



# Use-Inspired Data Information Services for NOAA's National Centers for Environmental Information

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[NOAA Satellite and Information Service](#) | [National Centers for Environmental Information](#) | [Center for Weather and Climate](#)



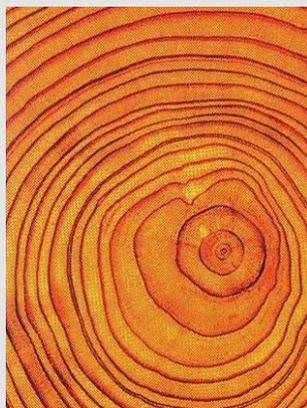
# NOAA's National Centers for Environmental Information

America's Leading Source of Environmental Information  
*Preserving, monitoring, assessing, and providing public access*

- Responsible for hosting and providing access to one of the most significant environmental archives on Earth, with comprehensive oceanic, atmospheric, and geophysical data
- From the depths of the ocean to the surface of the sun and from million-year-old sediment records to near real-time satellite images



# NCEI assimilates environmental data from many sources



## Data to Information

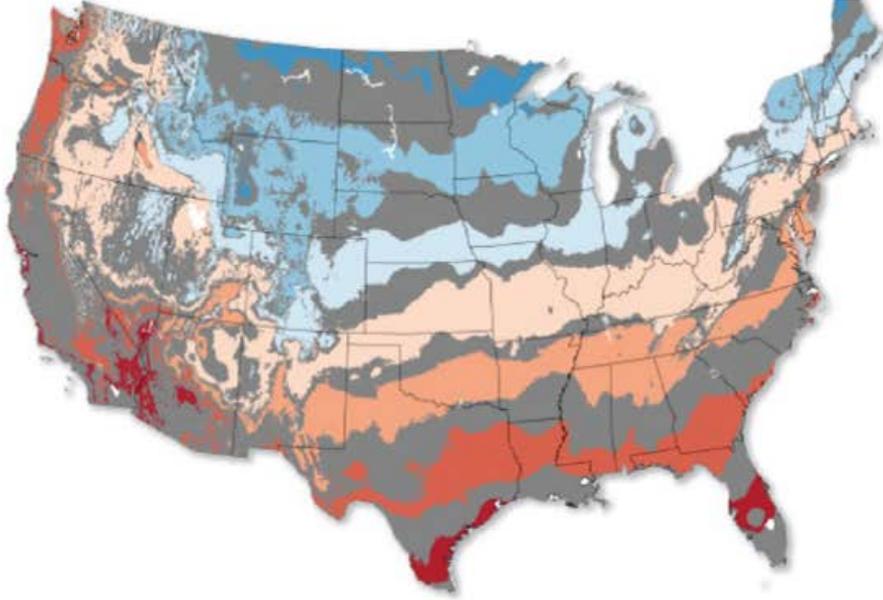
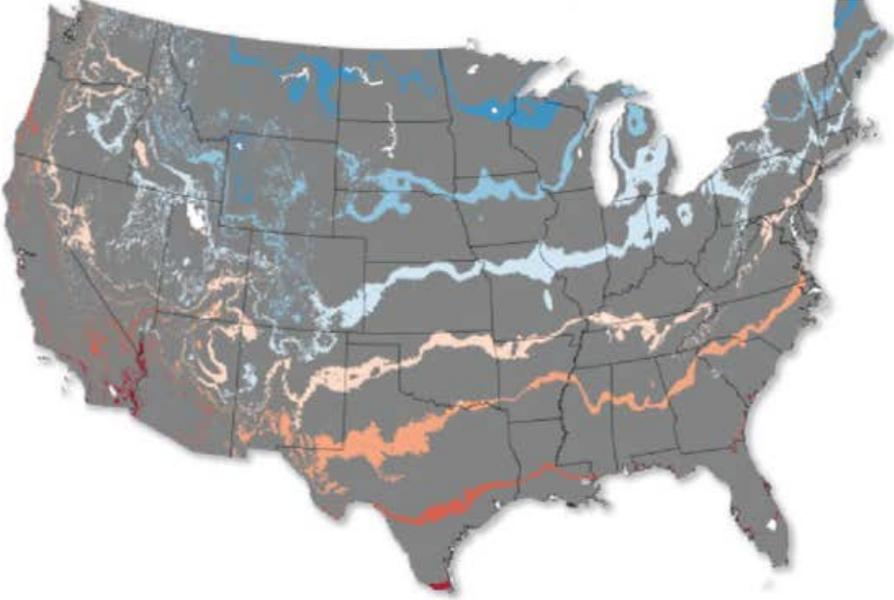
*Covering climate, weather, coasts, oceans, and geophysics*



# Stationarity is dead

Observed Change – Past 10 Years

Projected Change – Next 30 Years



**Shifts in Plant Hardiness Zones**  
*Based on extreme annual minimum temperatures*

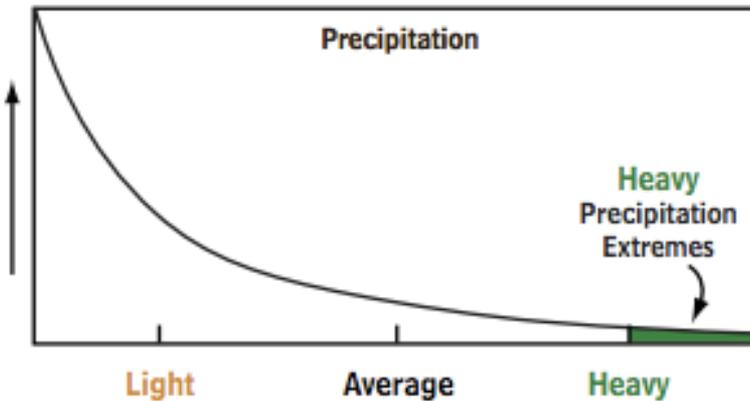
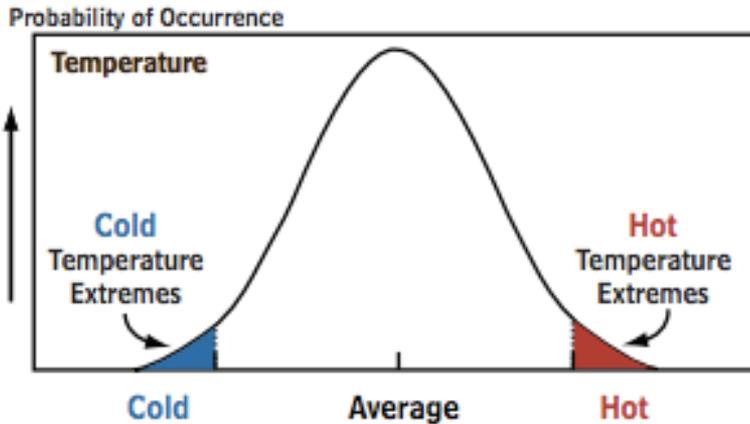


USDA-NRCS

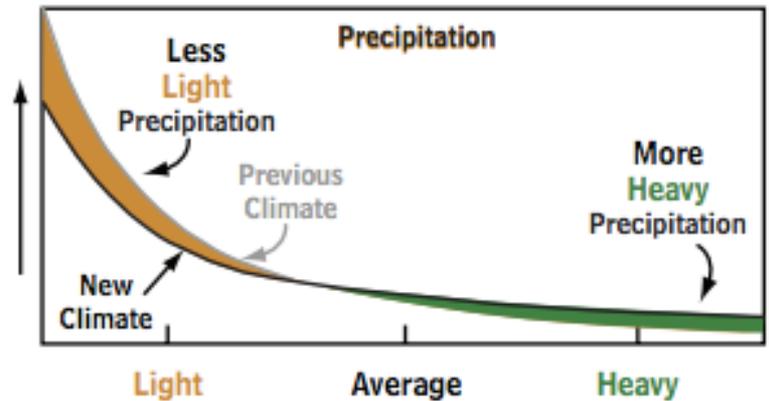
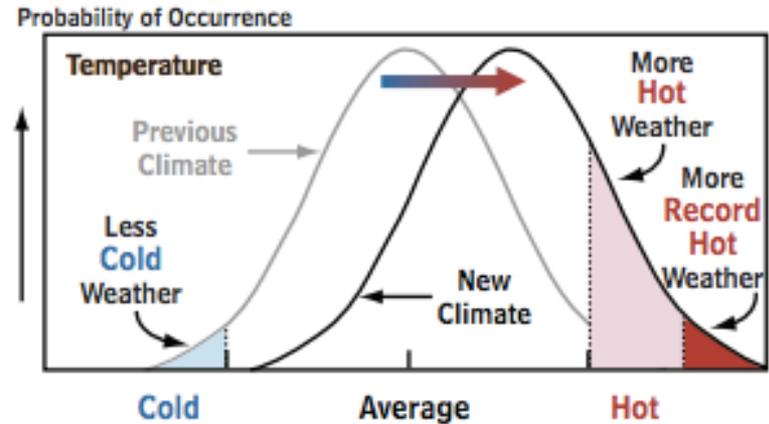


# Past is no longer prologue

## Stationary Climate



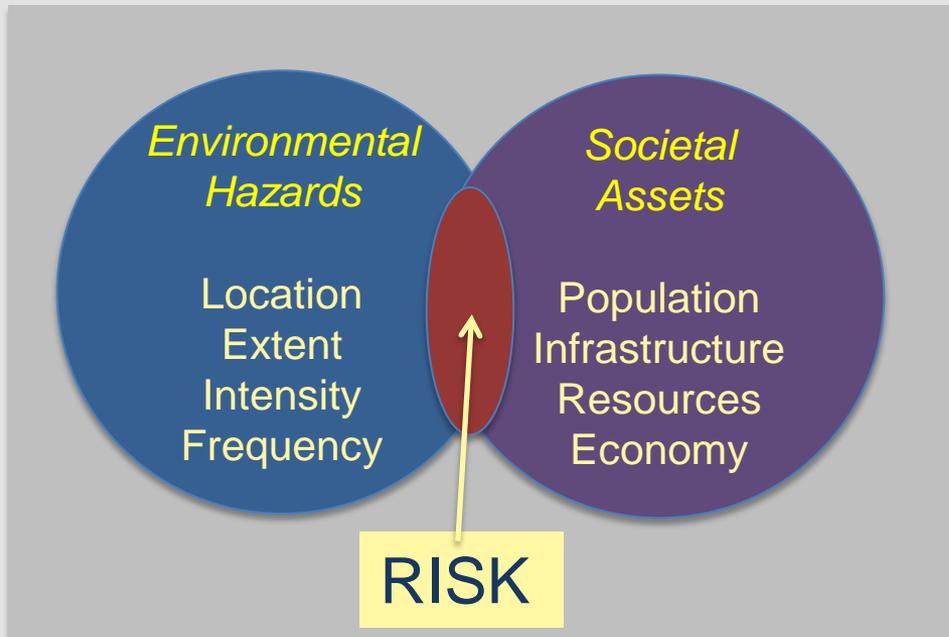
## Warming Climate



**More Extremes, More Risks**  
*Warmer, Drier, Intense Bursts of Precipitation*

Karl et al. (2008)

# Climate and society are on a collision course



Edmonds, Washington, USA (Andrew Kim)

# Environmental information can shape a better future

- 66% of projected development by 2050 has yet to be built.
- 420 million people in U.S. in 2050: Need for...
  - 89 million new or replaced homes
  - 60 billion square feet of new office, institutional, and retail space
  - 130 billion square feet of replaced non-residential space
- Approaches:
  - ***New Infrastructure:***
    - **Siting**
  - ***Existing Infrastructure:***
    - **Hardening/armoring**
    - **Relocation**
    - **Retreat**

Smart Adaption  
*Informed decisions are key*



*Ewing and Cervero, 2010*

# NCEI information services



- Raise awareness of environmental data products and services
- Capture user needs for products and services sustainment and development
- Target sectors that are economically prevalent and relevant to environmental change

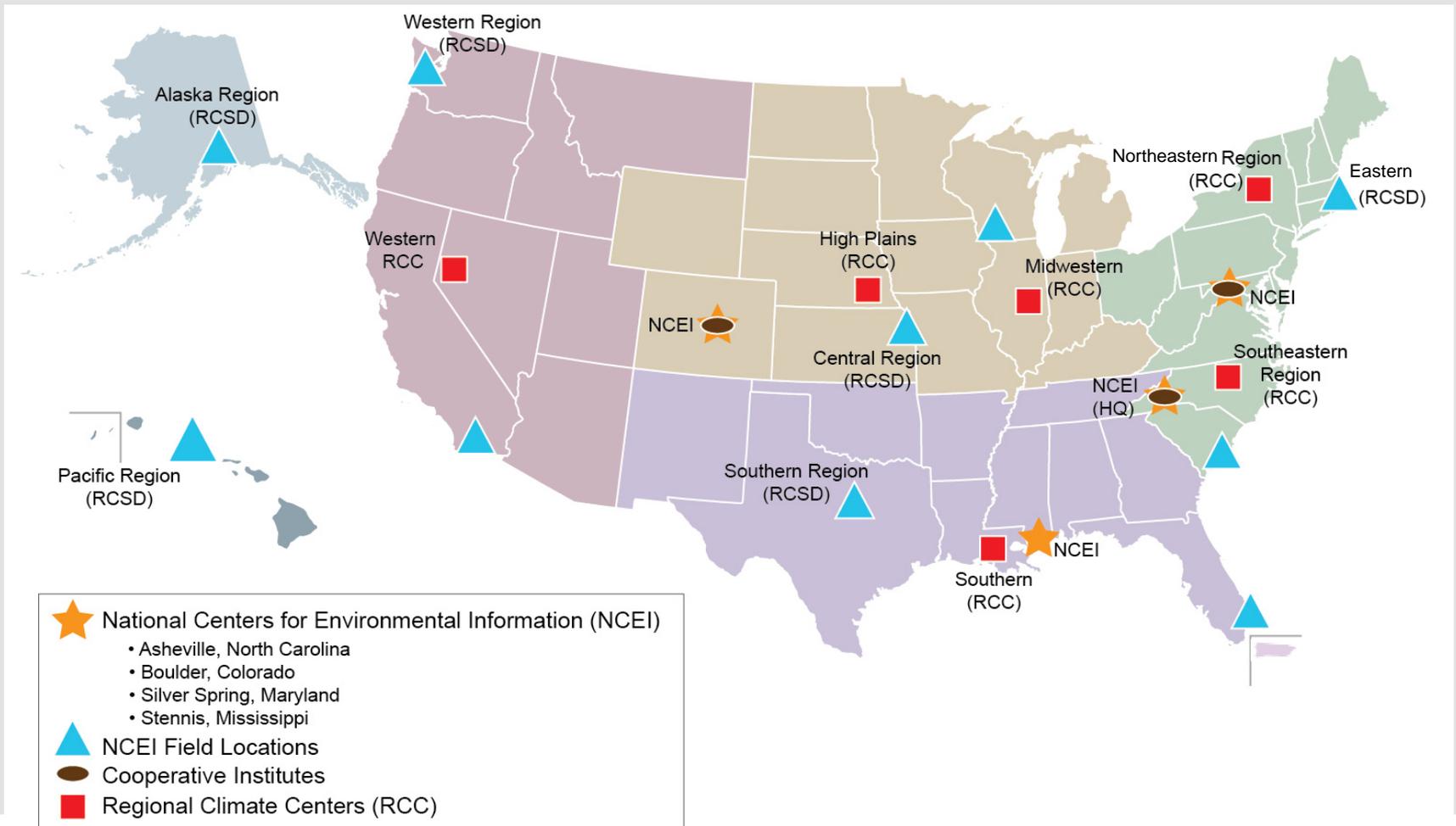
**Use-inspired, actionable information**

*To empower the public to make environmentally 'smart' decisions and manage risk*



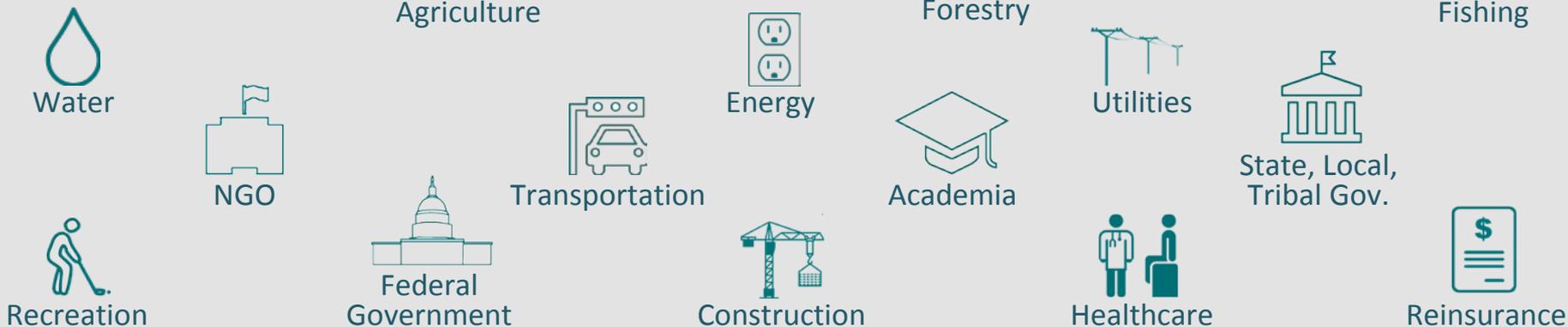
# NCEI information services *footprint*

From local to region to the nation and beyond  
*Collaboration and cooperation are essential to service delivery*



# NCEI information services *span of engagement*

## Economic sectors



## Regions



## Societal challenge areas

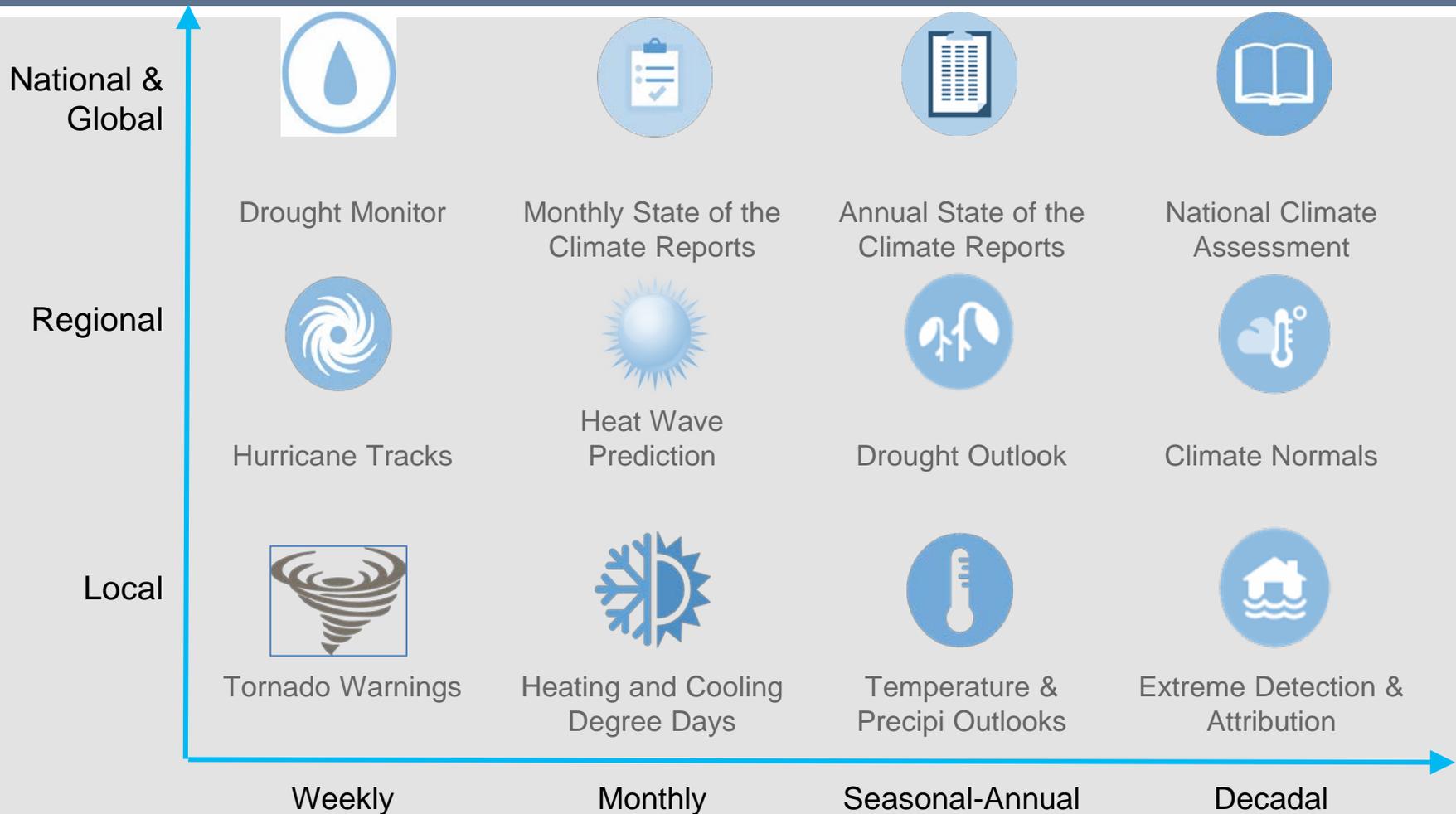


# NCEI engagement across sectors and regions

- Users:
  - By Economic Sectors, Regions, and Societal Challenge Areas
  - By Level of data expertise
- Information Providers:
  - Key Partnerships
  - Professional Associations
  - NESDIS/NOAA Teams
  - Cross-NOAA Groups
  - Interagency Groups
  - International Groups



# Integration for access to actionable information



Combining needs for information across time, space, & sectors  
*From records of weather alerts to climate projections*

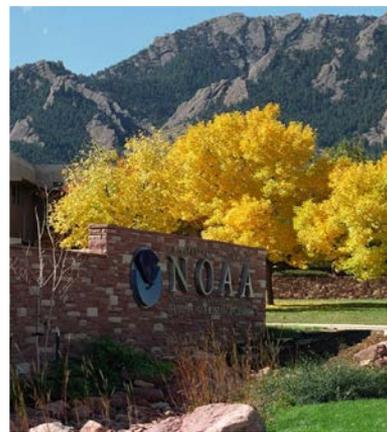
Integrated access to national and global data allows us to be better prepared to respond to the hidden consequences of environmental changes



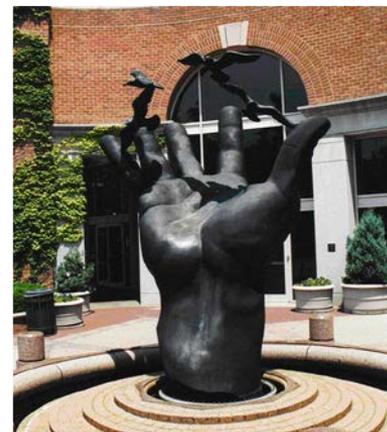
# NOAA's National Centers for Environmental Information



*Asheville, NC*



*Boulder, CO*



*Silver Spring, MD*



*Stennis, MS*



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# NCEI's Use-Inspired Data Information Services for Climate, Weather, Coasts, Oceans, and Geophysics

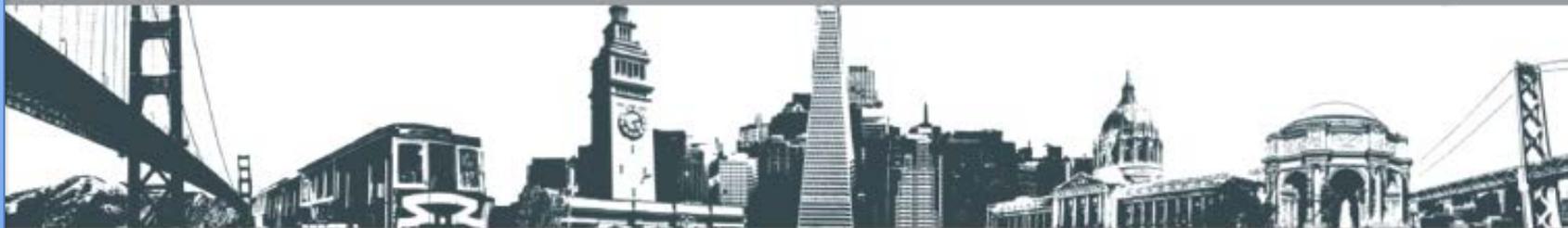
December 14, 2015 at 1:40 p.m. PST  
Moscone West 2020



# NCEI at AGU



Tim Owen



#AGU15 #NCEIatAGU

**“Integrated access to national and global data allows us to be better prepared to respond to the hidden consequences of environmental changes.”**

*– Tim Owen*



*NCEI's Use-Inspired Data Information Services  
for Climate, Weather, Coasts, Oceans, and Geophysics*

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