

# U.S. Global Change Research Program National Climate Assessment Global Change Information System

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United States  
Global Change  
Research Program

[www.globalchange.gov](http://www.globalchange.gov)

# The Global Change Research Act and USGCRP

- USGCRP was mandated by Congress in the Global Change Research Act (GCRA) of 1990 (P.L. 101 – 606)

*“To provide for development and **coordination** of a comprehensive and integrated United States Research Program which will assist the Nation and the world to **understand, assess, predict, and respond** to human-induced and natural processes of global change.”*



# U.S. Global Change Research Program

## The Program:

- **Coordinates** Federal research to better understand and prepare the nation for global change
- **Prioritizes** and supports cutting edge scientific work in global change
- **Assesses** the state of scientific knowledge and the Nation's readiness to respond to global change
- **Communicates** research findings to inform, educate, and engage the global community



## United States Global Change Research Program



# Subcommittee for Global Change Research



# Subcommittee for Global Change Research

**Thomas Karl, NOAA**  
Chair

**Ann Bartuska, Department of Agriculture**  
Vice Chair for Adaptation Science

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Vice Chair for Integrated Observations

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**Henry Kelly, OSTP**

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**Stuart Levenbach, OMB**

**Jason Bordoff, Council on Environmental Quality**

**Rick Duke, Dept of Energy, Climate Change  
Technology Program**

**Fabien Laurier**  
Deputy Director and Executive Secretary

**John Balbus, Dept of Health and Human Services**

**William Hohenstein, Dept of Agriculture**

**Chester Koblinsky, NOAA**

**Jack Kaye, NASA**

**Linda Lawson, Department of Transportation**

**Leonard Hirsh, Smithsonian Institution**

**Michael Kuperberg, Department of Energy**

**Jonathan Pershing, Department of State**

**Joann Roskoski, National Science Foundation**

**Andy Miller, Environmental Protection Agency**

**Joel Clement, Department of the Interior**

**Linwood Vincent, Department of Defense**

**Katherine Batten USAID**



# The USGCRP Vision and Mission

**Vision** - *A nation, globally engaged and guided by science, meeting the challenges of climate and global change.*

**Mission** - *To build a knowledge base that informs human responses to climate and global change through coordinated and integrated federal programs of research, education, communication, and decision support.*



# US Global Change Research Program

## Strategic Plan (2012-2021)

- Draft reviewed by National Research Council and public comment
- More information at <http://globalchange.gov>

## Goals

- Advance Science
- Inform Decisions
- Conduct Sustained Assessments
- Communicate and Educate





U.S. Global Change Research Program

# National Climate Assessment

<http://assessment.globalchange.gov>

*Global Change Research Act (1990), Section 106*

**...not less frequently than every 4 years,** the Council... shall prepare... an assessment which—

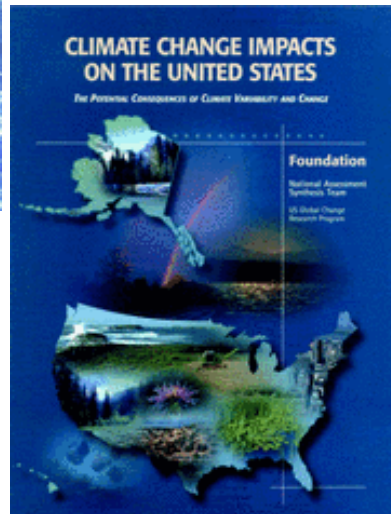
- integrates, evaluates, and interprets the findings of the Program and discusses the scientific uncertainties associated with such findings;
- analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; and
- analyzes current trends in global change, both human- induced and natural, and projects major trends for the subsequent 25 to 100 years.



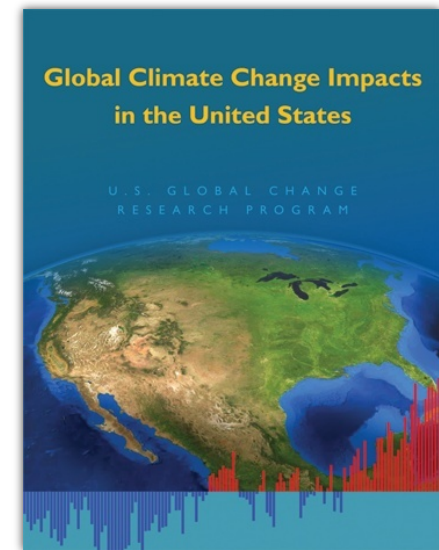


# Previous National Climate Assessments

## Climate Change Impacts on the United States (2000)



## Global Climate Change Impacts in the United States (2009)



<http://nca2009.globalchange.gov>

Target date for next NCA: 2013

# The “New” National Climate Assessment



## Goal

- Enhance the ability of the United States to anticipate, mitigate, and adapt to changes in the global environment.

## Vision

- Advance an inclusive, broad-based, and sustained process for assessing and communicating scientific knowledge of the impacts, risks, and vulnerabilities associated with a changing global climate in support of decision-making across the United States.



# NCA 2013

- Technical Input Process
  - Over 250 submissions from over 120 individuals or teams and an additional 200+ collected by NCADAC working groups.
- Working on communication and presentation
  - *content* and *traceability* to inputs and sources

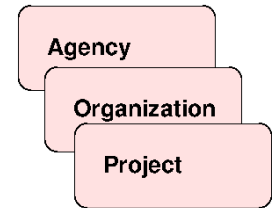
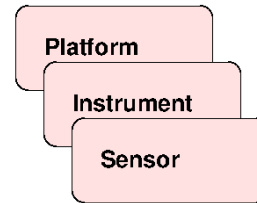
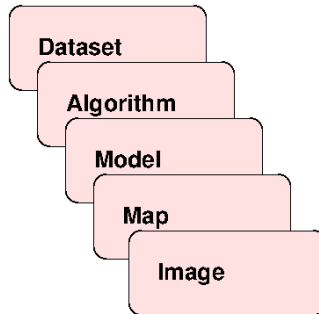
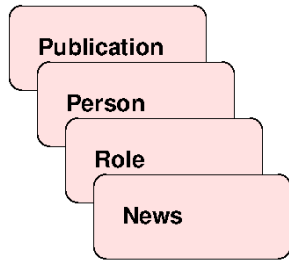


# Global Change Information System (GCIS)

- A web based source of *authoritative*, *accessible*, *usable*, and *timely* information about climate and global change for use by scientists, decision makers, and the public.



# GCIS



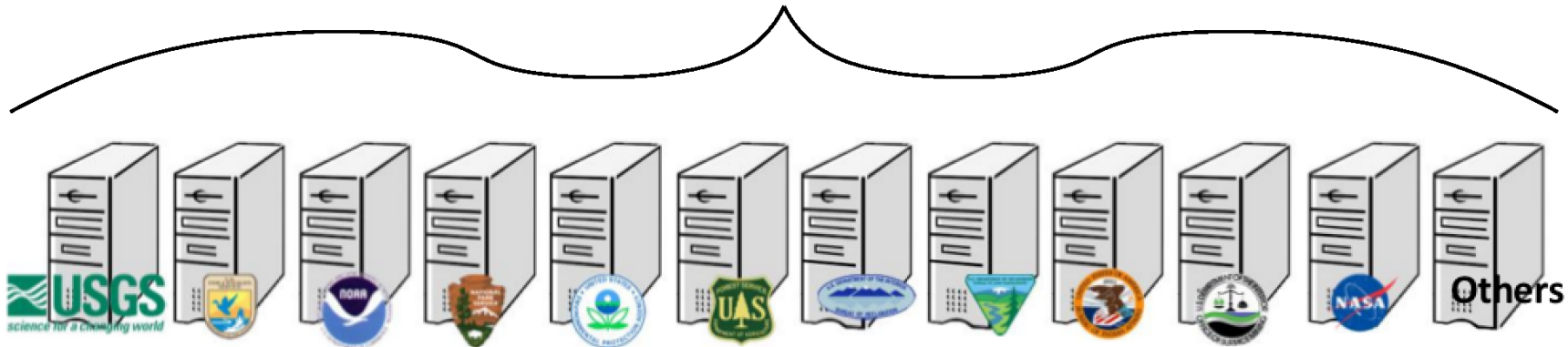
Catalog items that are mature, authoritative, persistent, with an appropriate subset of suitable metadata.

Maintain link back to the Agency 'home' for each item.

Tag each item with topic keywords and relationships.

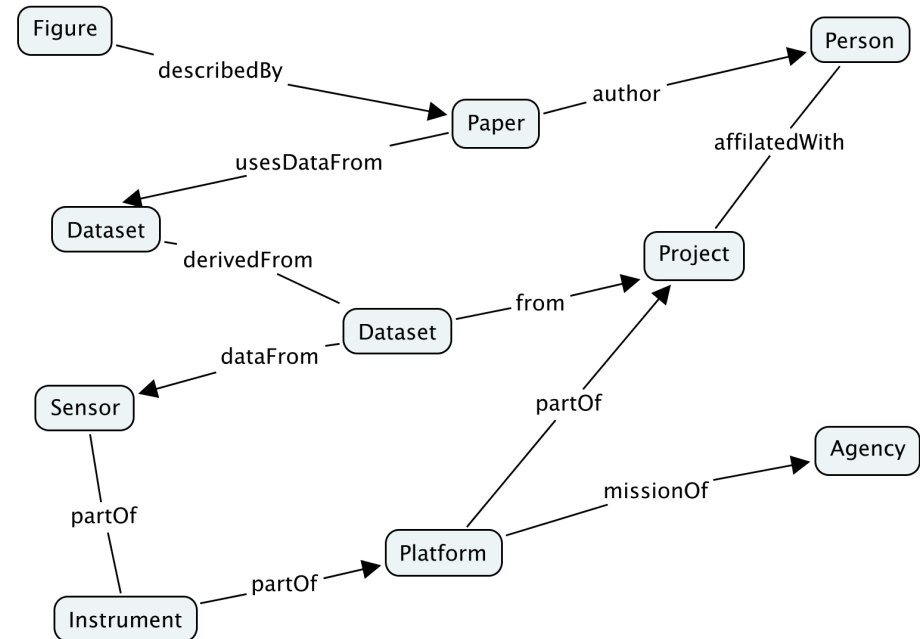
Structured Metadata  
Field: Value  
Field: Value  
Field: Value  
Field: Value

National Climate Change    Sectoral Adaptation  
Human Health    Southwest    Northeast    Society  
Islands    Northwest    Ecosystems    Coasts  
Energy Supply and Use    Water Resources  
Regional Adaptation    Global Climate Change    Alaska  
Midwest    Transportation    Southeast    Agriculture  
Great Plains



# GCIS

- Create an *entity* from the structured metadata about each thing – tag with related *concepts*.
- Identify it with a persistent, controlled *identifier*.
- Present with a human readable web page and a *machine interface*.
- Represent all *relationships* between items.



# Interagency Information Integration

GCIS can use relationships between all relevant information about global change across the agencies:

- From observations to datasets to research papers to models to analyses to organizations to people to synthesized reports to human impacts...
- Determine *agency interdependencies* -- An EPA analysis uses a NOAA model dependent on observations from a NASA satellite.
- Can present *unique interagency metrics* "How many papers referenced datasets from a specific satellite?"
- Direct users *back to agency data centers* for more detailed information and the actual content and data.



# GCIS Benefits

## NCA Web Portal

- NCA content available online, Dec. 2013
- Searchable, linkable
- Complete provenance traceability
- Links back to agency information sources
- Construct, prototype and test the initial framework
- Use constrained scope and dedicated staff to accomplish a lot in a short time
- Ensure the system design is extensible and able to grow to meet long term GCIS needs

## GCIS

- A single web site can lead back to agency global change information across the program
- A friendly, accessible entry into global change information for non-scientists
- Global, persistent, reusable identifiers for each item
- Integrated data catalog provides interagency metrics, data mining, searching, etc.
- Interagency relationships allow discovery of interdependencies and increase collaboration opportunities
- Agency information mapped into a common, consistent model with a standard vocabulary
- Concept tagging and linking improves search results for agency products





# Questions and Comments

For more information, visit <http://www.globalchange.gov>



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