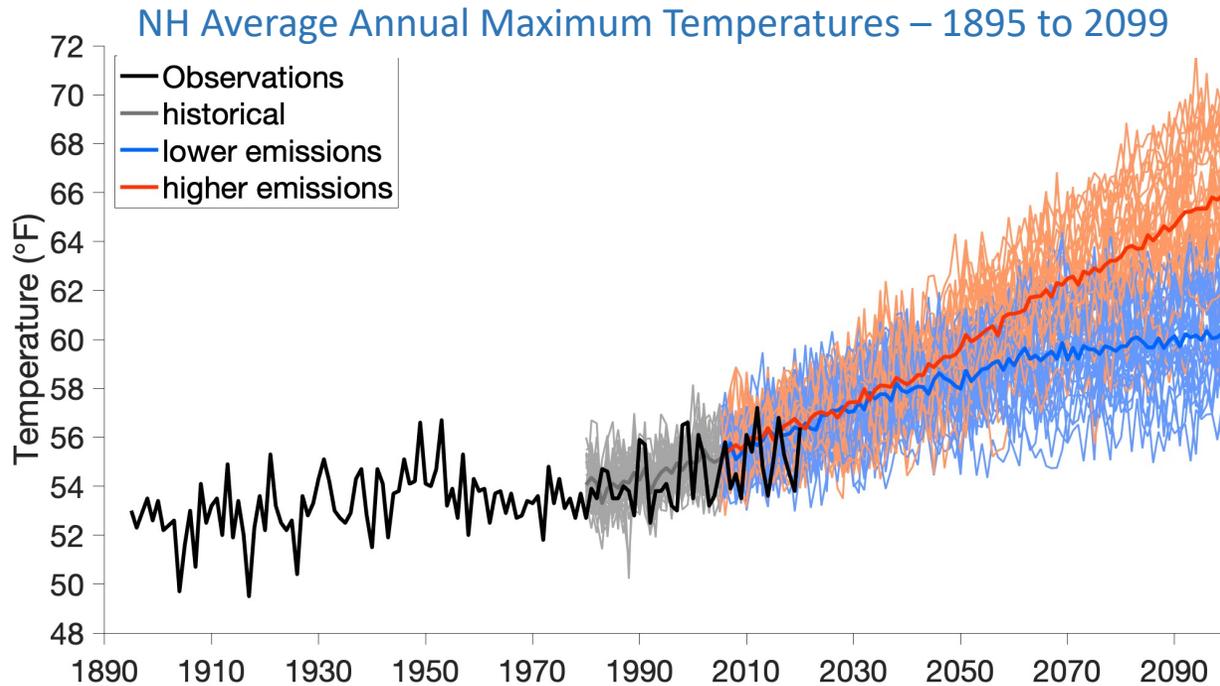
New Hampshire Average Annual Temperature (Figure source: NOAA/NCEI).

**New England is
warming faster than
the U.S.**

- NH annual temperature increased by $>3^{\circ}\text{F}$ since 1895
- Significant increases in extreme heat (days $> 90^{\circ}\text{F}$; nights $> 70^{\circ}\text{F}$).

Our Changing Climate

NH annual temperature likely to increase an additional 1°F by 2035

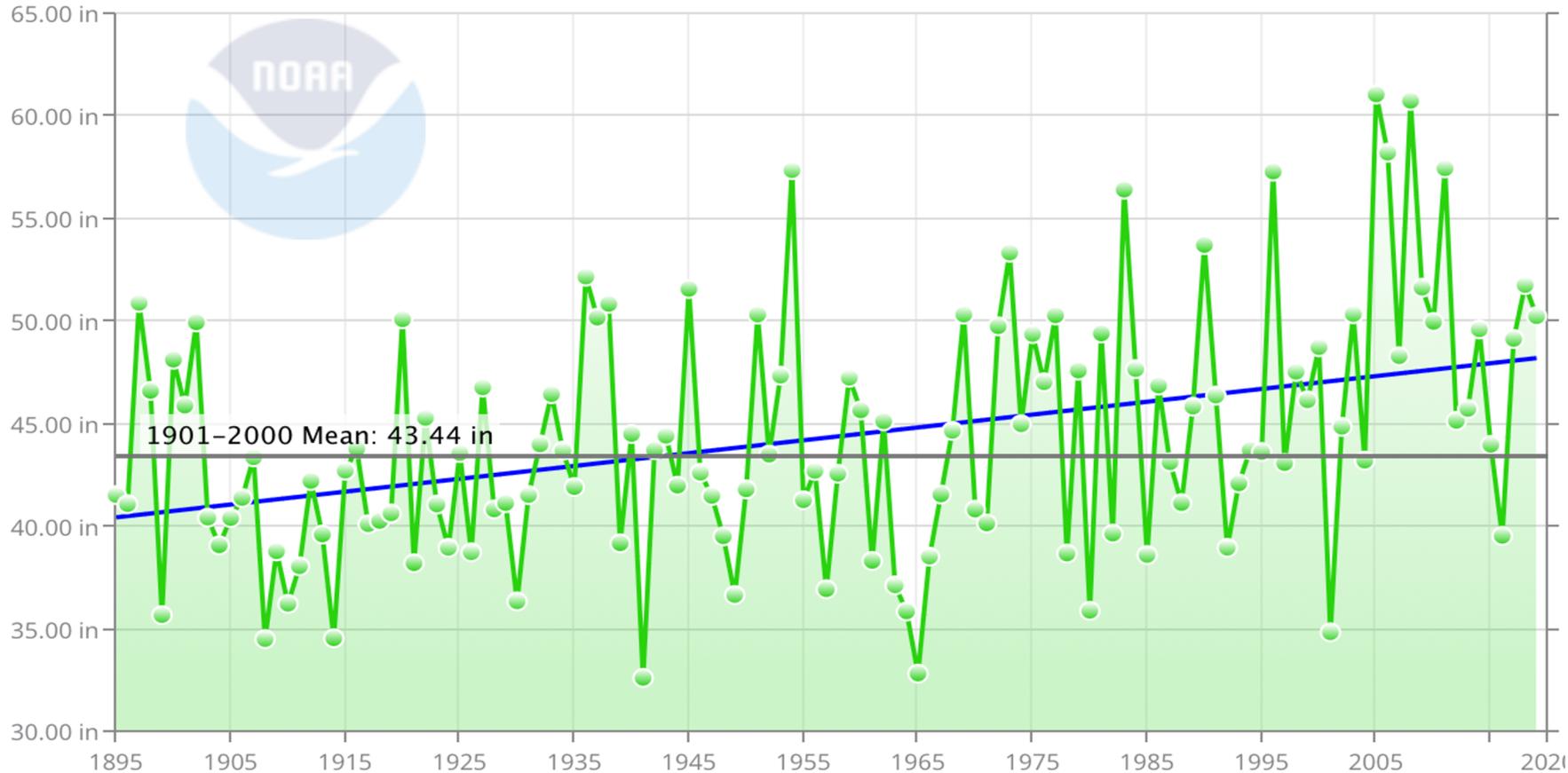


Observed (1895-2020) and projected (2006-2099) New Hampshire annual maximum and minimum temperature (Figure source: NHDES).



Our Changing Climate

Total Annual Precipitation – 1895 to 2020



New Hampshire Total Annual Precipitation (Figure source: NOAA/NCEI).

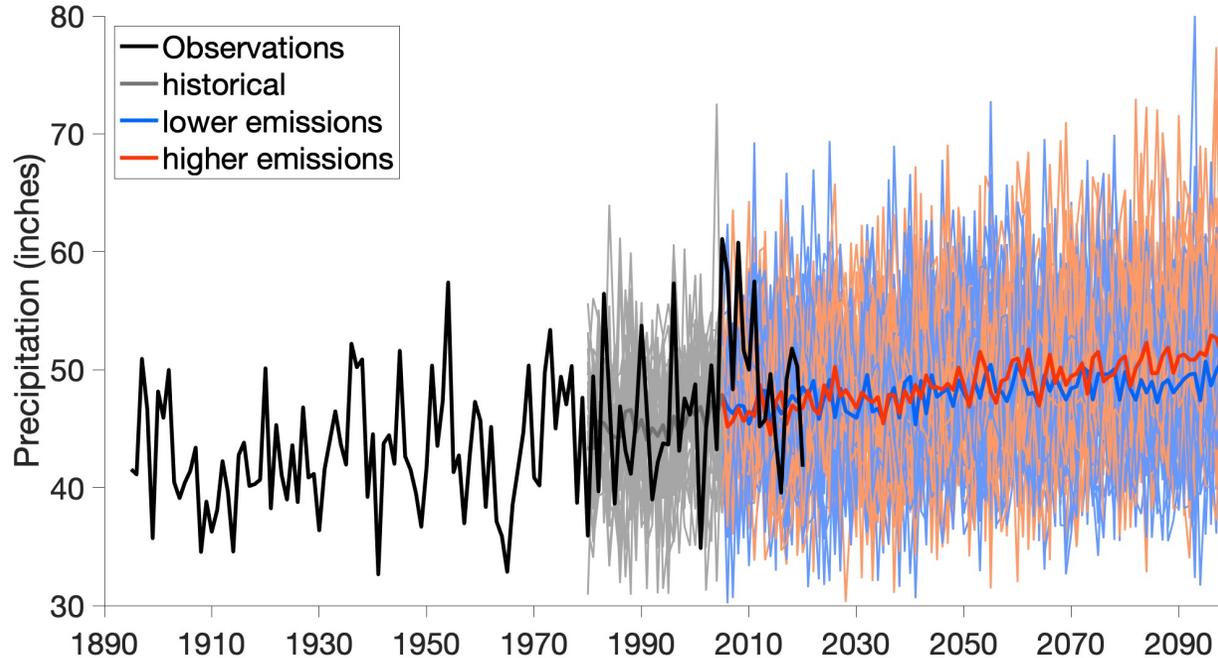
Increased precipitation due to increased intensity.

- NH total annual precipitation increased by >8 inches since 1895.
- Greatest increase in extreme events

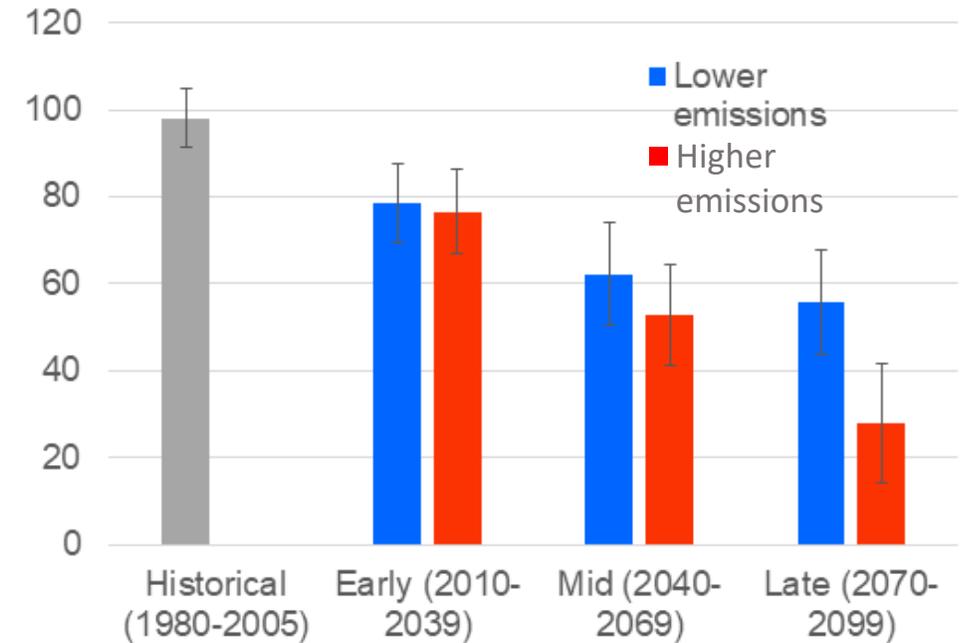
Our Changing Climate

NH annual precipitation likely to increase by 10% by 2035

NH Total Annual Precipitation – 1895 to 2099



NH Annual Days with Deep Snow Cover (>6in.) – 1980 to 2099



Observed (1895-2020) and projected (2006-2099) New Hampshire total annual precipitation and deep snow cover days (Figure source: NHDES).

Our New Normal

“Climate change affects the natural, built, and social systems we rely on individually and through their connections to one another. These interconnected systems are increasingly vulnerable to cascading impacts that are often difficult to predict, threatening essential services within and beyond the Nation’s borders.”

- Fourth National Climate Assessment (2018)



Our New Normal

Maintaining Communities and Their Interconnectedness

- Infrastructure is not designed for projected future climate conditions.
- Services and resources at risk for disruption during severe weather.

Flood damage on Old Town Farm Road in Peterborough 7/18/2021.
(Photo credit: Swanzey Fire Chief William Gould via SentinelSource.com)

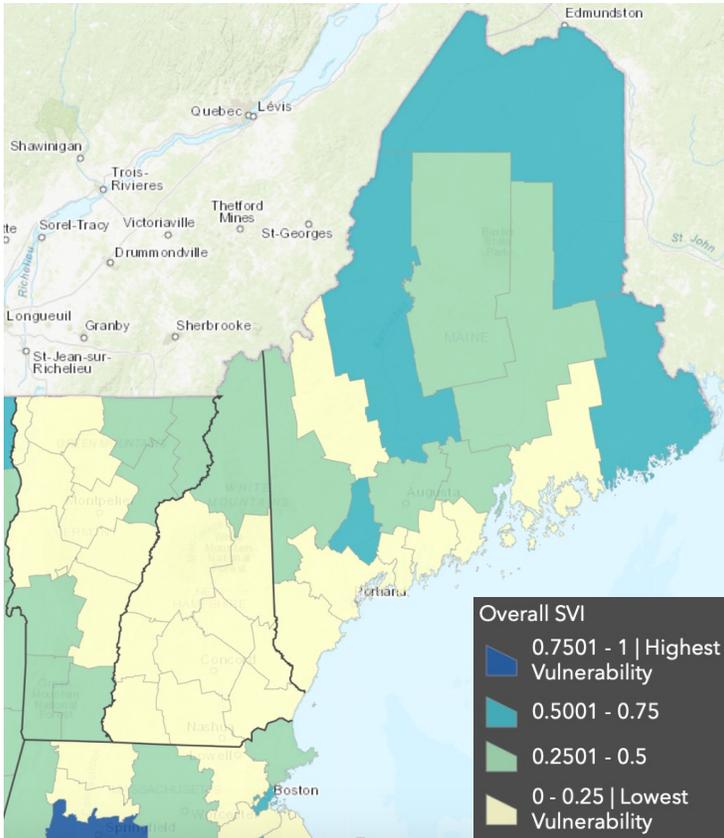


Our New Normal

Social vulnerability refers to a community's ability to cope with external stressors (e.g. severe weather).

Vulnerability to climate change increases for:

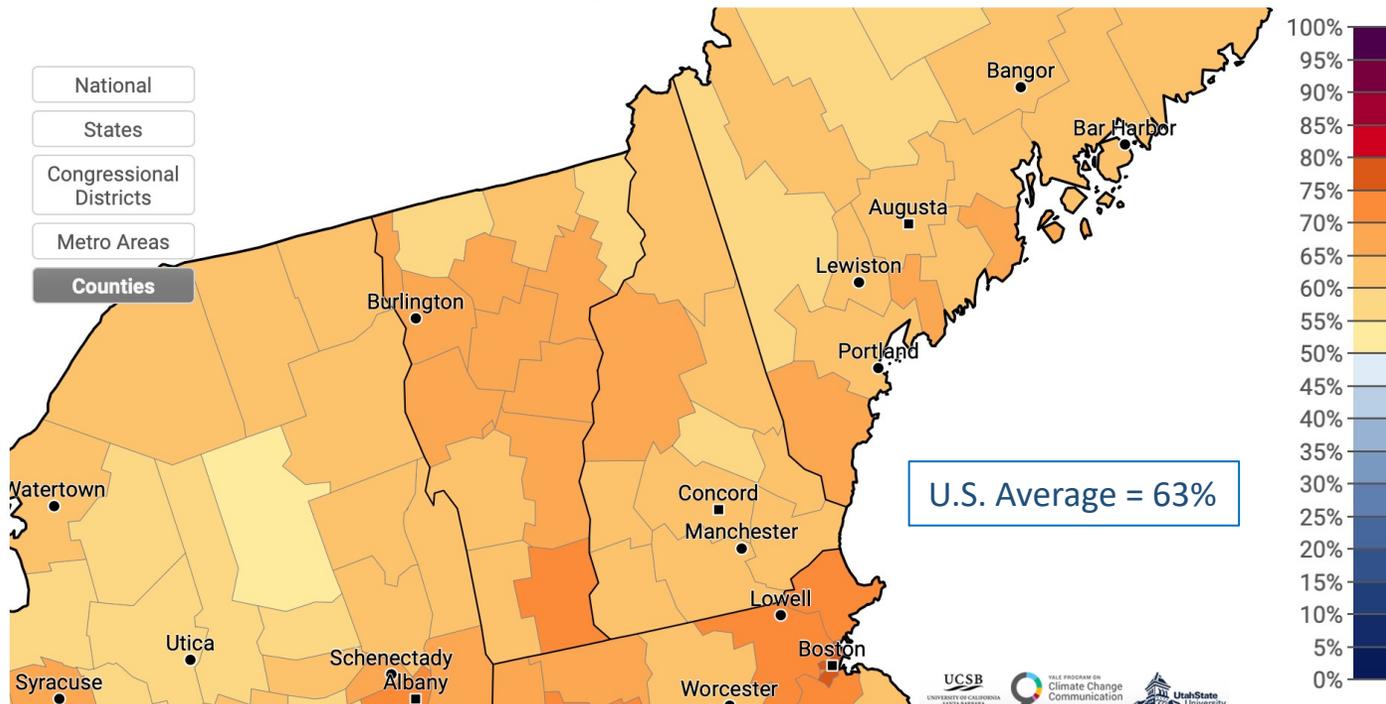
- Socioeconomic status - poverty, unemployment, low median income, no high school diploma
- Household composition – age, disability, single parent household
- Historically marginalized/language isolated – non-white, ESL
- Housing/transportation – multi-unit structures, group quarters, no vehicle



Social vulnerability index (Figure source: CDC)

Our New Normal

Yale Climate Opinion Maps: Are you worried about global warming?



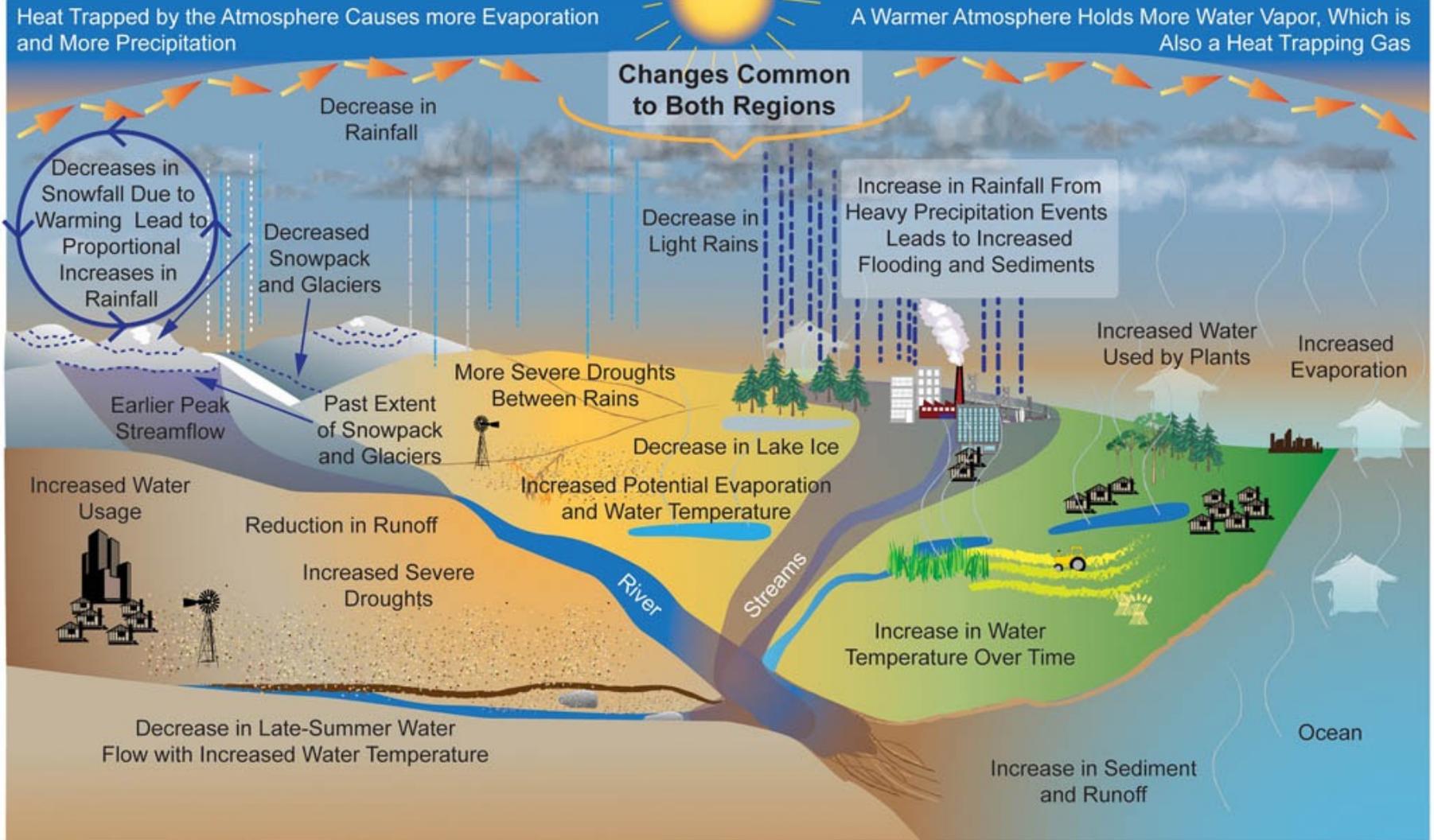
Estimate % of adults who are concerned about global warming by county. (Figure source: Yale Climate Communication – Climate Opinion Maps, 2020).

58-67% of New Hampshire residents are worried about global warming

- 64%-71% think global warming is affecting the weather. (*U.S. average = 64%*)
- 35%-45% think global warming will “harm me personally.” (*U.S. average = 43%*)

Hotter/Drier Conditions (Interior West)

Hotter/Wetter Conditions (NE and Coasts)



“The changing climate of the Northeast threatens the health and well-being of residents through environmental changes ...”

- 4th National Climate Assessment



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