

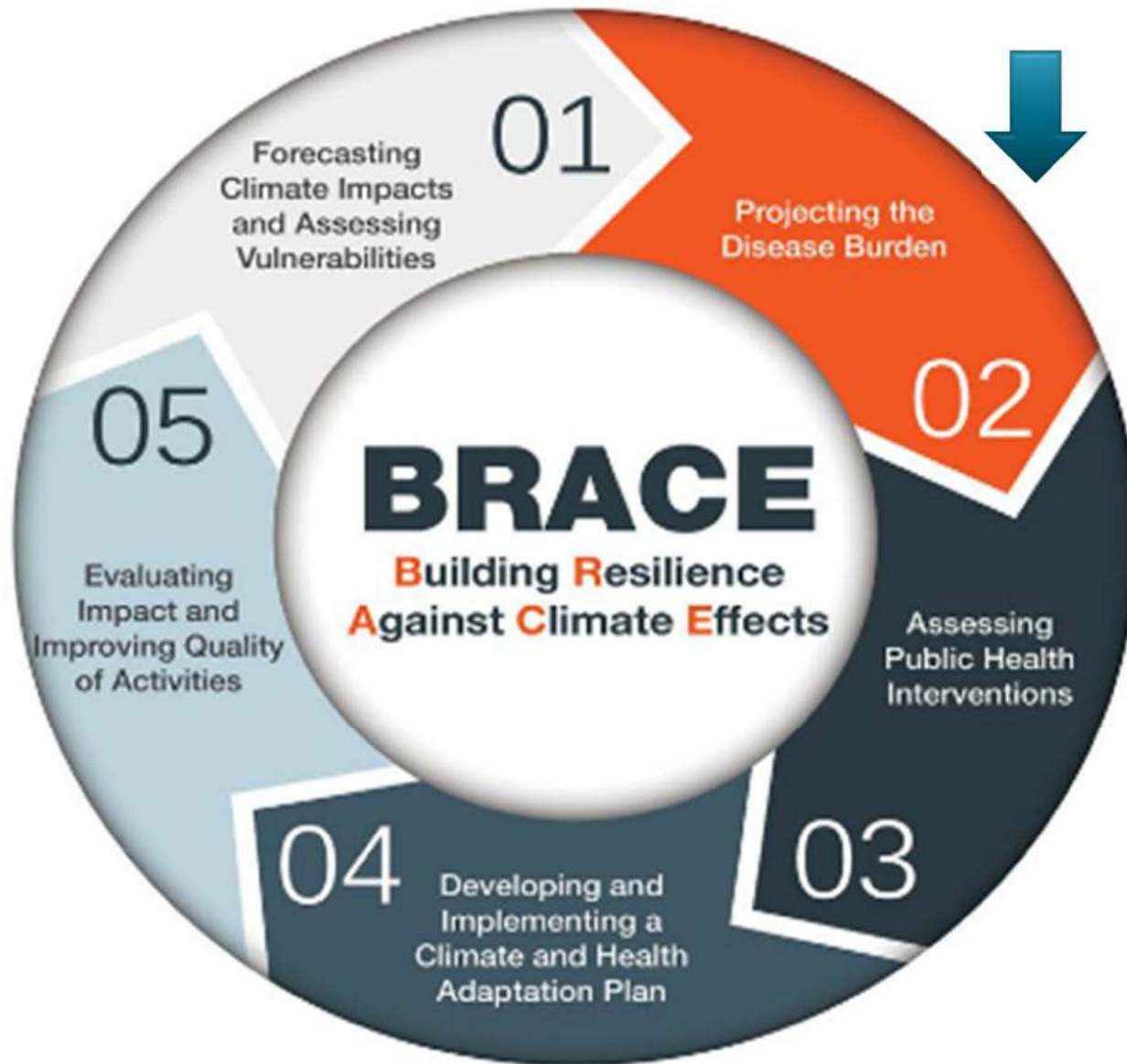


# Building Resilience Against Weather & Climate Effects in New Hampshire

Matt Cahillane, NH DHHS  
Upper Valley Community Forum  
March 30, 2016



# Building Community Resilience

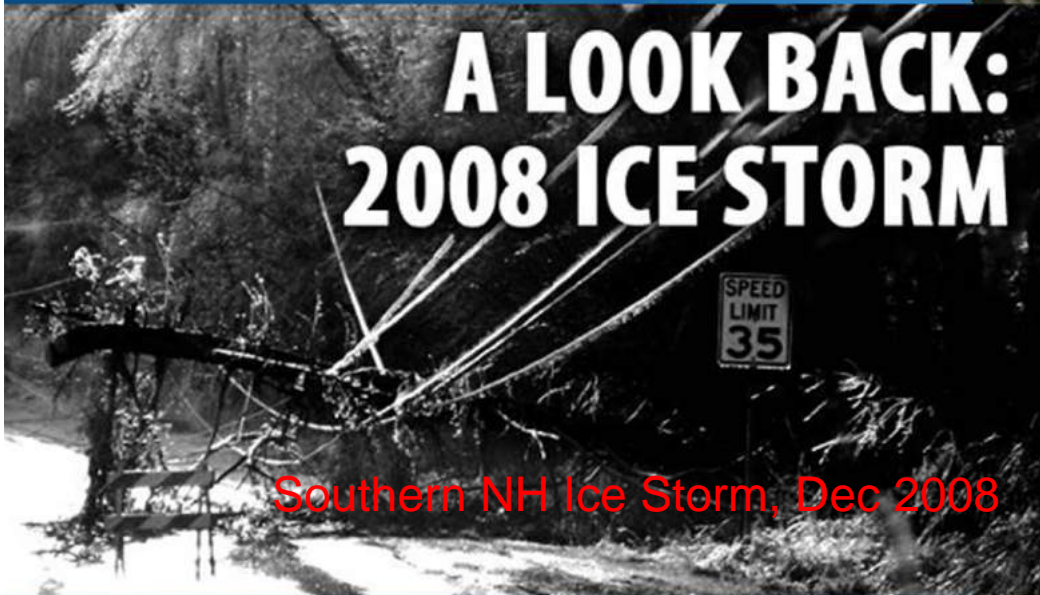


# Key Message 1

- Climate Change is happening, and expected to continue in New Hampshire



# Extreme Weather Hazards



Southern NH Ice Storm, Dec 2008



Keene floods, Fall 2005.



So NH Heat Wave,  
July 2015

# Related Priorities in NH

- Direct Impacts

- Hot weather, and heat stress.
- Severe weather, and traumatic injury or deaths.

- Indirect Impacts

- Habitat change and Tickborne Disease
- Air Quality and allergy/asthma
- Water Quality and infectious disease
- Resilience and mental health outcomes



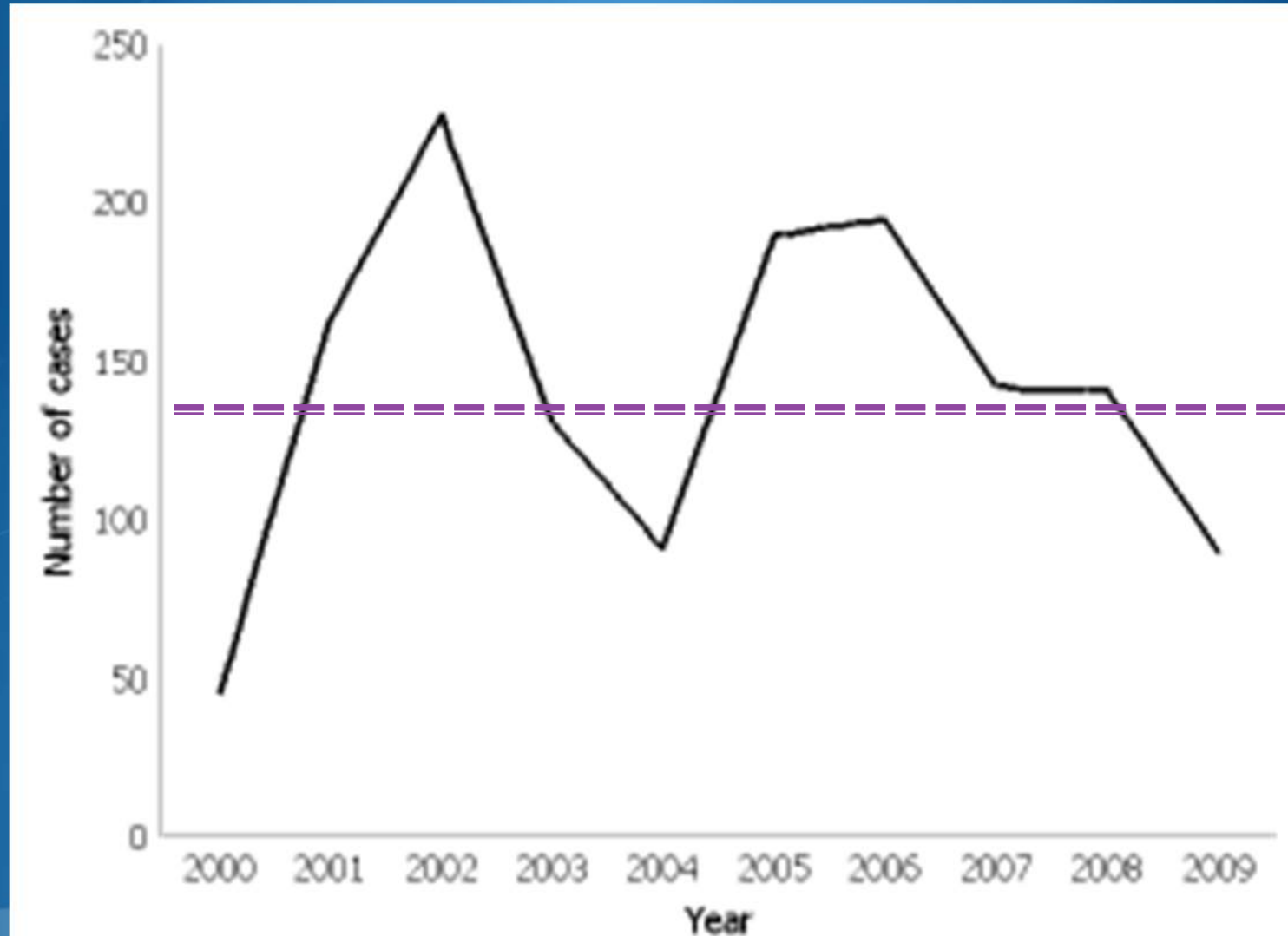
# Key Message 2

- Climate Change is increasing health risks in New Hampshire.



# Hospital Visits for Heat, 2000-2009

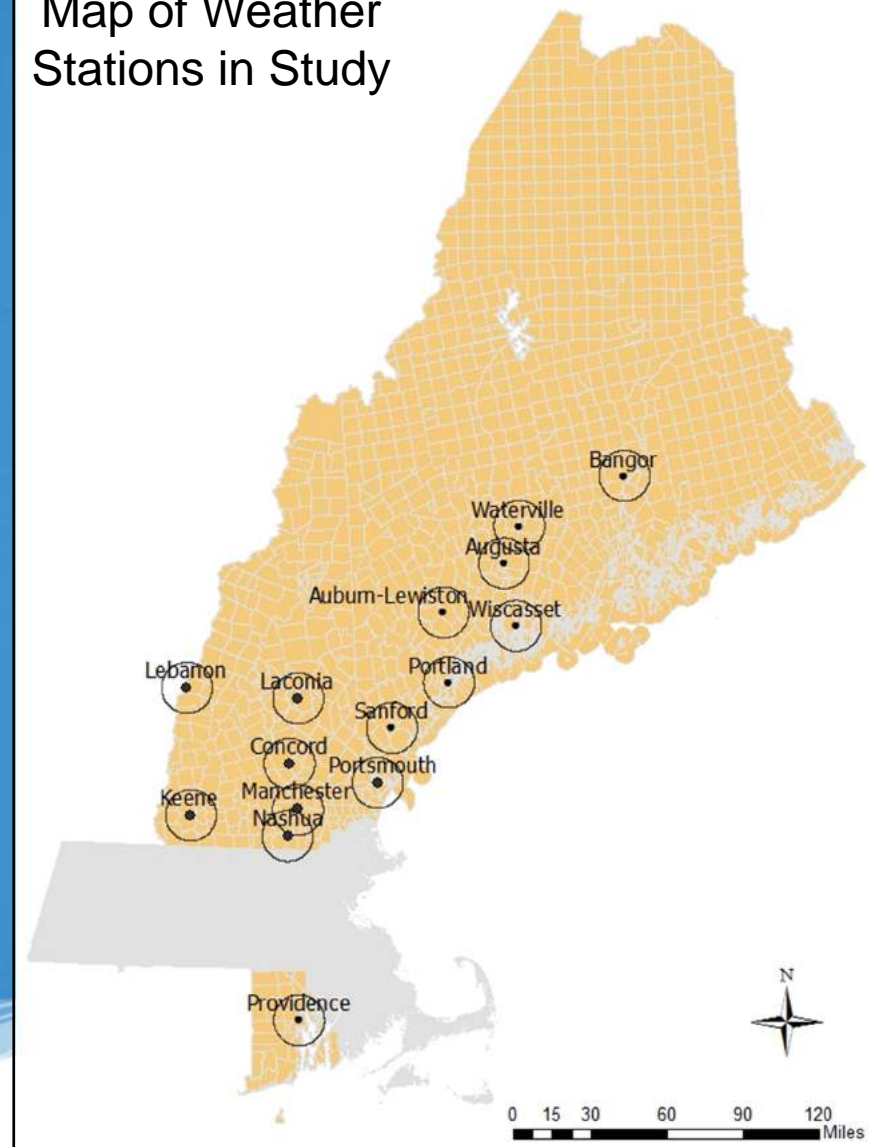
- Average of 141 cases per year



# New England Summer Heat and Health Study

- Based on a 2010 NYC study
- Goal to assess how 'moderate' outdoor heat relates to all-cause hospital visits
- Refine methods, analyze patterns, build evidence, report findings.
- Inform protective actions:
  - Share with partners
  - Raise awareness or change policies
  - State Excessive Heat Response Plan, regional or local plans.
  - NWS Excessive Heat Warning thresholds
  - Create an Early Warning Decision Support Tool

Map of Weather Stations in Study



# Summertime Heat and Health – comparing risk

## Summary of Heat Index and Associated Excess Emergency Department Visits (May-September; 2000-2009)

Location	2010 Population	Heat Index (Mean)	Heatwave Events (3 days $\geq 90F$ ) per Year	Number of Days $\geq 95F$ per Year	Excess ED Visits at 95F <sup>1</sup> per Year
<b>Lebanon</b>	<b>39,891</b>	<b>43-105 (75)</b>	<b>1.3</b>	<b>3.2</b>	<b>10</b>
Keene	63,146	33-105 (74)	1.1	2.7	12
Laconia	68,195	35-103 (73)	1.0	2.5	22
Concord	107,764	43-106 (75)	1.8	4.8	45
Portsmouth	138,744	43-112 (74)	1.7	5.8	62
Manchester	238,059	43-105 (76)	2.1	4.4	84
Nashua	212,615	44-113 (77)	3.0	9.4	148



# Summertime Heat and Health – comparing risk

**Summary of Heat Index and Associated Excess Emergency Department Visits  
(May-September; 2000-2009)**

Location	2010 Population	Heat Index (Mean)	Heatwave Events (3 days $\geq 90F$ ) per Year	Number of Days $\geq 95F$ per Year	Excess ED Visits at 95F per Year <sup>1</sup>	Excess ED Visits at 75F per Year <sup>1</sup>
<b>Lebanon</b>	<b>39,891</b>	<b>43-105 (75)</b>	<b>1.3</b>	<b>3.2</b>	<b>10</b>	<b>82</b>
Keene	63,146	33-105 (74)	1.1	2.7	12	124
Laconia	68,195	35-103 (73)	1.0	2.5	22	214
Concord	107,764	43-106 (75)	1.8	4.8	45	307
Portsmouth	138,744	43-112 (74)	1.7	5.8	62	320
Manchester	238,059	43-105 (76)	2.1	4.4	84	640
Nashua	212,615	44-113 (77)	3.0	9.4	148	660



# Key Message 3

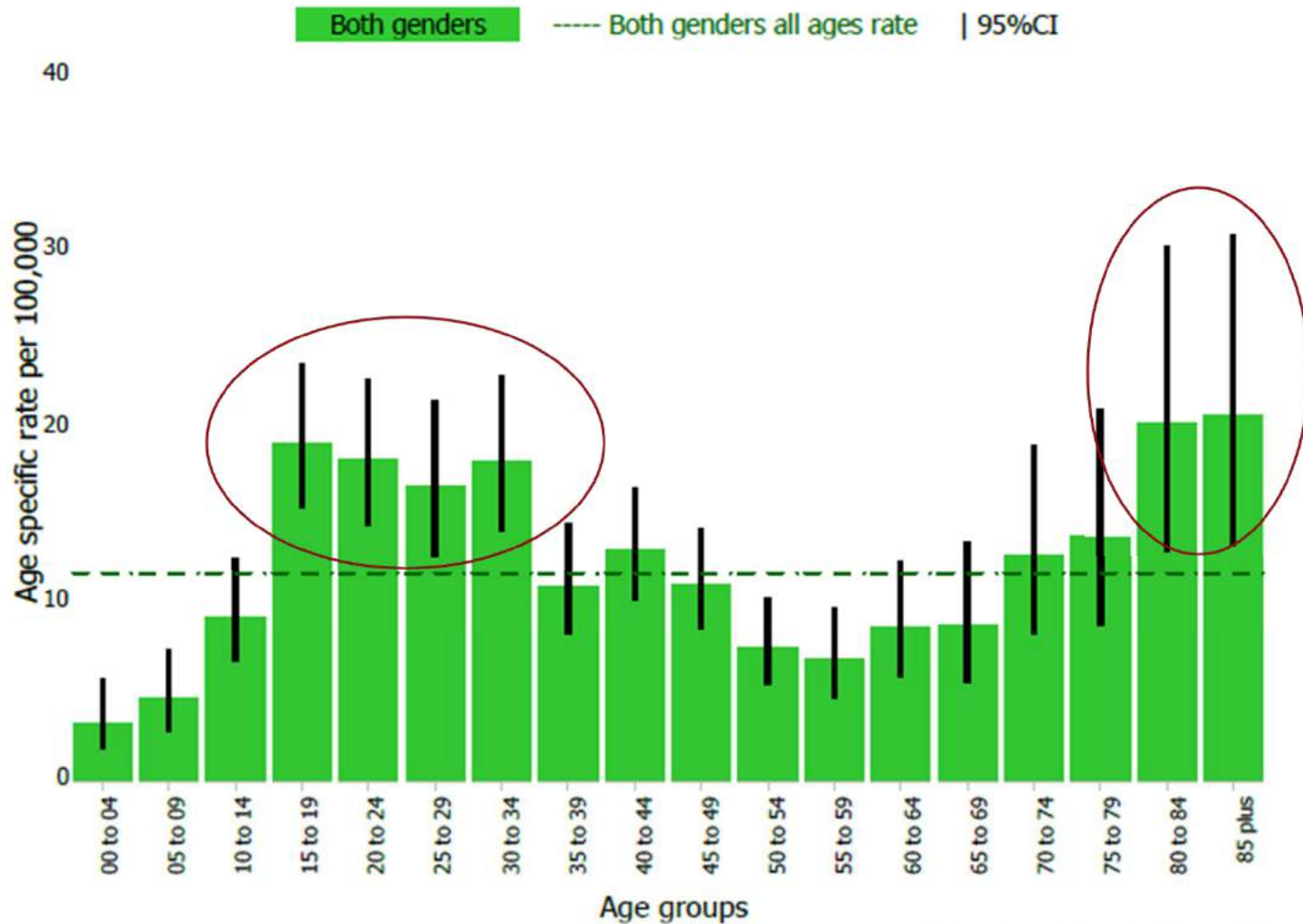
- Climate Change is a threat to all, yet some people more vulnerable to certain effects.



# Rate of Heat Injury by Age

Heat related hospital visits (emergency dept.; natural causes)

Age specific rate; Both genders; All unintentional; 2005-2009; State of New Hampshire



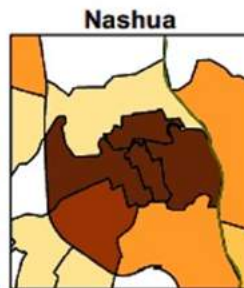
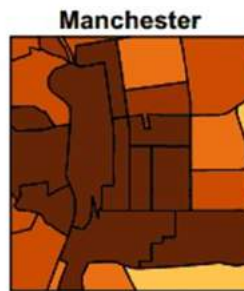
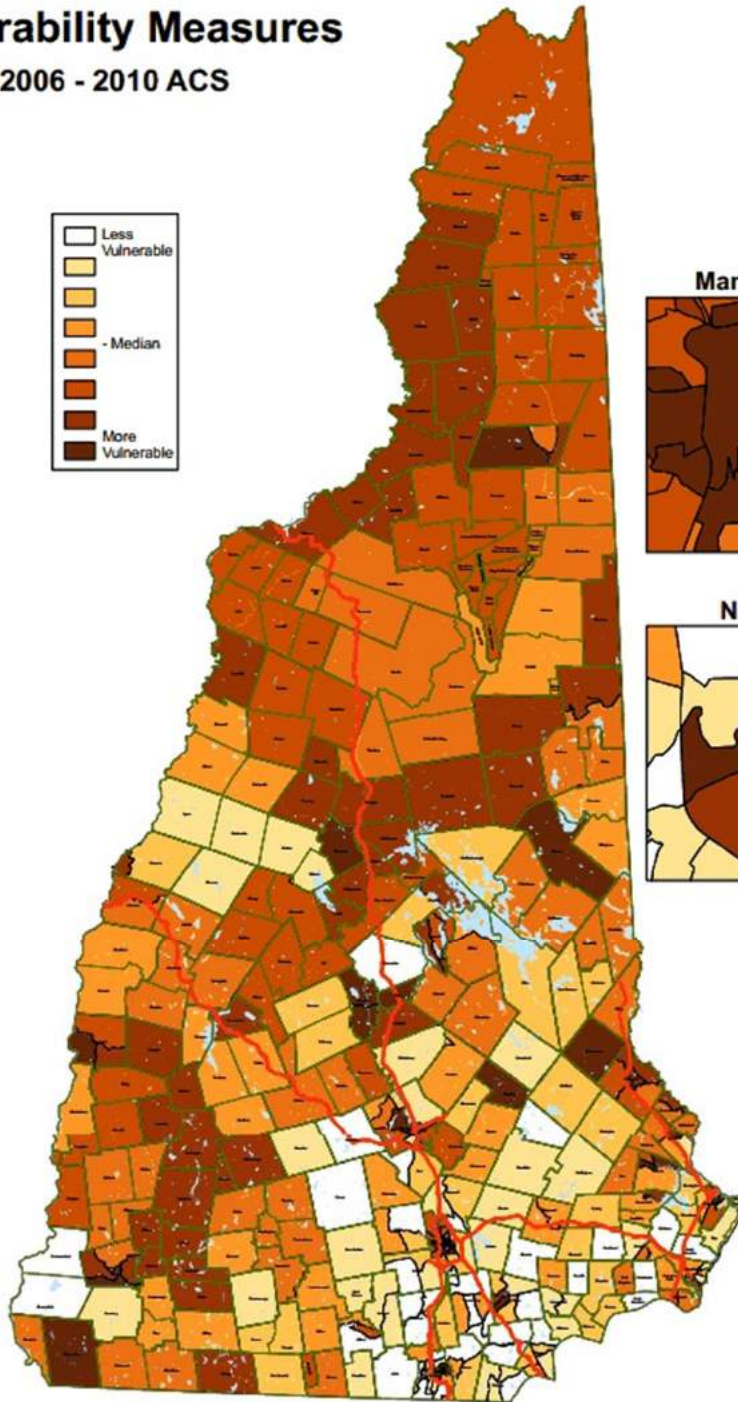
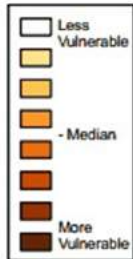
Source: wisdom.dhhs.nh.gov

# Social Vulnerability Measures

Based on 2006 - 2010 ACS

## Vulnerability Measures:

- % Below Poverty Level
- % Unemployed
- % Per Capita Income
- % No High School Diploma
- % 65 or Older
- % 17 or Younger
- % Disabled
- % Single Parent Households
- % Minority
- % Don't Speak English
- % Multi-Unit Housing
- % Mobile Homes
- % Crowding
- % No Vehicle
- % In Group Quarters



# SVI by Town in NH

- Darker shade indicates greater vulnerability to the health impacts of disasters



# SVI Map

- Upper Valley PHN Area

We are here!



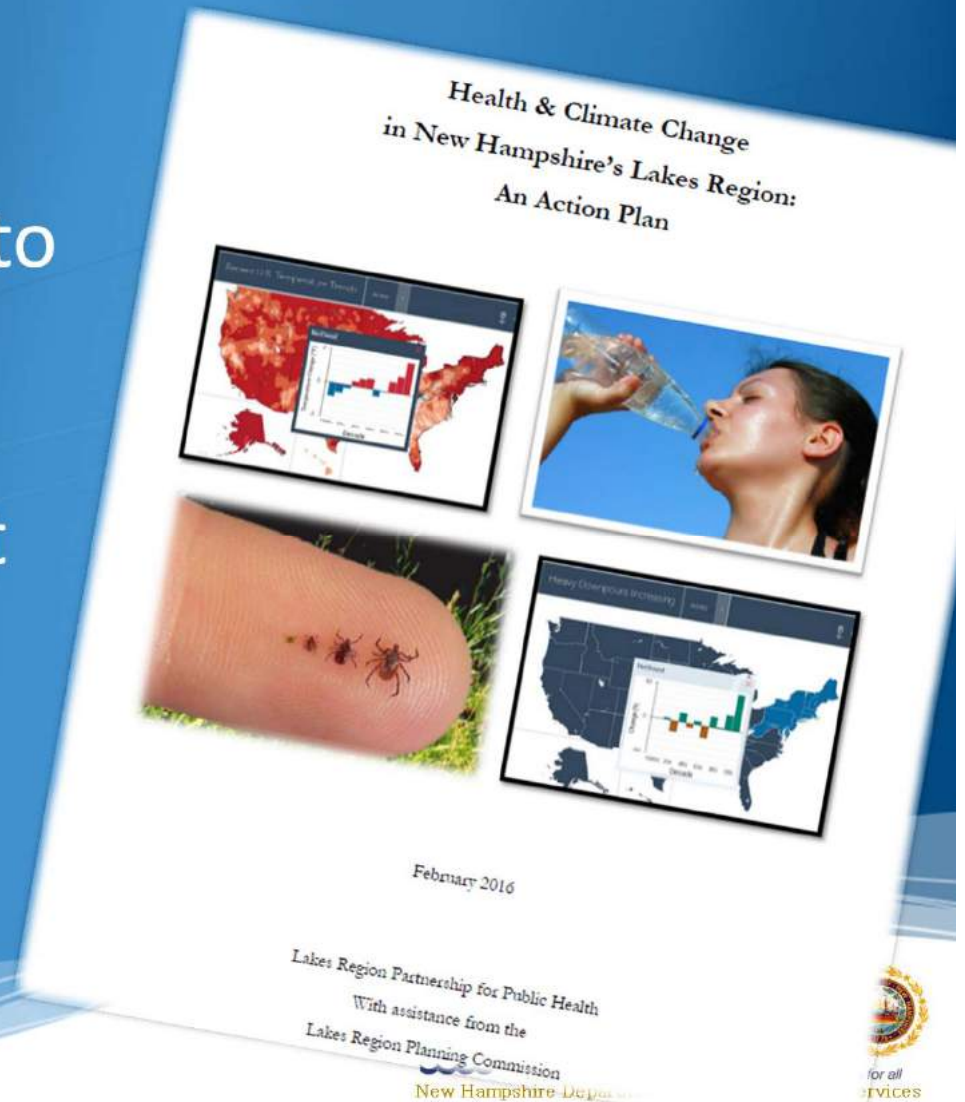
# Key Message 4

- Actions to adapt to climate change can benefit our health now, and in the future.



# Lakes Region C&H Project

- April 2015 funded to develop a climate adaptation plan
- Six month engagement to assess risks, health burdens, and priorities.
- Top concern was habitat change & Lyme Disease
- Now ready to assess interventions via youth recreation programs.



# For more information:

Matt Cahillane

NH DHHS, Climate and Health Program

603-271-4072; [mcahilla@dhhs.state.nh.us](mailto:mcahilla@dhhs.state.nh.us)



Kathleen Bush

NH DHHS, Environmental Public Health  
Tracking Program

603-271-1106

[kathleen.bush@dhhs.state.nh.us](mailto:kathleen.bush@dhhs.state.nh.us)

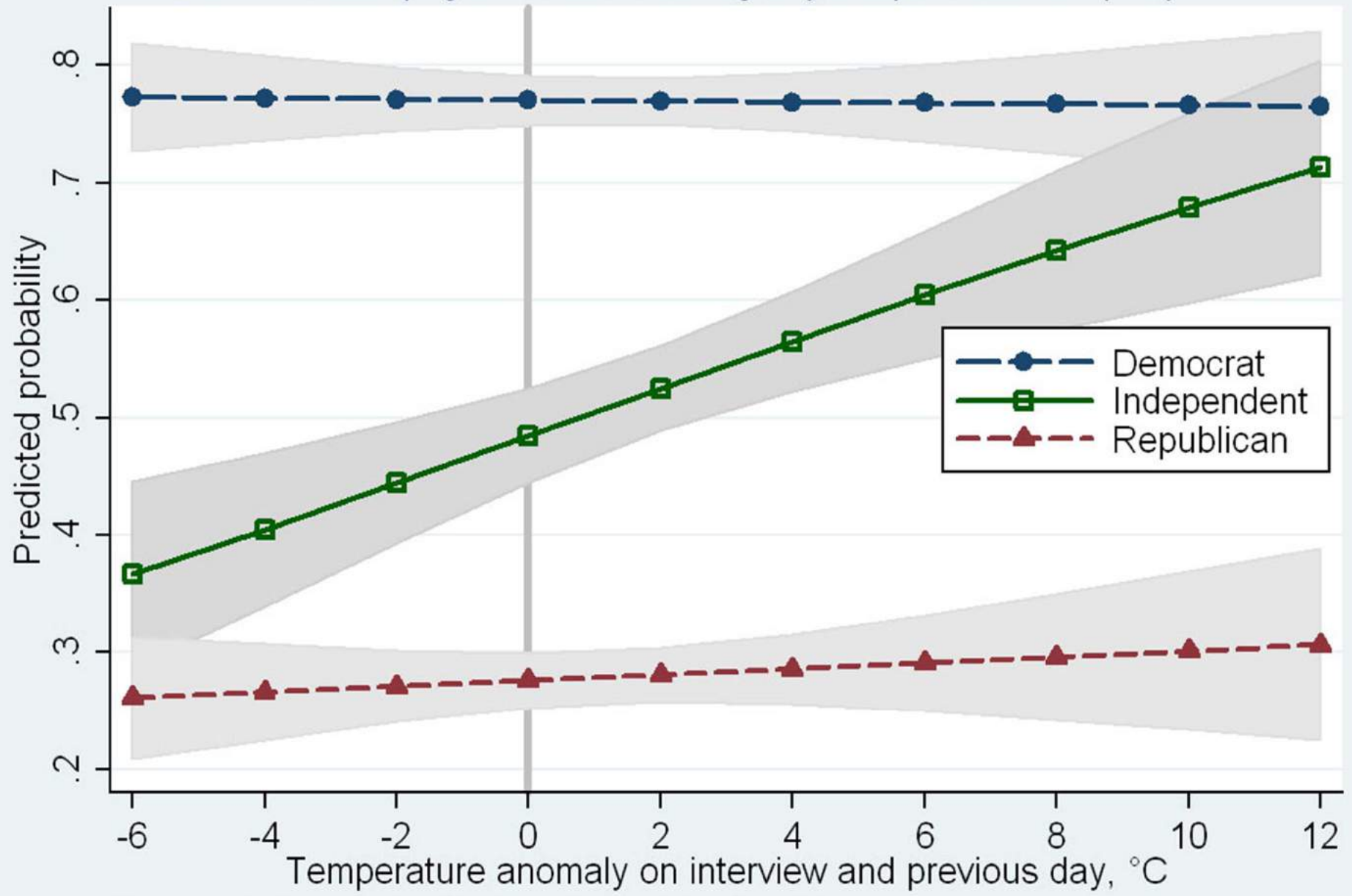


Or visit our website

[www.dhhs.nh.gov/dphs/climate/](http://www.dhhs.nh.gov/dphs/climate/)



Belief in anthropogenic climate change by temperature and party



Hamilton & Stampone in Weather, Climate & Society (2013)