

NOAA Climate Services

NatureServe Conservation Conference 2009

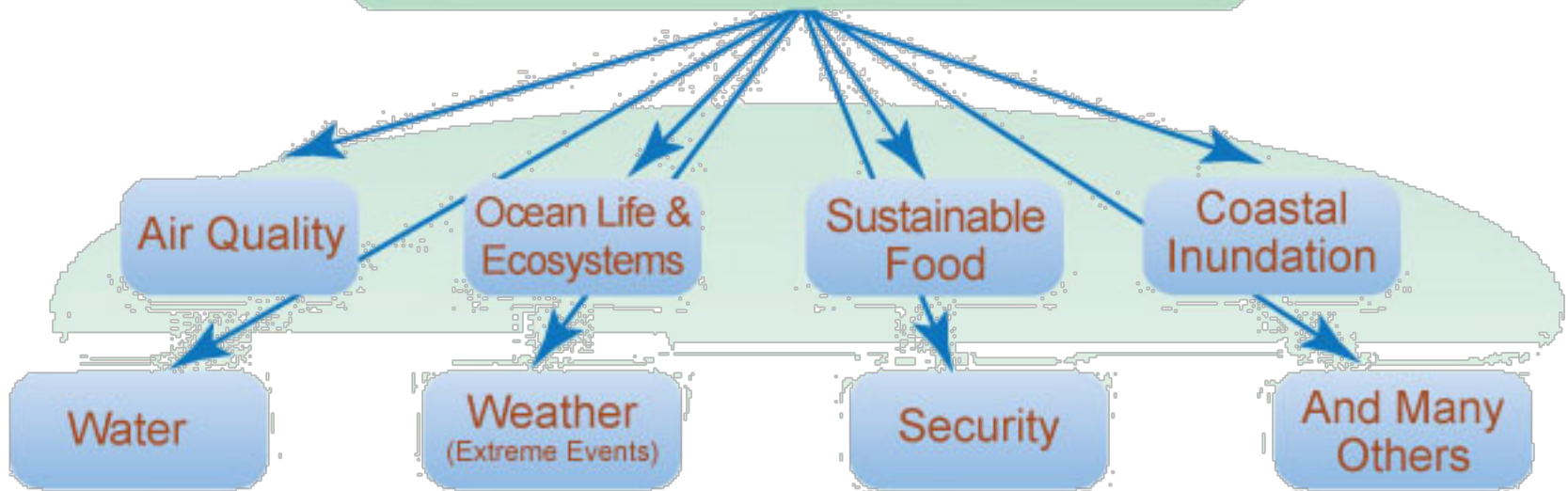
April 23, 2009

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NOAA Coastal Services Center
LINKING PEOPLE, INFORMATION, AND TECHNOLOGY

Impacts Are Why Climate Change Matters



Climate information will need to be considered in a myriad of environmental, economic and social decisions.

Climate Change: A National Challenge

•The Challenge: Climate Change

•Climate change is now threatening our economic prosperity, human health, national security, ecosystems, and our environment.

•Meeting the Challenge:

•A National Climate Service

•The critical need is to develop and communicate *authoritative, regular and actionable information* for adaptation and mitigation decisions.

"We need federal policies and funding that will enable local communities to identify their vulnerabilities in the face of the climate disruption, and that will support local efforts to minimize, prepare for and adapt to these impacts."
- [U.S. Mayors *Federal Climate Policy Framework*, 2007]

Demand for a National Climate Service

- Demand from decision makers:

"Decision makers at all levels of government and in the private sector need reliable and timely information to understand the possible impacts and corresponding vulnerabilities that are posed by climate change so that they can plan and respond accordingly." - Western Governors Association statement to House Committee on Science and Technology, May 3, 2007

- Infrastructure, Energy, and Transportation:

"While every mode of transportation in the U.S. will be affected as the climate changes, potentially the greatest impact on transportation systems will be flooding of roads, railways, transit systems, and airport runways in coastal areas because of rising sea levels and surges brought on by more intense storms," - The National Academies 2008

- Policy and Legislation:

"[Climate science] bears importantly on the trade-off between acting sooner with imperfect information versus delaying action in expectation of reducing uncertainties." - CRS Report to Congress
"Implement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80% by 2050," - President Obama's Climate Agenda

- National Security:

"From a national security perspective, climate change has the potential to affect lives (for example, through food and water shortages, increased health problems including the spread of disease, and increased potential for conflict), property (i.e. through ground subsidence, flooding, coastal erosion, and extreme weather events), and other security interests."

- Congressional Testimony Chairman, National Intelligence Council

- National Research Council Recommendations:

"Coordinate federal efforts to provide climate services (scientific information, tools, and forecasts) routinely to decision makers."... "The services should be lead by a single agency but have broad participation from other federal agencies"

- Restructuring Federal climate research to meet the challenges of climate change. NRC, 2009

BACKGROUND

The concepts of an NCS are derived from a rich background of external and internal efforts.

- The National Research Council's Report on "Restructuring Federal Climate Research to Meet the Challenges of Climate Change"
- NOAA and EPA Sponsored National Research Council Report on "Informing Decisions in a Changing Climate"
- NOAA's Science Advisory Board Report on "Options for a National Climate Service"
- NOAA's own draft report, "Strategic Plan for a National Climate Service"

LEGISLATIVE MANDATES

Existing statutes give NOAA: the Authority

- National Climate Program Act of 1978
- Global Change Research Act of 1990*
- National Integrated Drought Information Services Act of 2006
- Hydrographic Services Improvement Act 1998
- National Weather Service Organic Act of 1890
- Marine Mammal Protection Act, Amended 2007
- National Marine Sanctuaries Act, Amended 2000*
- Coastal Zone Management Act, Amended 1996*
- Endangered Species Act of 1973, Amended 1988*
- Magnuson-Stevens Fishery Conservation and Management Act, Amended 2007
- Coral Reef Conservation Act of 2000*

** = current attempt to reauthorize*

1978 National Climate Program Act

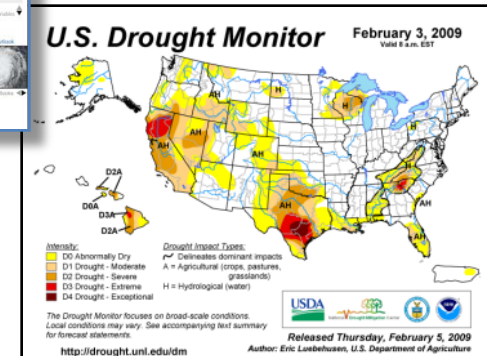
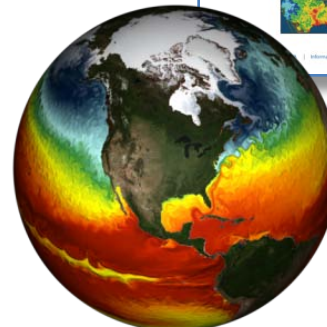
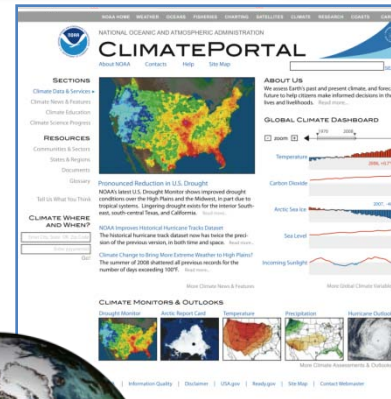
"It is the purpose of the Congress in this Act to establish a national climate program that will assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications."

"The Secretary shall establish within the Department of Commerce a National Climate Program Office . . ."

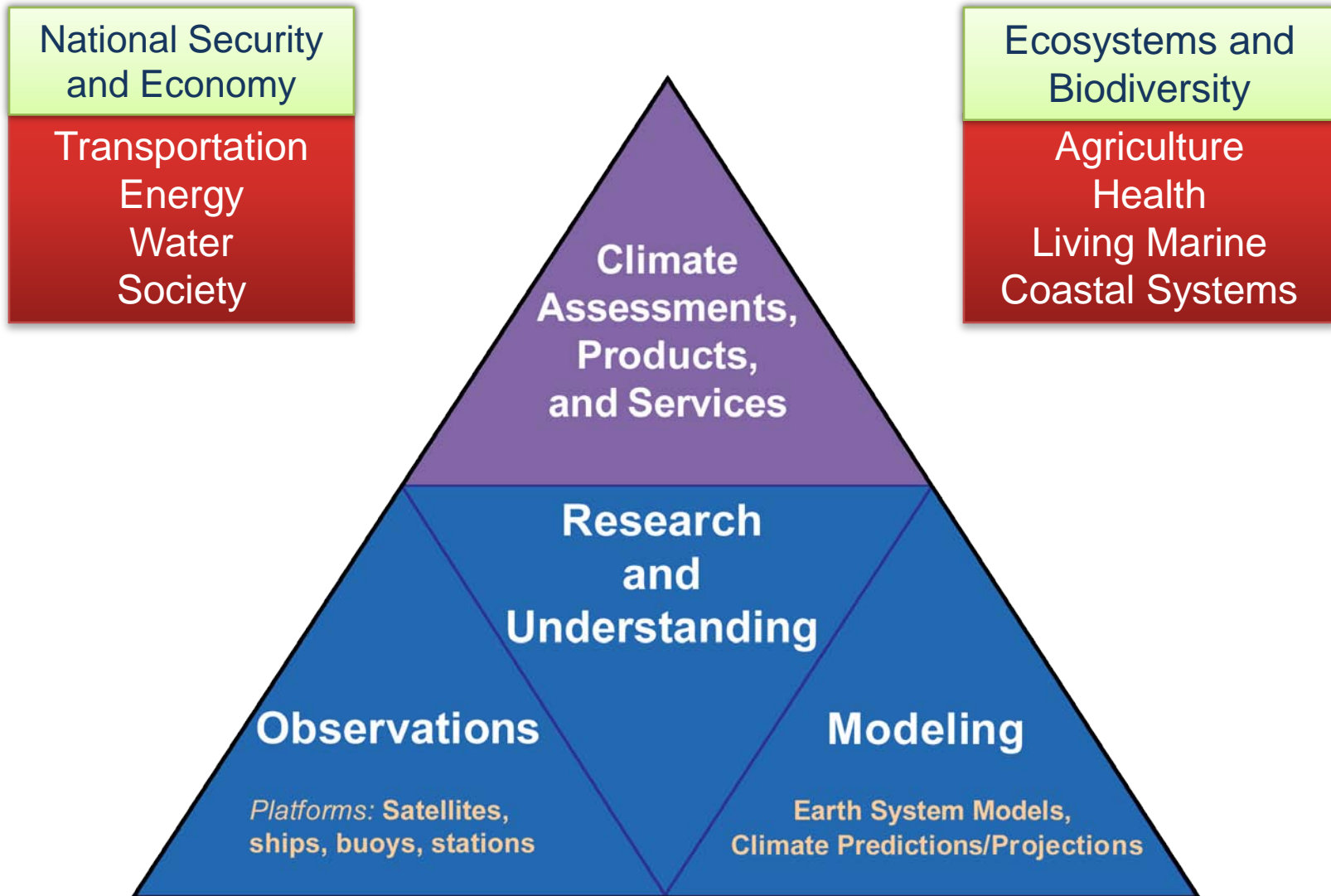
RECORD OF LEADERSHIP

- International and national leadership in climate science

- A foundation for services based on:
 - Observations & monitoring
 - Data stewardship
 - Research and modeling
 - Partnerships
 - Operational
 - Research
 - Regional infrastructure
 - Community workshops



NOAA'S CLIMATE TOOL BOX



NOAA's Climate Services to the Nation

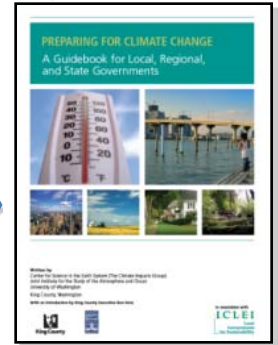
- Develop and deliver operational climate information products and services
- Support research on the impacts of climate variability and change on human and natural environments
- Support the development of assessments and adaptation strategies from international to local levels
- Collaborate with stakeholders to enhance their capacity to use climate information and related decision-support resources
- Two emerging areas:
 - Regions (local translation through NOAA's regional channels)
 - Sectors of interest (water, agriculture, coastal and marine resources, energy)

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Connecting NOAA's Climate Related Research and Services to Local/Regional/International Adaptation Efforts

Climate Change Guidebook: Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments

- Provides detailed description of why and how to prepare for climate change at the local/regional scale



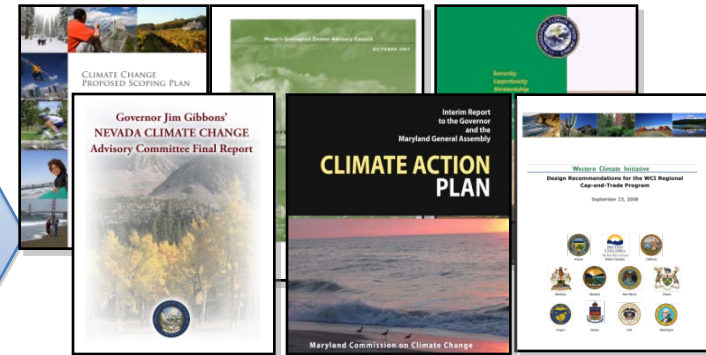
Digital Coast – NOAA Visualization and Data Tools

- Provide GIS and visualization tools for users to examine the impacts of changing climate conditions in their area
- Example (Left) – data simulation of inundation on Charleston, SC



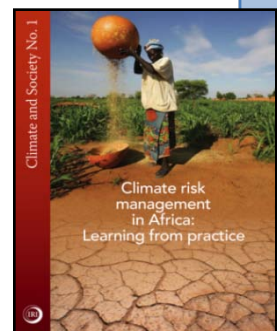
State- and Local-Level Adaptation Planning:

- Support state and local adaptation planning efforts through NOAA's climate related research and services



International: Climate Risk Literacy Guides

- Present the knowledge that is important for citizens to know and understand about Earth's climate
- Goal is to promote greater Climate Science Literacy among the public



National Climate Service Partnerships - users and providers



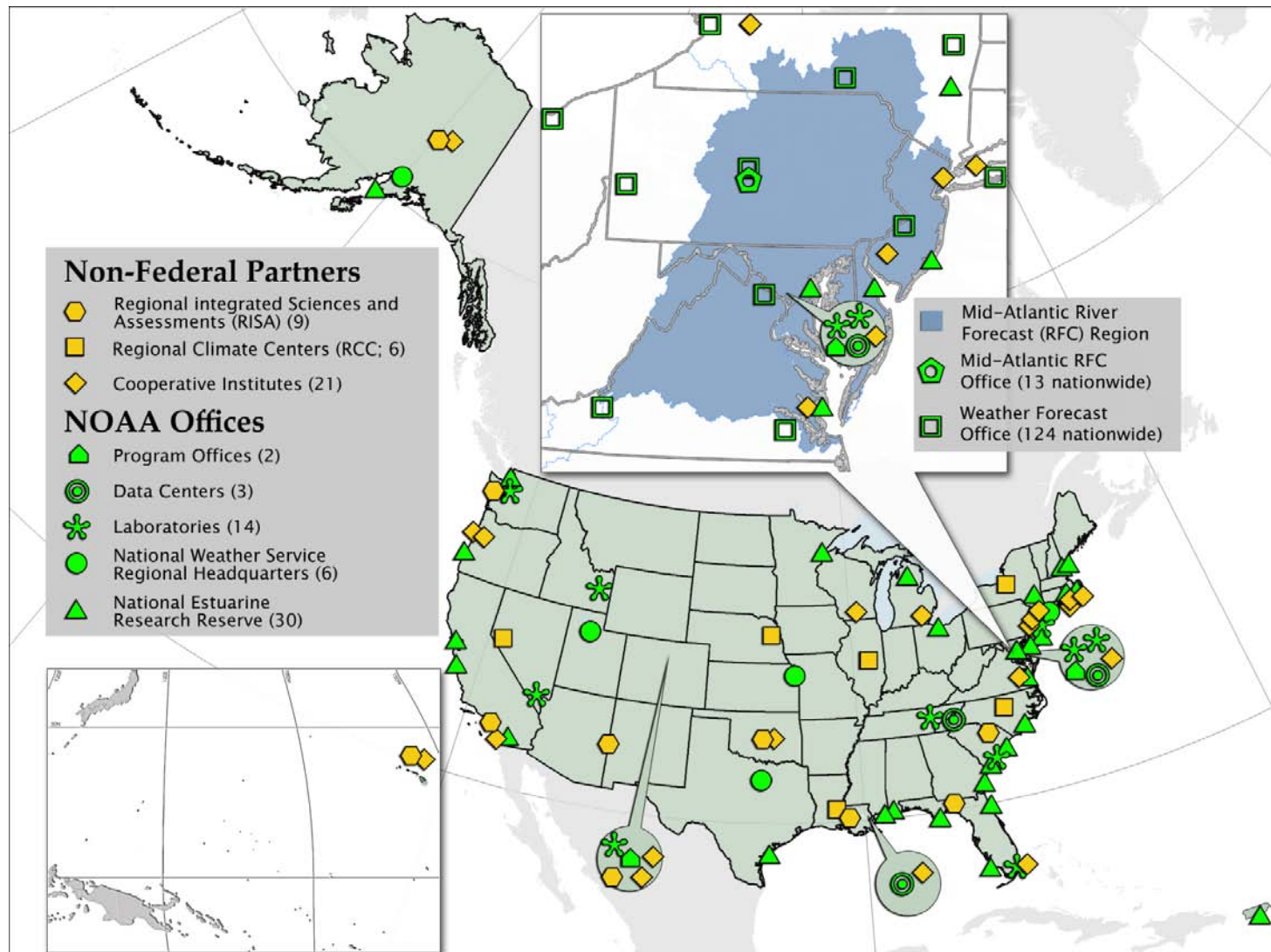
Climate Service Advice

- Users
- Providers

Mechanisms

- Federal Advisory Committees
- American Meteorological Society
- Other Associations / Societies

NOAA'S BROAD-BASED CLIMATE SERVICE CAPABILITIES



"Experience has shown that connections between climate scientists and stakeholders are most effective at the local, regional, statewide, and multistate scales at which the stakeholders operate." - Ed Miles (PNAS, 2006)