

NOAA's National Climatic Data Center

The World's Largest Archive of Climate and Weather Data



Timothy Owen
Operations Planning Officer
November 28, 2012

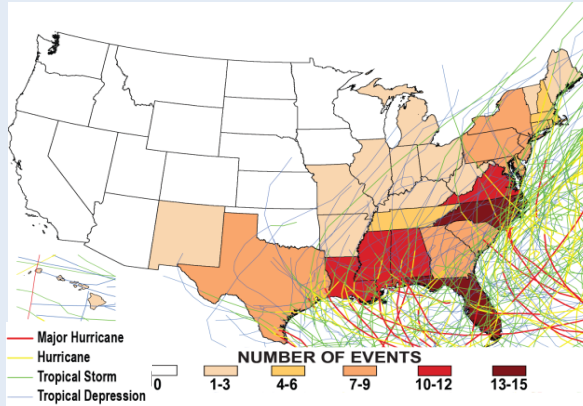
Protecting the past... Revealing the future

The Nation Is Climate-Conscious... for Good Reason

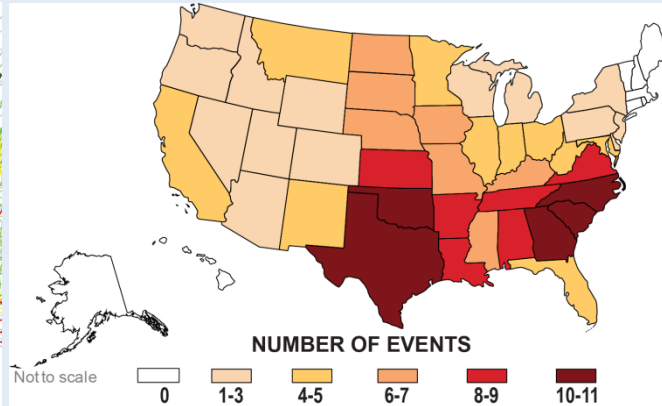


U.S. Billion-Dollar Weather and Climate Disasters: 1980 – 2011

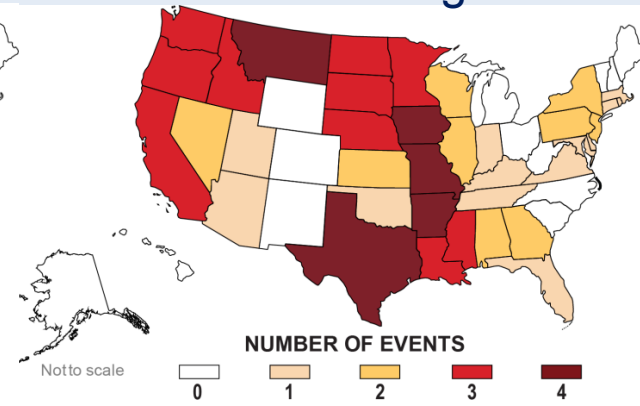
Hurricanes and Tropical Storms



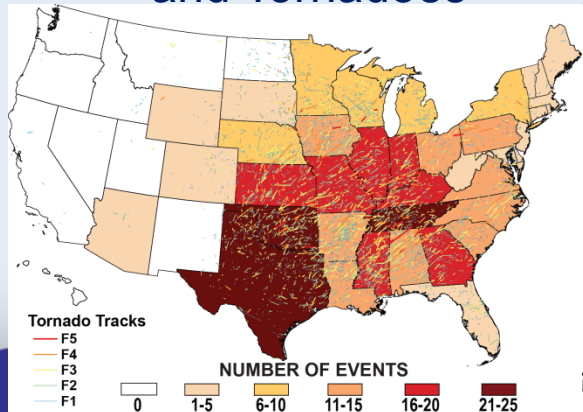
Drought and Heat Wave



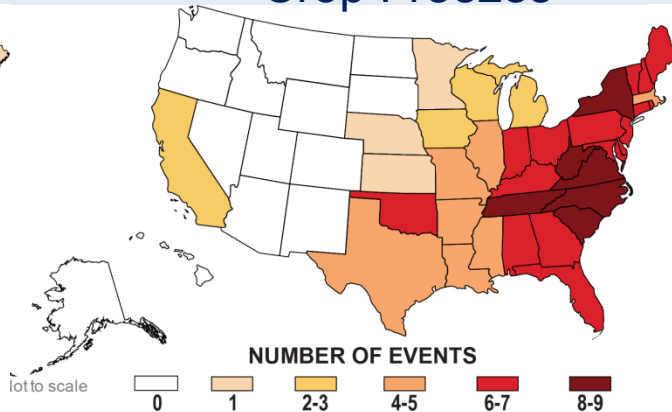
Flooding



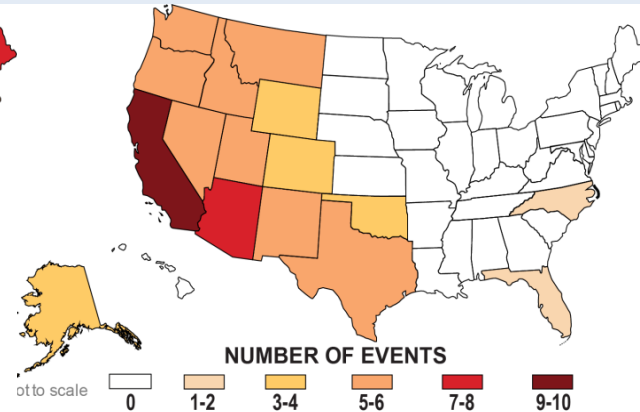
Severe Local Storms and Tornadoes



Winter Storm and Crop Freezes

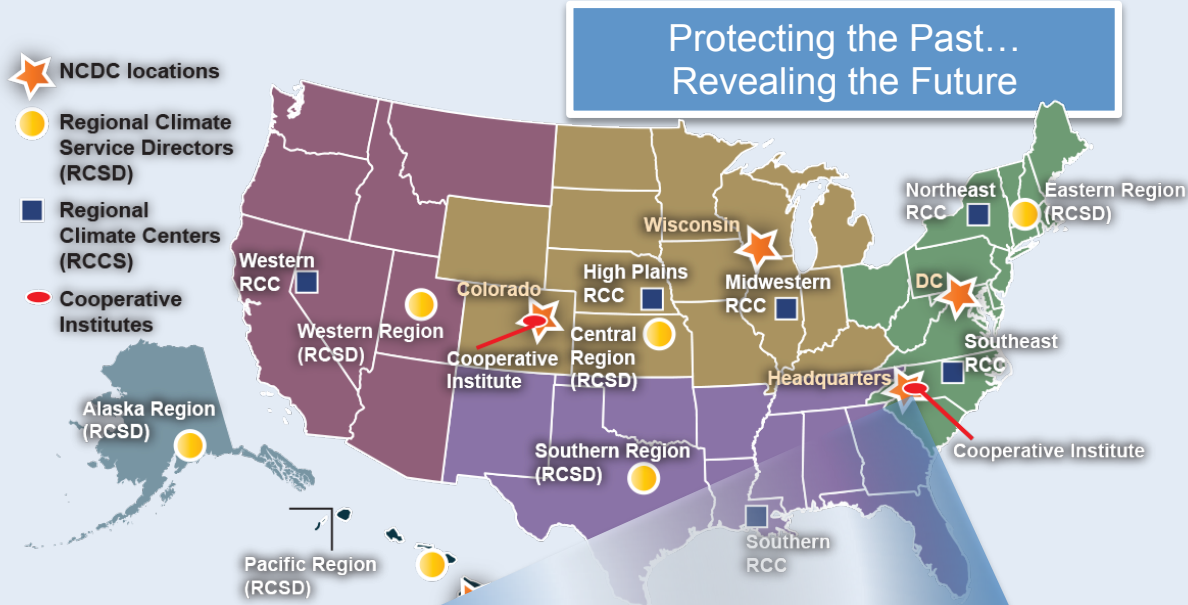


Wildfires



NCDC: Where are we?

Who are we? What do we do?



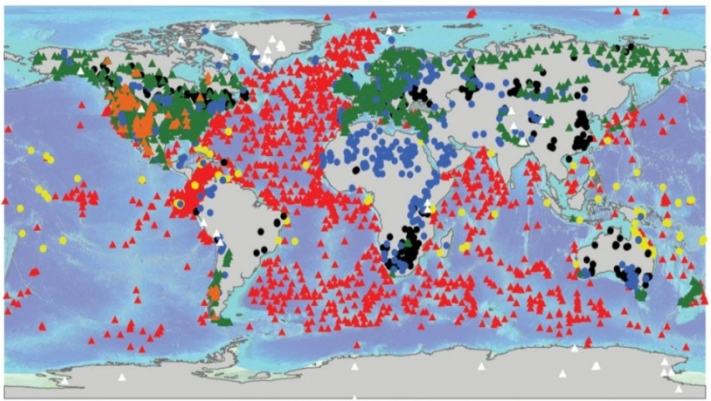
- 160 Federal Employees
 - Alaska, Colorado, Hawaii, Maryland, Missouri, New York, North Carolina, Texas, Utah, Wisconsin
- 153 NCDC Headquarter Contractors
- 6 Regional Climate Centers
- 2 Cooperative Institutes



Acquire and Archive Climate Data From U.S. and International Sources

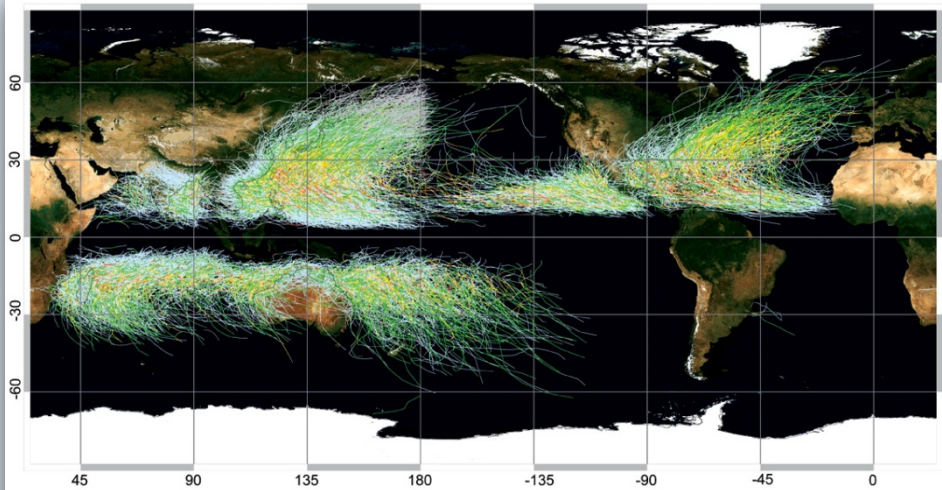


Data spans stone-age to space-age... and across the globe



Location Descriptions
 ● Coral ● Lake ● Borehole ▲ Ocean ▲ Fire History ▲ Tree Ring ▲ Ice Core

Paleoclimate Site Locations



● All IBTrACS storms ● Cat-1 Hurricane ● Cat-4 Hurricane
 ● Tropical Depression ● Cat-2 Hurricane ● Cat-3 Hurricane ● Cat-5 Hurricane
 ● Tropical Storm

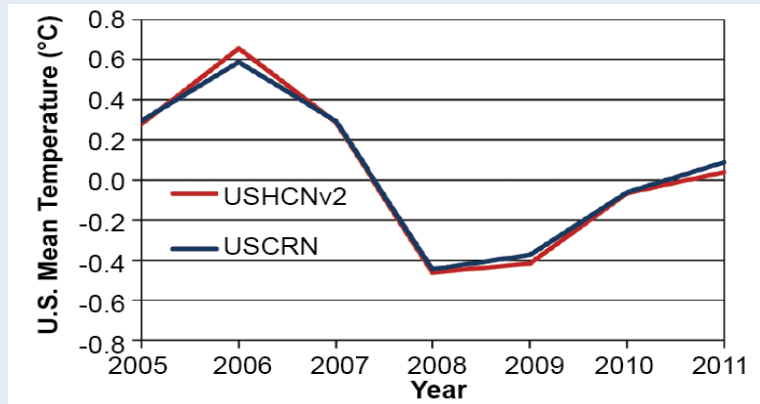
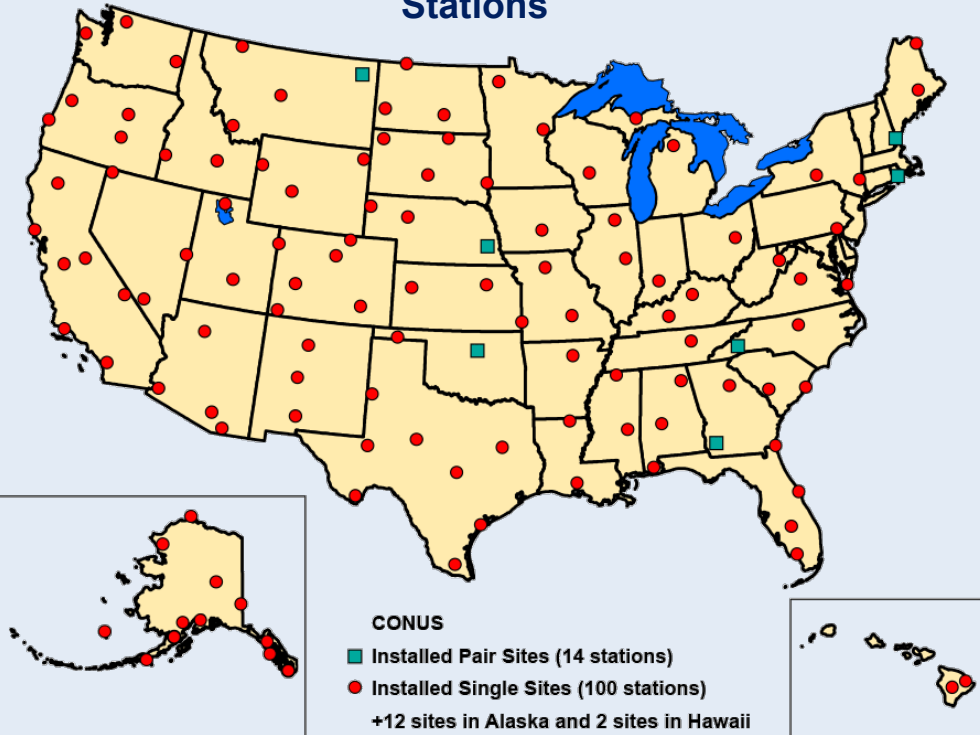
IBTrACS (International Best Track Archive for Climate Stewardship) 1842-2011



Managing and Operating the U.S. Climate Reference Network



U.S. Climate Reference Network (USCRN) Stations



Comparison of Adjusted Mean Annual Temperature

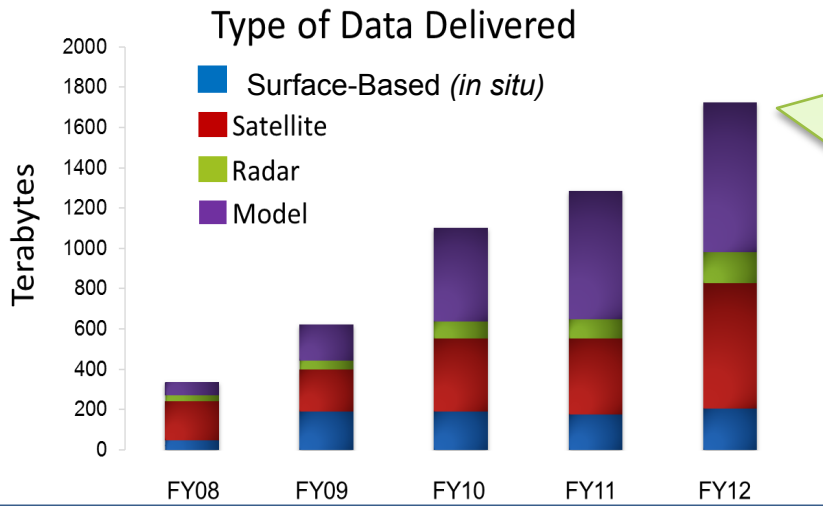
Reference Networks offer climate-quality information for assessing long-term climate change and variability



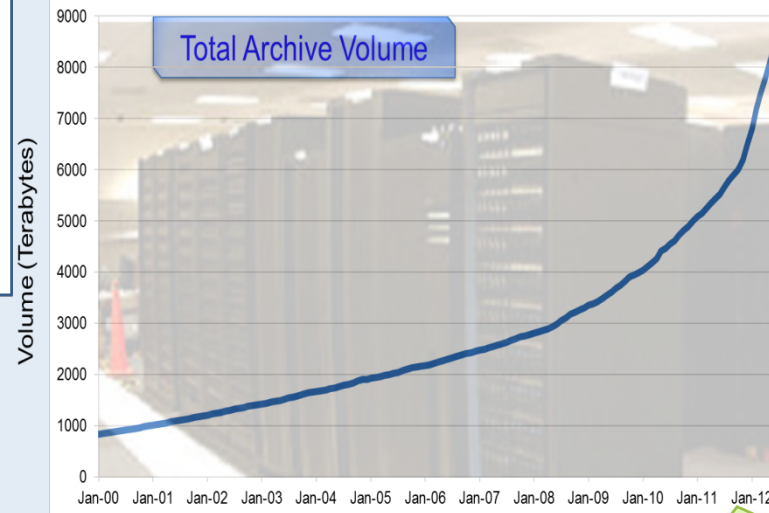
Climate Reference Network Site: Montrose, Colorado

Serving and Preserving the Nation's Climate Data

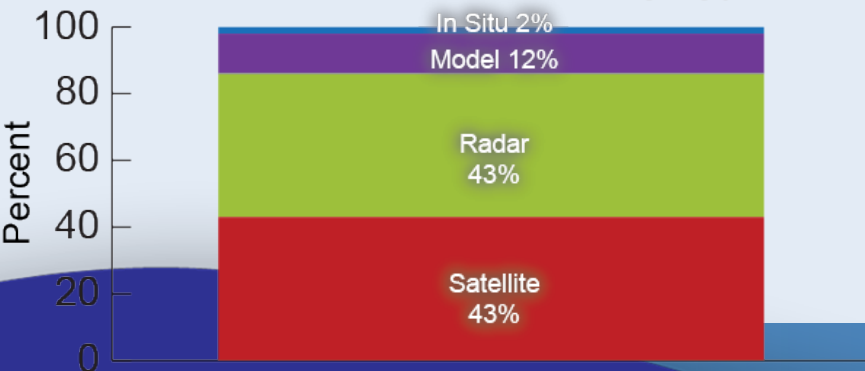
Demand Continues to Grow



Users download over 1,900 Terabytes/year = 6 Million Kindle Books/day



Archive Data Volume by Type



NCDC provides safe storage of 9,900 Petabytes = 11.5 Billion Kindle Books

Serving A Wide Range of Customers



- Consulting Meteorologist
- Agriculture
- Contractor
- Utilities
- Federal Government
- State/Local Government
- Research
- Media
- University
- Insurance
- Engineering
- Individual
- Legal
- Other Business

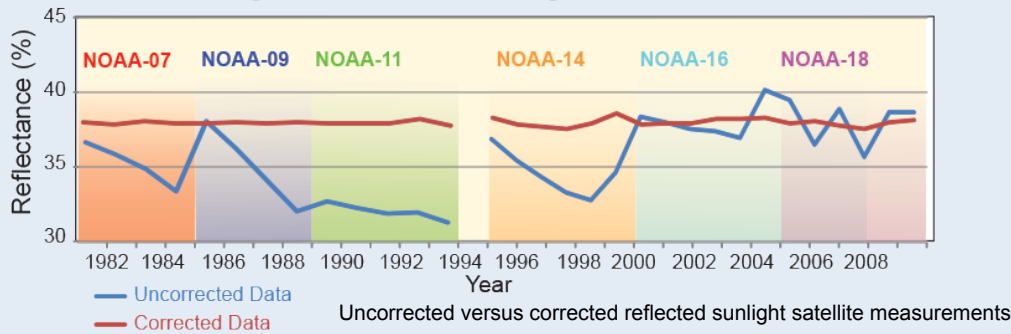


Assemble Data into Easy-to-Use, Long-Term Datasets: Climate Products

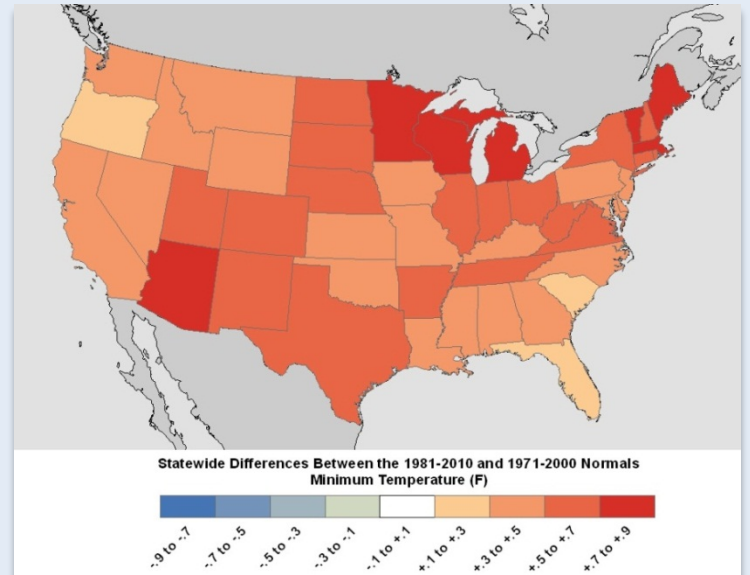


Climate Data Records provide robust information for scientific applications based on the Nation's investment in observation systems

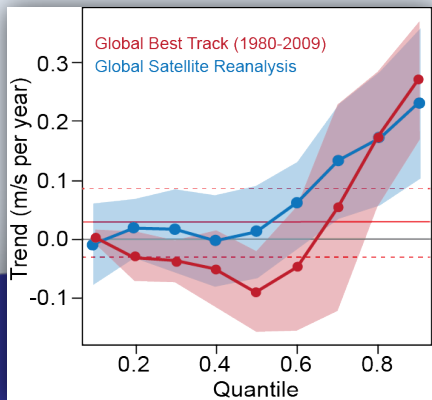
Average Annual Reflected Sunlight from NOAA Satellites



NCDC released the 1981-2010 statistical Climate Normals for 9,800 stations



Global Tropical Cyclone Intensity Trends



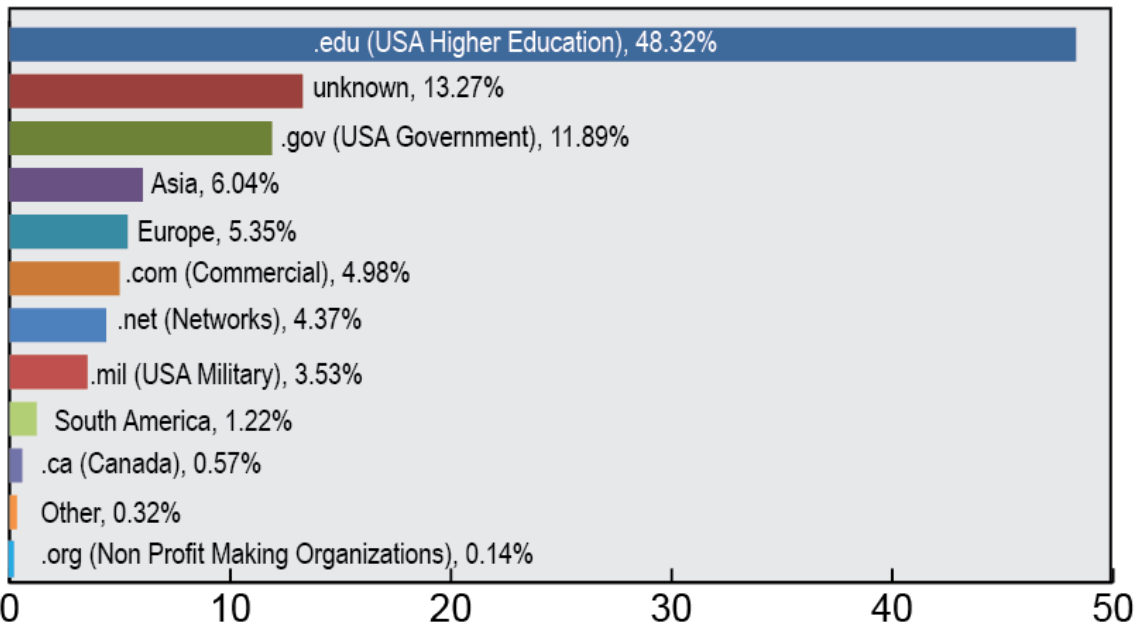
Who Is Using Our Weather and Climate Data?



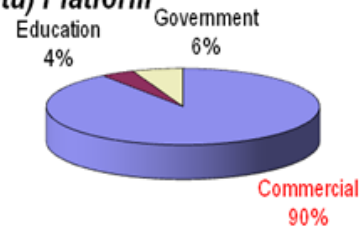
For past 12 months through September 2012

- Calls: 15,588
- E-Mails: 7,056
- Faxes: 223
- Letters: 236

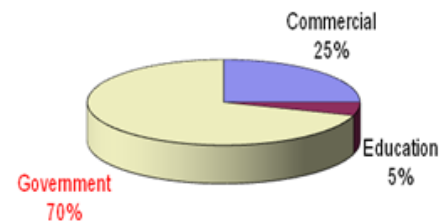
On-Line User Profile



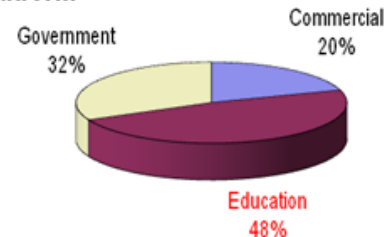
Earth (In-Situ) Platform



Satellite Platform



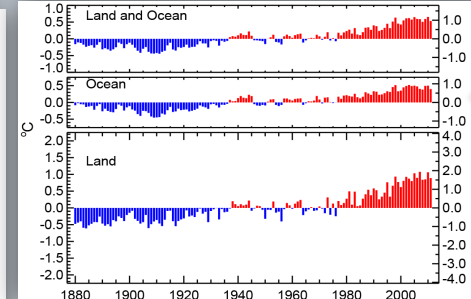
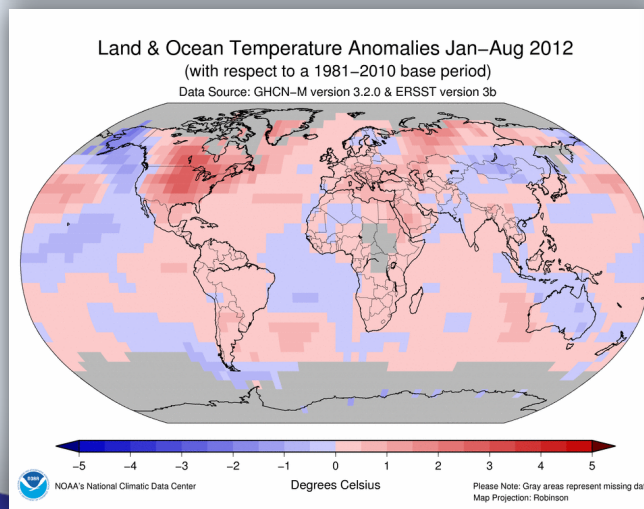
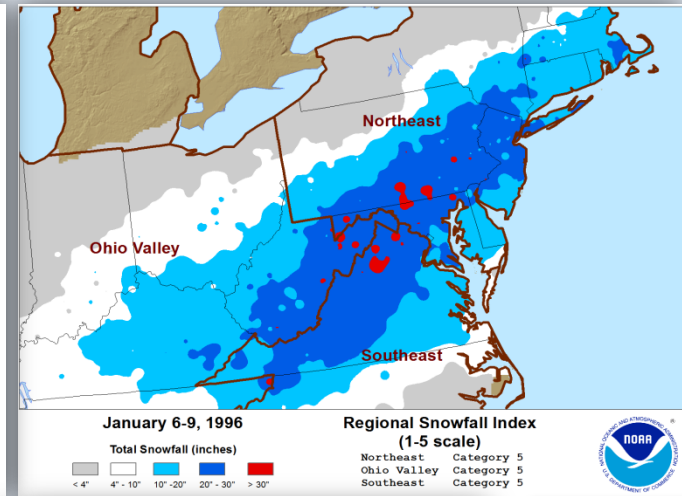
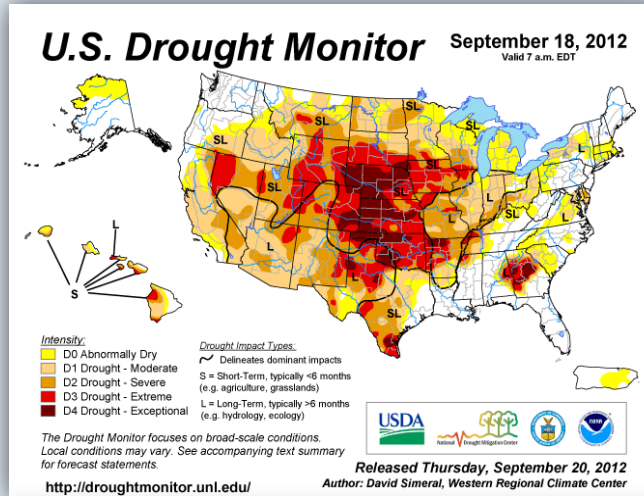
Radar Platform



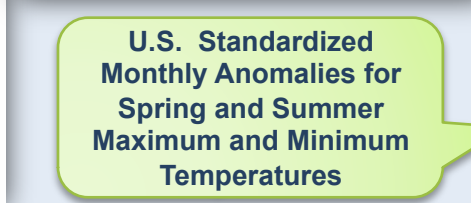
Assess the Earth's Climate: Climate Monitoring A Few Examples



- Host and co-produce the U.S. Drought Portal
- Produce weekly, monthly, seasonal, and annual climate analyses
- Produce assessments of snowfall across the U.S.
- Analyze variations and changes in global surface temperature

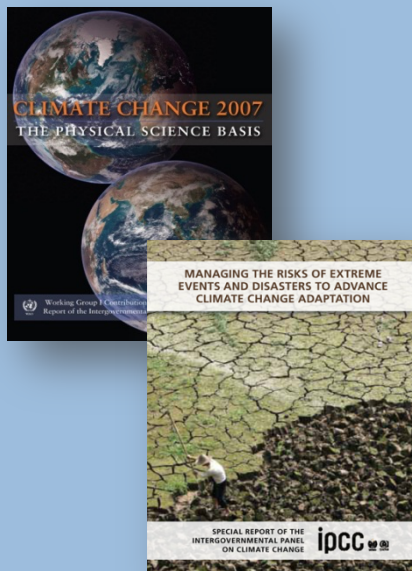


Global Surface Mean Temperature Anomalies



Standardized Anomaly

Assess the Earth's Climate: International, National, Annual Assessments



International Assessments

- 3 NCDC lead authors and review editors on Fourth Assessment Report
- 2 NCDC lead authors on Fifth Assessment Report
- 2 NCDC lead authors on Special Report on Extremes



National Assessments

- NCDC provides leadership for all National Climate Assessments
- NCDC hosts National Assessment's Technical Support Unit



Annual Assessments

- NCDC coordinates 378 authors from 48 countries
- Covered by all major news networks, briefed to Hill staff

Over 50 peer-reviewed papers every year

Climate.gov



Portal for NOAA-wide Data and Information

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Articles

State of the Climate in 2011

Featured Article, July 10, 2012
Caityln H. Kennedy, David Herring, Katy Vincent, LuAnn Dahlman, Rebecca Lindsey, Susan Osborne
Highlights of the 2011 report include wild weather extremes, a double-dip La Nina and continued evidence of long-term climate warming.
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Meet NOAA's climate scientists and get their perspectives on climate.

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Tell Me Why: Satellite Climate Data Matters
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Asheville Climate Partners



Cooperative Institute for Climate and Satellites – NC

- NC State University
- Co-located in Federal Building downtown

University of North Carolina – Asheville

- Certificate in Climate Change and Society, and concentration in Climate Change and Society within the MLA Degree
- Renaissance Computing Institute (RENCI)
 - Disaster research, mitigation, and preparedness and local economic development
- National Environmental Modeling and Analysis Center (NEMAC)
 - Applied environmental research to create decision-support tools addressing societal challenges

AB-Tech Institute for Climate Education

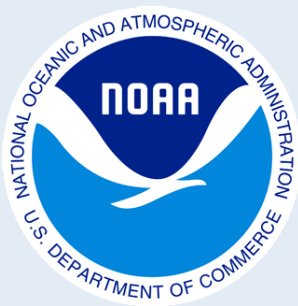
Centers for Environmental and Climatic Interaction (CECI)

North Carolina Arboretum

- Collaborative Agreement with NCDC and American Public Gardens Association to sponsor educational programs

Questions?

ncdc.noaa.gov
climate.gov



Protecting the past... Revealing the future