# Strengthening Environmental Health Protections through Climate Change Planning: Lessons from the National Health Security Preparedness Index

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**Collaborative on Health and the Environment – Boston University Superfund Research Program**

Superstorms and Superfund Sites: Preventing Toxic Exposures from Climate Change Disasters Webinar

13 March 2018

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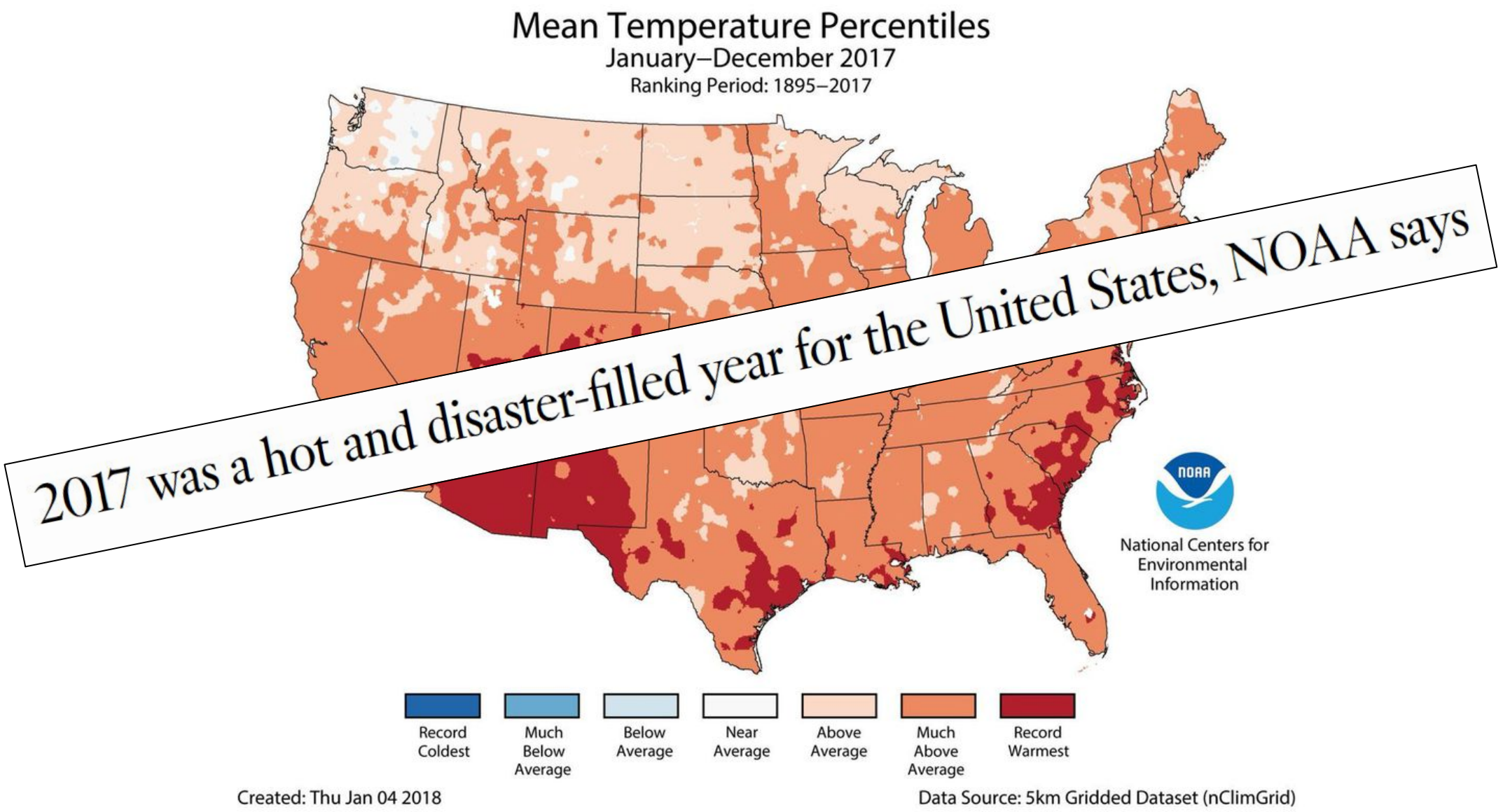
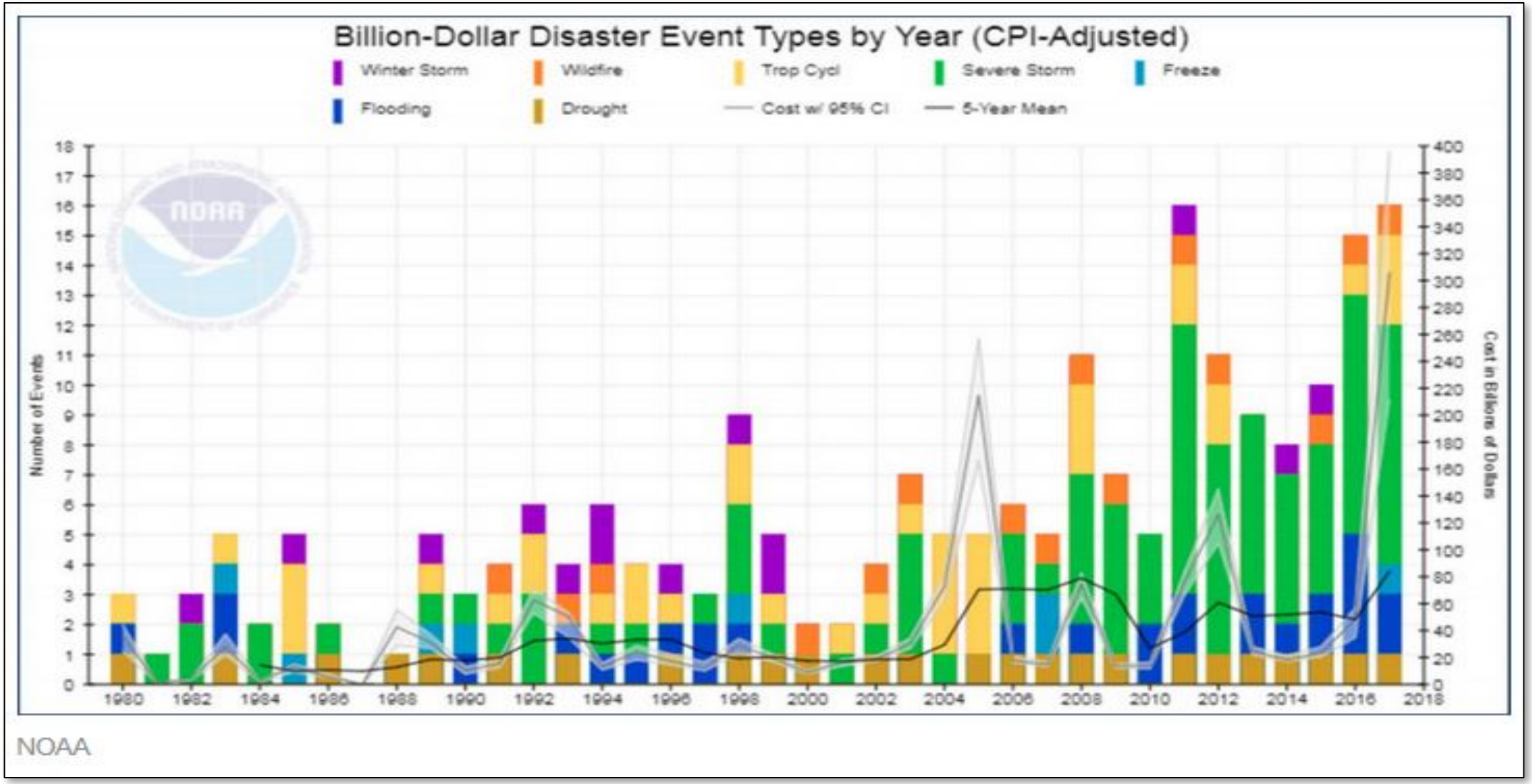

Mean Temperature Percentiles
January–December 2017
Ranking Period: 1895–2017
2017 was a hot and disaster-filled year for the United States, NOAA says
NOAA
National Centers for Environmental Information
Record Coldest
Much Below Average
Below Average
Near Average
Above Average
Much Above Average
Record Warmest
Created: Thu Jan 04 2018
Data Source: 5km Gridded Dataset (nClimGrid)

# Extreme Weather Disasters




NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2018). https://www.ncdc.noaa.gov/billions/

# The Threat: Hazardous Waste Sites

NATION NOW

EPA finds damage at Superfund site from Hurricane Harvey

By Lise Olsen and Brooke A. Lewis Updated 9:14

Superfund

America Has a Toxic Waste Hurricane Problem

water from

By John D. Sutter, CNN

Updated 1:05 AM ET, Sat October 14, 2017

risk for 327 toxic Superfund sites

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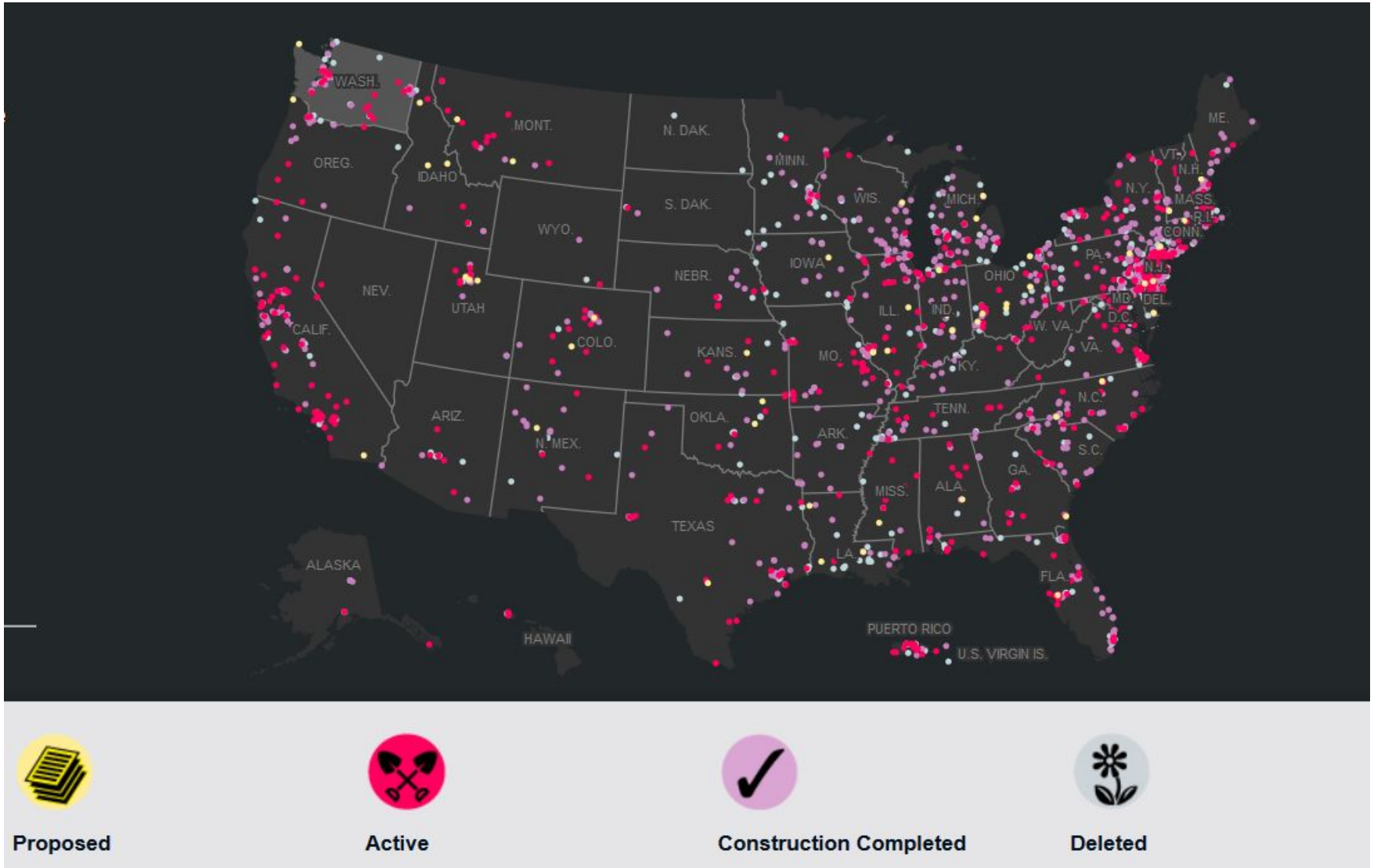
# Superfund National Priorities List Sites



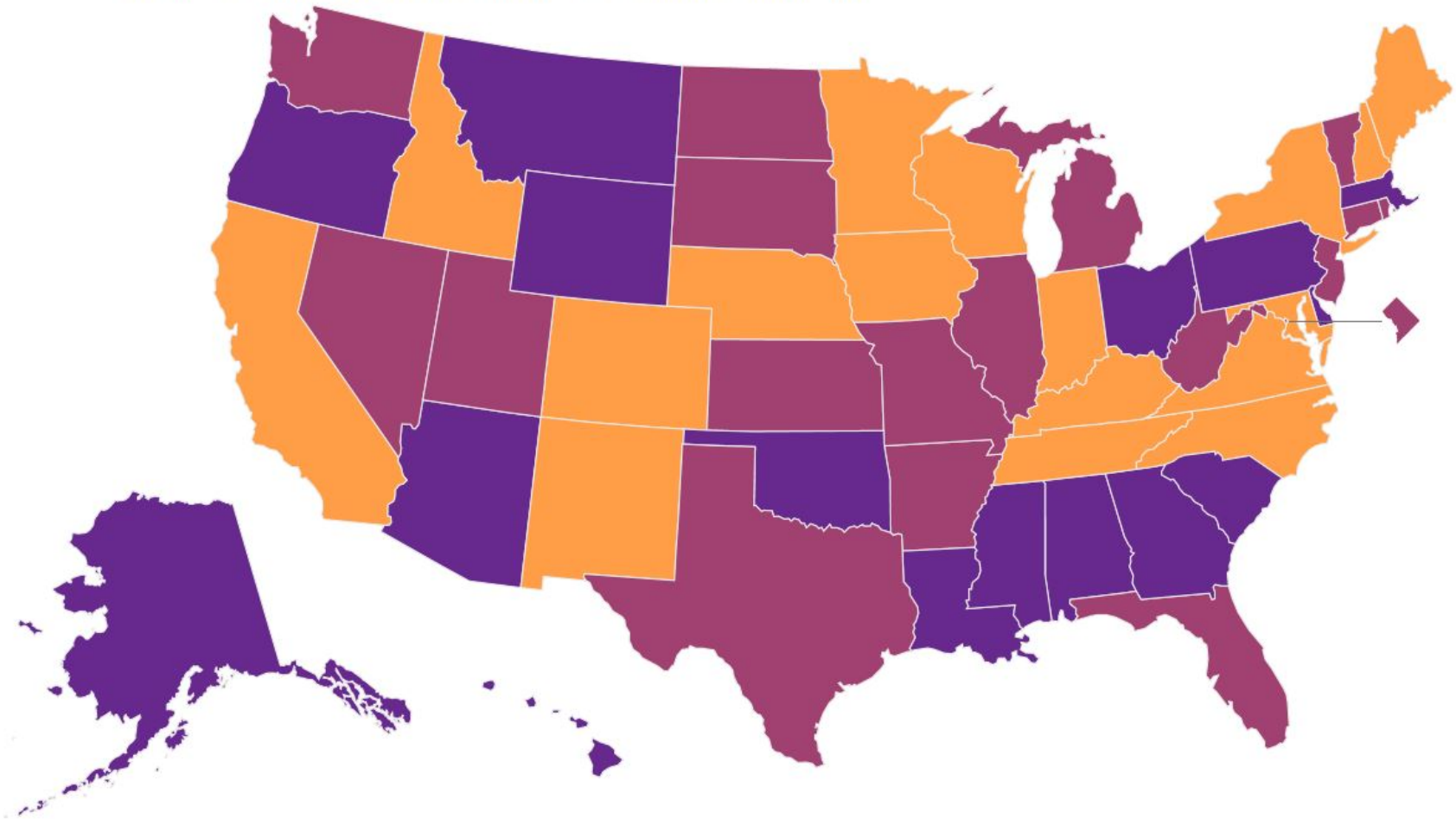

Source: National Geographic:. https://www.nationalgeographic.com/superfund/#charts/

# Measuring Environmental Health Protections: National Health Security Preparedness Index

KEY

- ABOVE NATIONAL AVERAGE
- MEETS NATIONAL AVERAGE
- BELOW NATIONAL AVERAGE

| NATIONAL PREPAREDNESS LEVEL | NATIONAL CONFIDENCE INTERVAL |
|---|---|
| 7 | 6.4 - 7.5 |



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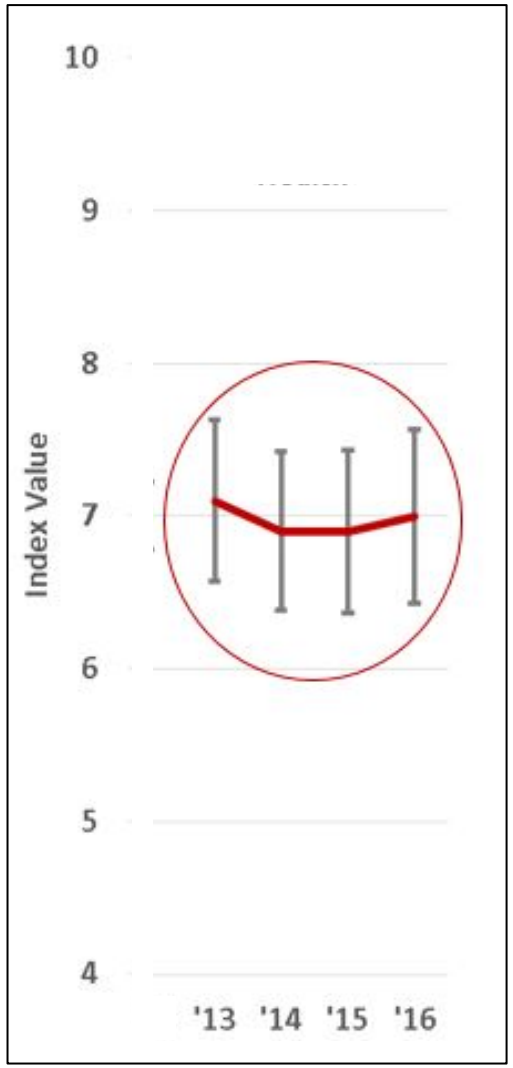
# Trends in Environmental Health Protections



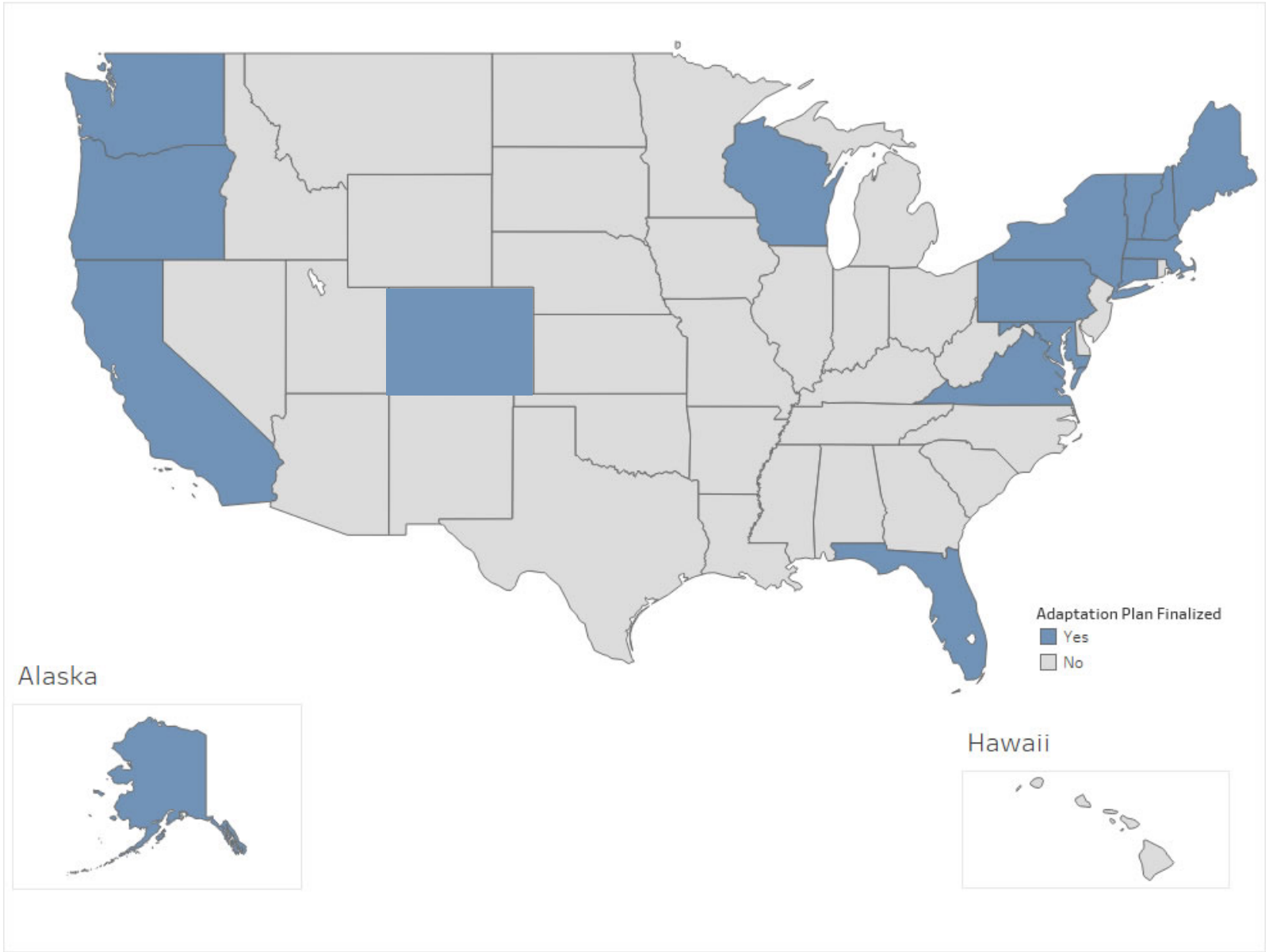

- More than 40% of states have experienced declines in EOH protections since the first Index release in 2013
- 17% of top-tier states in overall health security are below the national average in EOH protections
- More than 1/3 of top-tier states in overall health security have experienced declines in EOH protections since the first Index release
- By 2016, the top EOH state reflected EOH protections 2.4X higher than its lowest-scoring counterpart

# IIM-IMMAC Measure of Interest

| m334 | Does state have a climate change adaptation plan? |
|---|---|

| | |
|---|---|
| **Measure Name** | M334 |
| **Measure Source** | Center for Climate and Energy Solutions (C2ES), State and Local Climate Adaptation |
| **Data date(s)** | 2014 - 2016 |
| **Limitations** | The measure is an indicator of state planning for climate change; however, it only indicates if a state has a plan. The quality of the plan is not evaluated. The degree to which the plan is being implemented is also not evaluated. |

# Finalized State Climate Adaptation Plans

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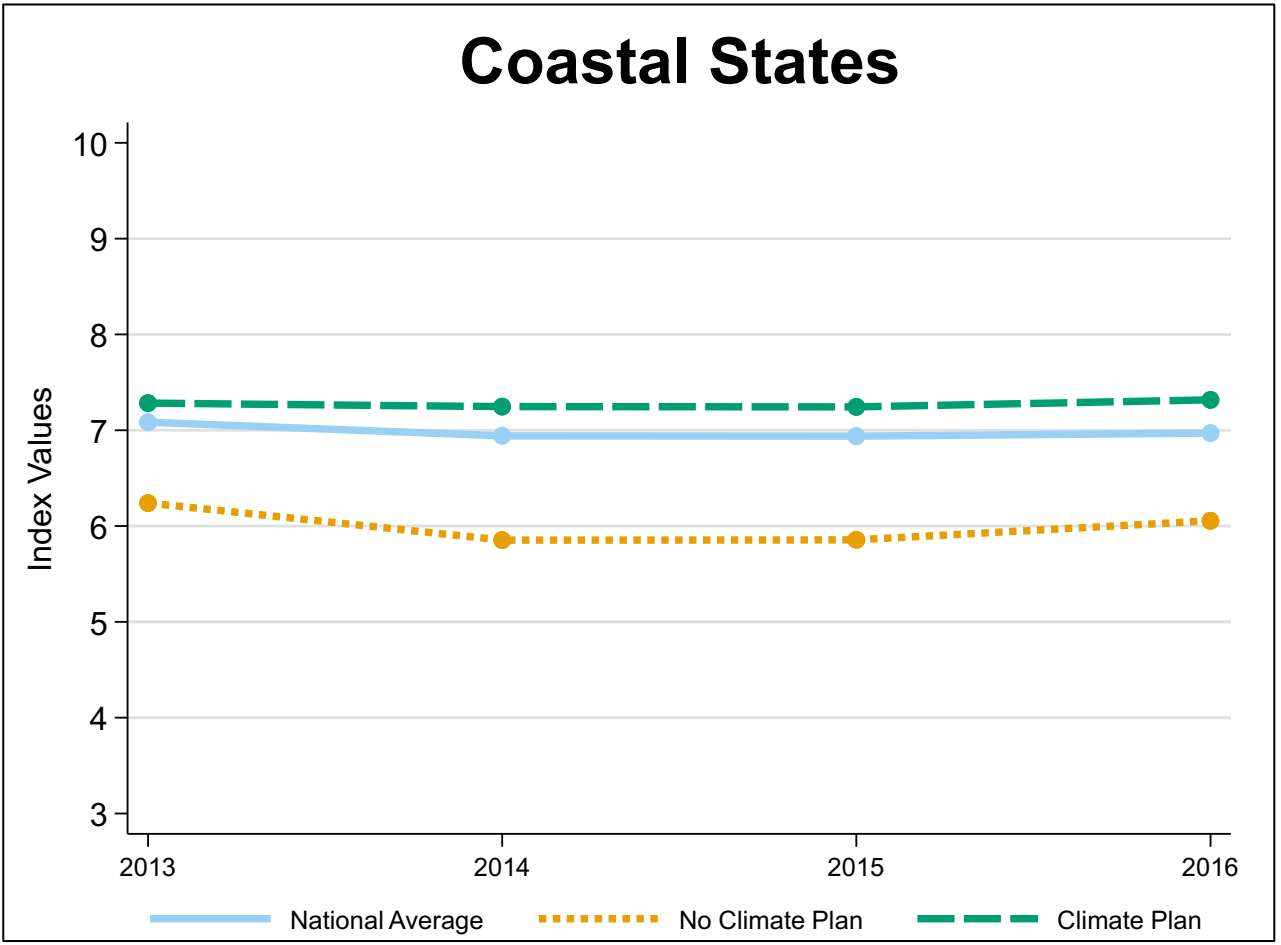
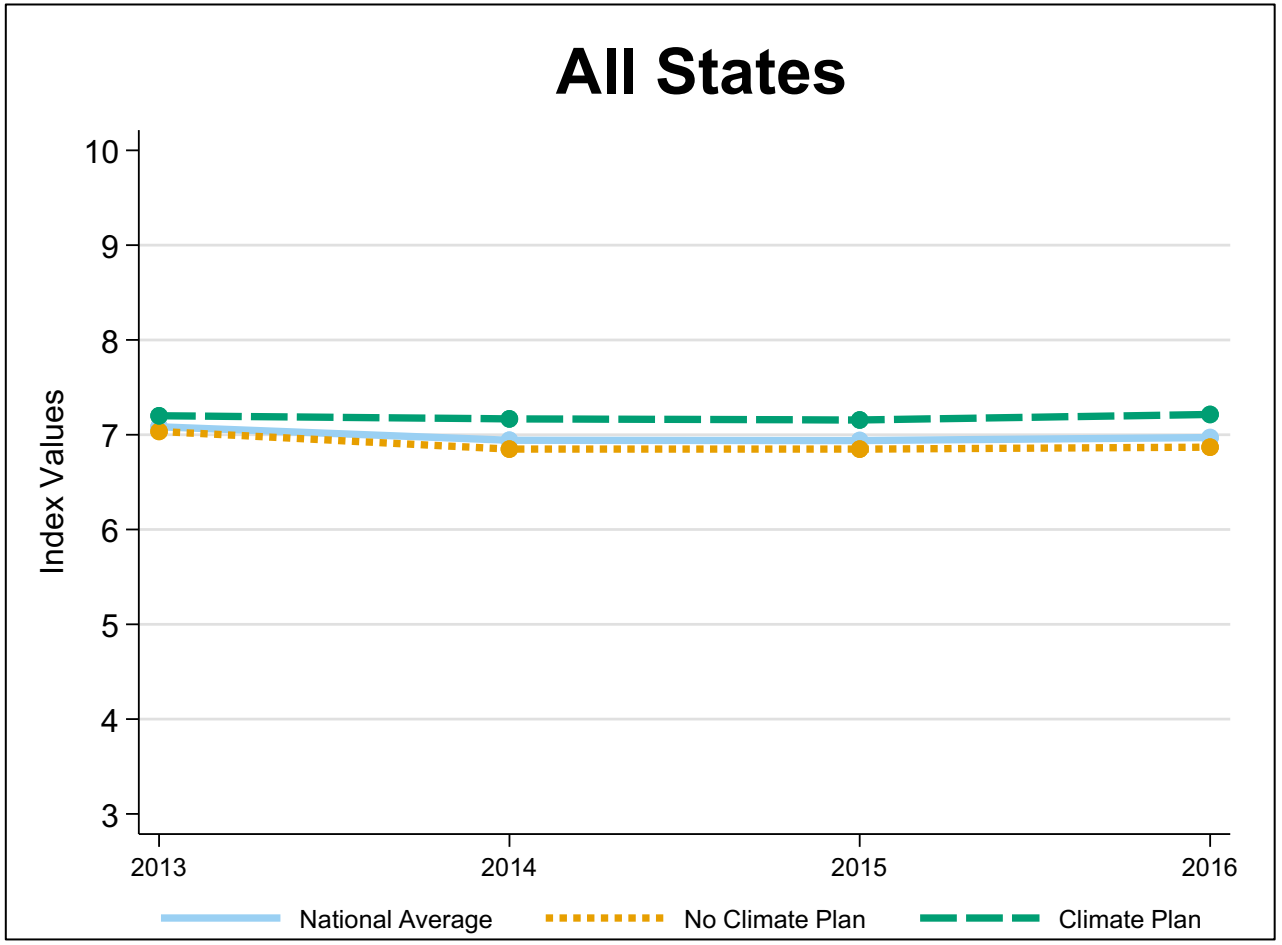
# Environmental and Occupational Health Domain and Climate Adaptation Planning



# Why?

| m334 | Does state have a climate change adaptation plan? |
|---|---|

| | |
|---|---|
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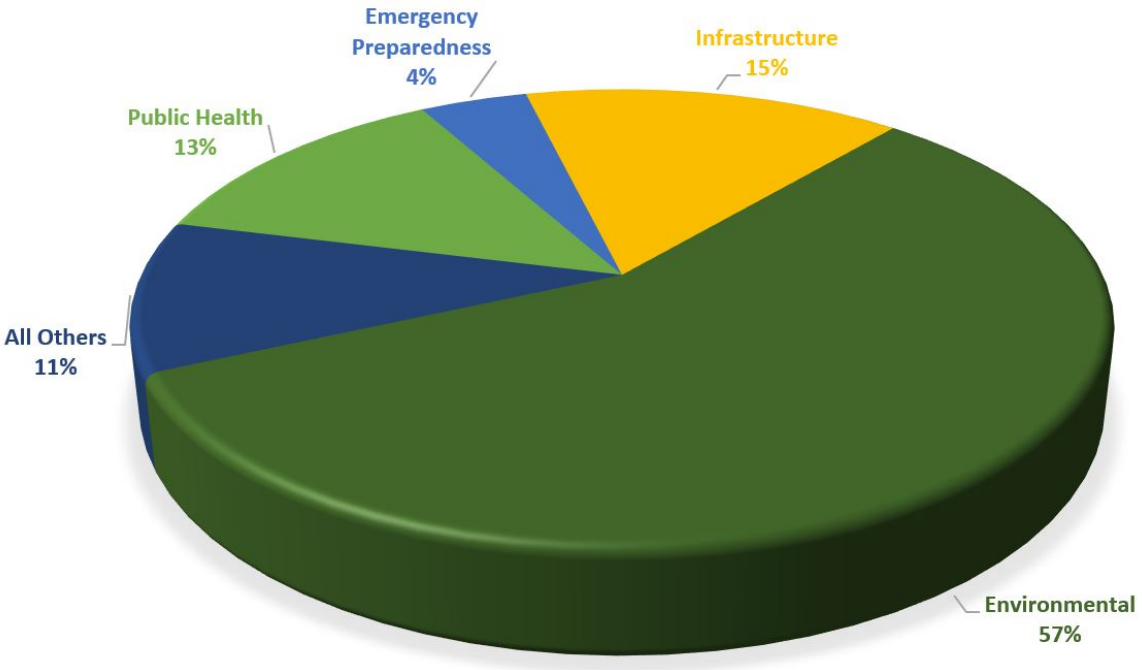
# 15 Heterogeneous State Climate Adaptation Plans

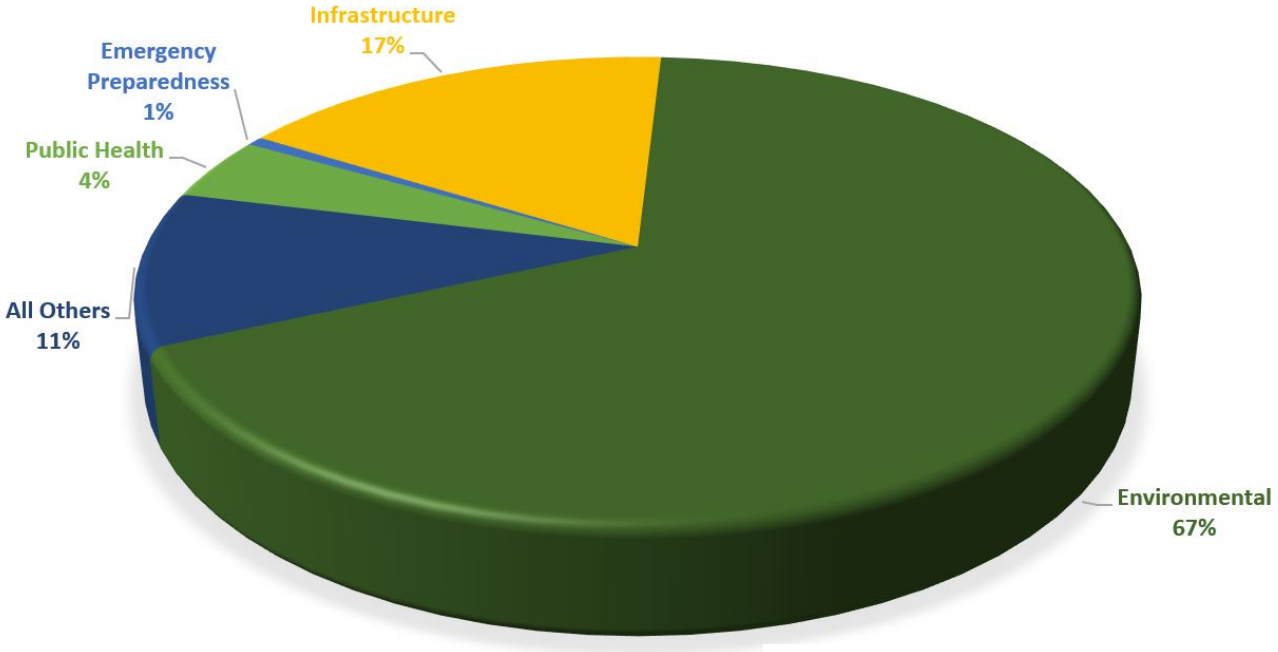
- Timelines
  - Plan finalization dates range from 2008 to 2016
  - 75% of coastal states had finalized plans before the first non-coastal state plan was finalized in 2011
  - Only 1 new plan since the first Index release in 2013
- Length: from 12 pages to >400
- Leadership
  - Most authored by governor-appointed commissions/task forces
  - Some by state environmental agencies
  - One by a state health agency
- Collaborative Roles
  - Less than half of steering committees included public health sector representation
  - Stakeholder-engaged processes often included public health sector representation on workgroups

# State Adaptation Goals by Sector

## Coastal States




## Non-Coastal States

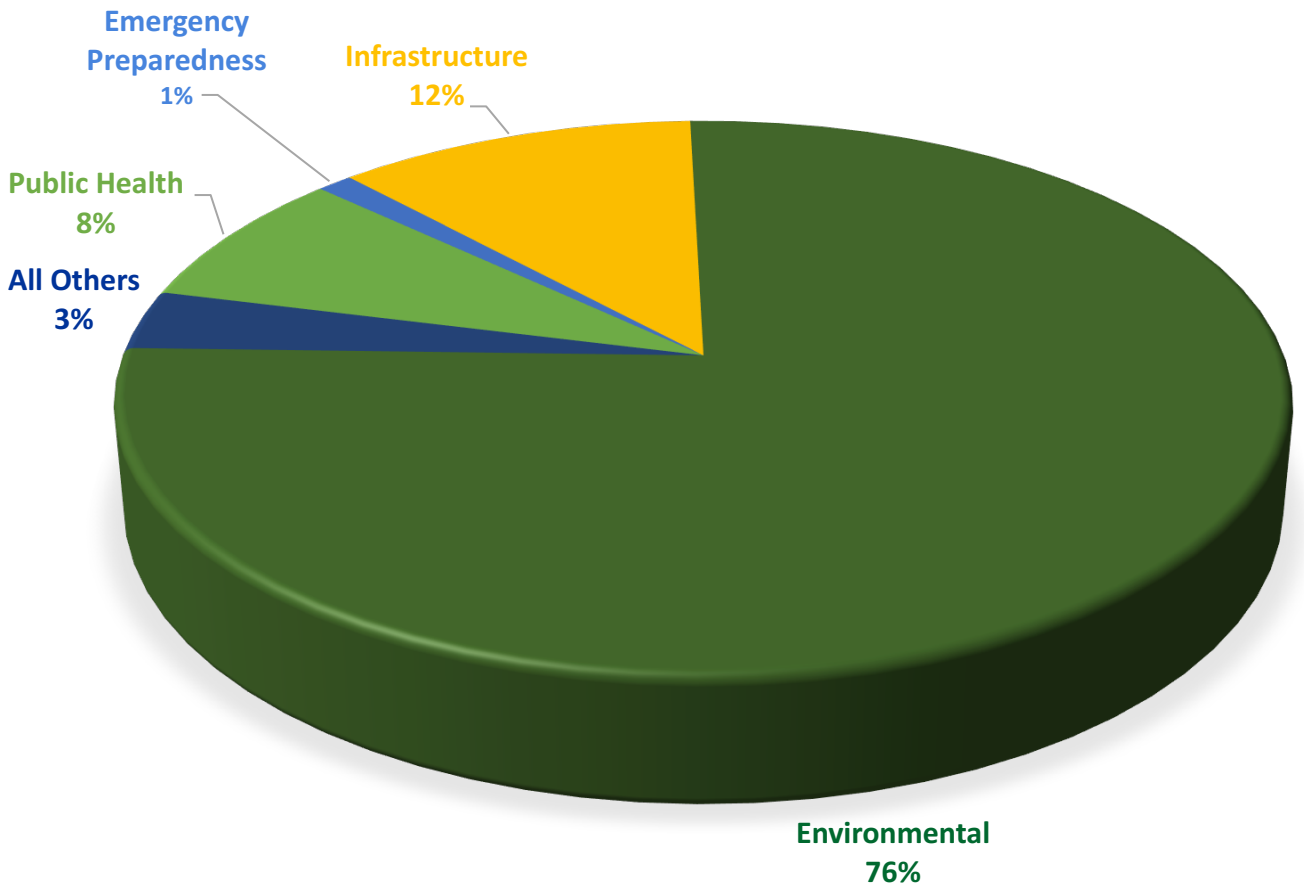


# Common Themes: Adaptation Goals

- Public Health Goals
  - Extreme Heat
  - Other Extreme Weather Health Hazards
  - Surveillance (Food, Water, Air)
  - Water Quantity and Quality
  - Vector Control
  - Smoke Emergencies
  - Vulnerable Populations
  - Preparedness Planning

- Emergency Management Themes
  - Early Warning Systems
  - Information Sharing
  - Emergency Response Planning

# Non-Coastal Case Study: Pennsylvania



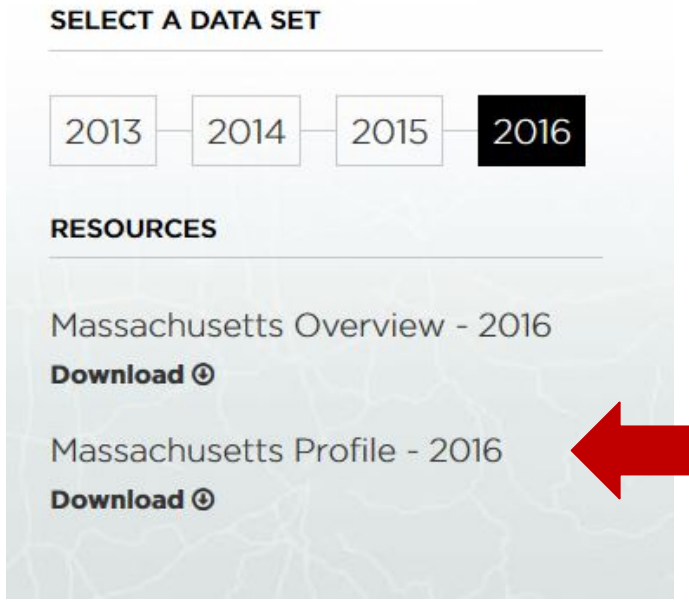

- State Adaptation Plan finalized in 2011
- Public Health Goals = 8%, including
  - Walkable communities
  - Proactive planning for heat stress, flooding, & droughts
  - Strengthen Environmental Health Tracking Program
  - Improve surveillance data and databases
- Emergency Preparedness Goals = 1%
  - Include response in future climate plans
- Public Health Steering Committee Reps = 1 (state)
- Included a public health & safety working group

# Implications

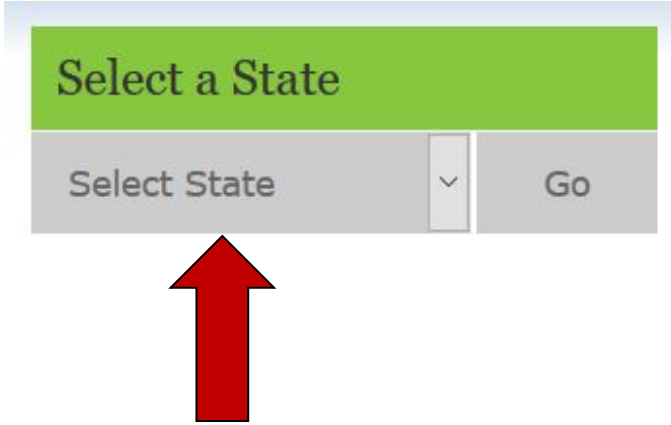
- Because state climate adaptation plans vary across a number of dimensions, it is important to examine whether health goals are explicitly included
- Including public health expertise in collaborative climate adaptation planning and similar long-range strategic initiatives can help identify relevant protections to strengthen health security
- The National Health Security Preparedness Index can help climate adaptation planning by:
  - Identifying gaps and helping prioritize environmental health protections needed to mitigate climate impacts on health
  - Track progress over time in target areas

# Learn More

- What environmental health and other health security protections does your state have in place? Visit the National Health Security Preparedness Index website at www.nhspi.org, then navigate to your state's page to download measure-level details in your state profile.




- Does your state or locality have finalized climate adaptation plans in place? If so, what is in them? Visit the Georgetown Climate Center's website at http://www.georgetownclimate.org/adaptation/plans.html to download plans.



# Read More: References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# Acknowledgements


- Dominique Zephyr, Glen Mays, Michael Childress, Nurlan Kussainov, and Ann Kelly – National Health Security Preparedness Index Program Office

- Georgetown University, Georgetown Law, and the Georgetown Climate Center

- Robert Wood Johnson Foundation

# For More Information

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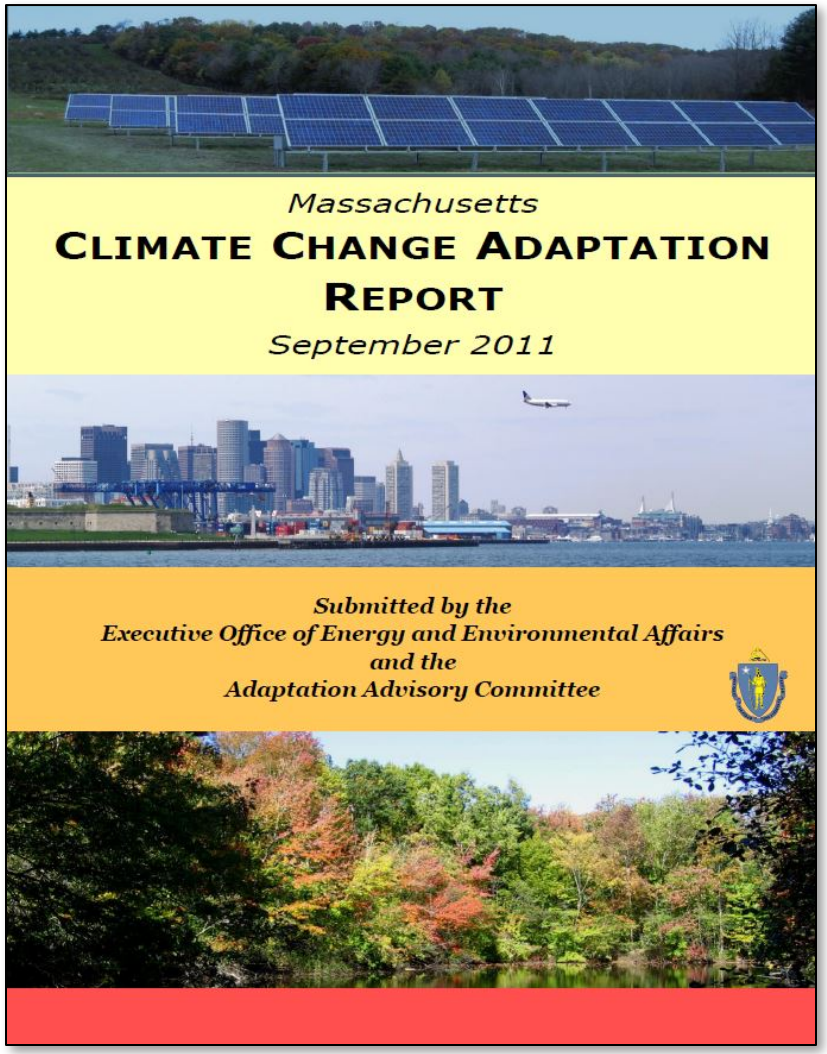
# Massachusetts Climate Adaptation Plan

- Timeline
  - Plan finalized: 2011
  - Status
    - ~59% of plan goals have been achieved (March 2018)
    - ~66% of public health goals have been achieved
    - ~35% of emergency preparedness goals have been achieved
- Leadership and Collaborative Roles
  - Authorship: Executive Office of Energy and Environmental Affairs and the Adaptation Advisory Committee
  - Advisory Committee included representation from Massachusetts Emergency Management Agency and Harvard Medical School
  - State Agencies Steering Committee included Department of Public Health representation
- Chapter Six Is Devoted to Human Health and Welfare
  - Identifies vulnerabilities (e.g., infrastructure, vector-borne diseases, air quality, algae blooms, water demand, food security, extreme weather)
  - Describes long- and short-term mitigation strategies for each set of vulnerabilities

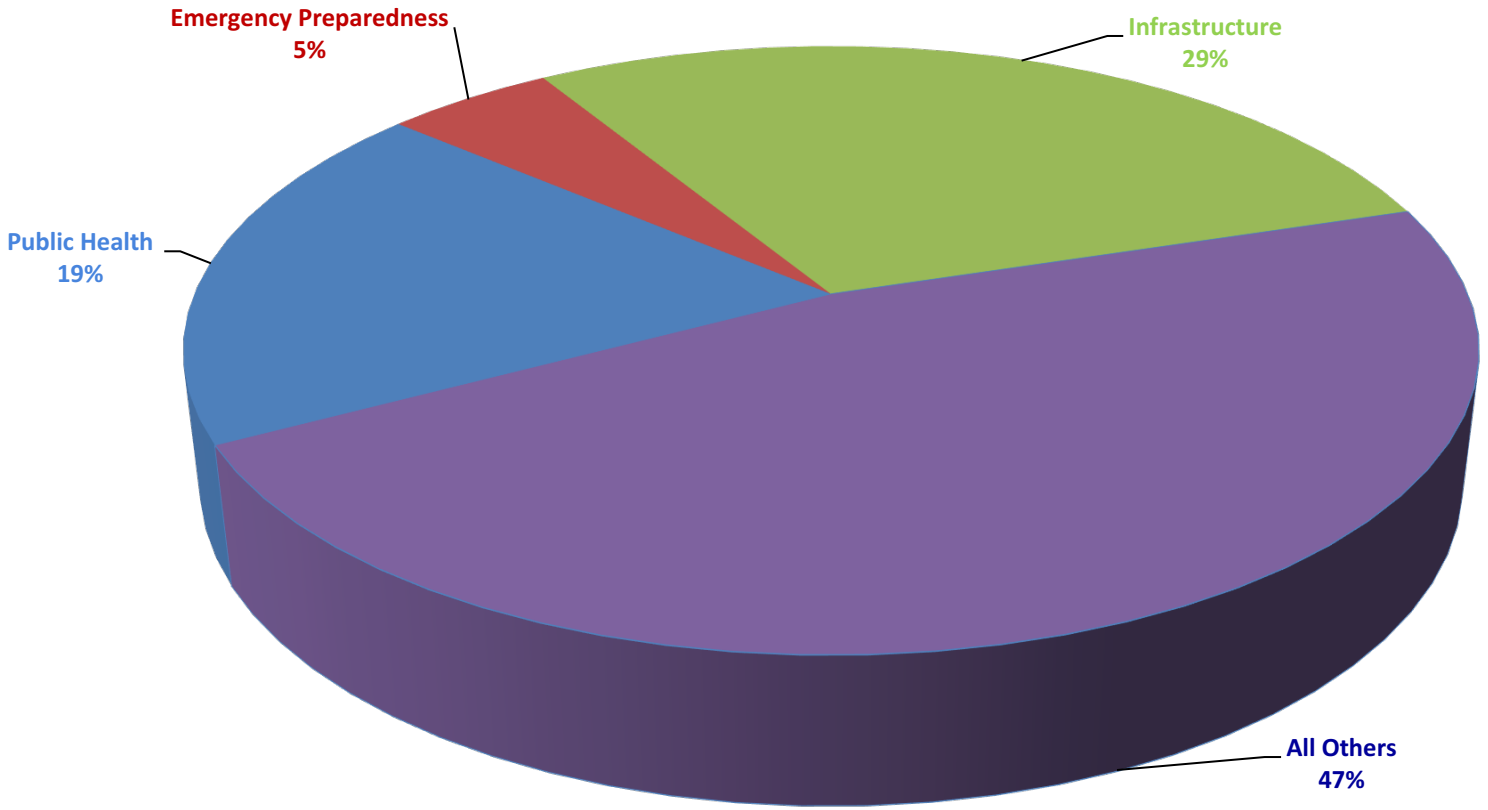


# Relevant Massachusetts Adaptation Goals

- Public Health Goals include
  - Climate-related needs assessments of public health infrastructure, vulnerable populations, provider capacity, etc.
  - Climate-related education campaigns
  - Asthma action programs
  - Workforce development on climate-related health threats
  - Enhancing electronic reporting procedures for laboratories
  - Strengthening vector surveillance systems
  - Promoting telecommuting during air quality alerts
  - Supporting the planting of hypoallergenic trees and use of porous pavement
  - Work with communities on water supply issues related to extreme weather
  - Strengthen runoff controls
  - Monitor pesticides and pursue integrated pest management strategies

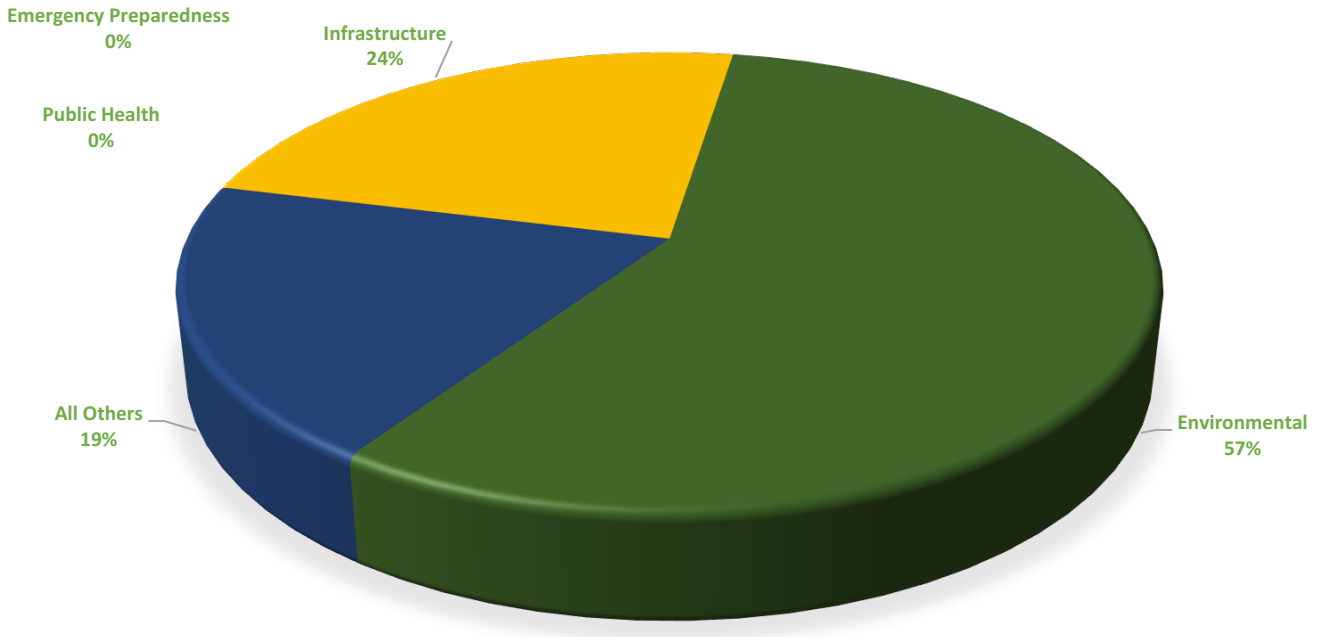
- Emergency Preparedness Goals include
  - Evaluate and update hazard mitigation, evacuation, and emergency response plans for climate vulnerabilities
  - Assess and enhance emergency management tools and capabilities for addressing extreme weather events

# Massachusetts Climate Adaptation Plan Goals by Sector



# Colorado Climate Adaptation Plan Goals by Sector

## Colorado




- Public Health Goals = 0
- Emergency Preparedness Goals = 0
- Public Health Steering Committee Reps = 0