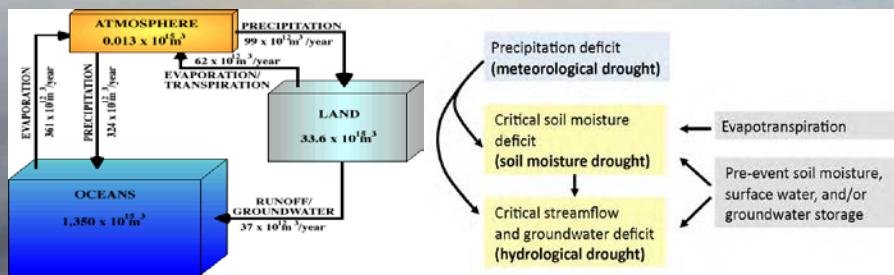


# NIDIS: the next Generation



Roger S. Pulwarty  
Senior Science Advisor for Climate Research,  
and Director, NIDIS  
NOAA Climate Program and Physical  
Sciences Division



December 20, 2006

Public Law 109-430  
109th Congress

## An Act

Dec. 20, 2006  
[H.R. 5136]

To establish a National Integrated Drought Information System within the National Oceanic and Atmospheric Administration to improve drought monitoring and forecasting capabilities.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,***SECTION 1. SHORT TITLE.**

This Act may be cited as the “National Information System Act of 2006”.

**SEC. 2. DEFINITIONS.**

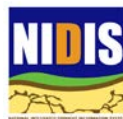
In this Act:

National  
Integrated  
Drought  
Information  
System Act of  
2006.  
15 USC 311 note.  
15 USC 313d  
note.

PUBLIC LAW 113-86—MAR. 6, 2014

128 STAT. 1015

March 6, 2014

THE NATIONAL INTEGRATED DROUGHT  
INFORMATION SYSTEM  
Report to Congress  
January 2016Public Law 113-86  
113th Congress

## An Act

To reauthorize the National Integrated Drought Information System.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,***SECTION 1. SHORT TITLE.**

This Act may be cited as the “National Integrated Drought Information System Reauthorization Act of 2014”.

**SEC. 2. NIDIS PROGRAM AMENDMENTS.**Mar. 6, 2014  
[H.R. 2431]National  
Integrated  
Drought  
Information  
System  
Reauthorization  
Act of 2014.  
15 USC 311 note.

**Three major tasks under NIDIS**  
(Public Laws 109-430, 2006; 113-086, 2014)

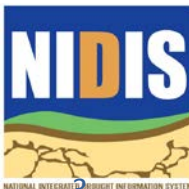
***“Enable the Nation to move from a reactive to a more proactive approach to managing drought risks and impacts”***

**(i) Provide effective drought early warning systems**

- (a) collect and integrate key indicators of drought severity and impacts; and
- (b) produce timely information that reflect local, regional, and State differences;

**(ii) Coordinate and integrate as practicable, Federal research *and monitoring* in support of drought early warning systems**

**(iii) Build upon existing forecasting and assessment programs and partnerships**



# NIDIS Partnerships/Working Groups

## (Federal, States, Tribes, Private sector)

### Monitoring & Forecasting



### Drought and Flood Impacts Assessments and Scenarios



### Drought Early Warning Information Systems

### Communication and Outreach

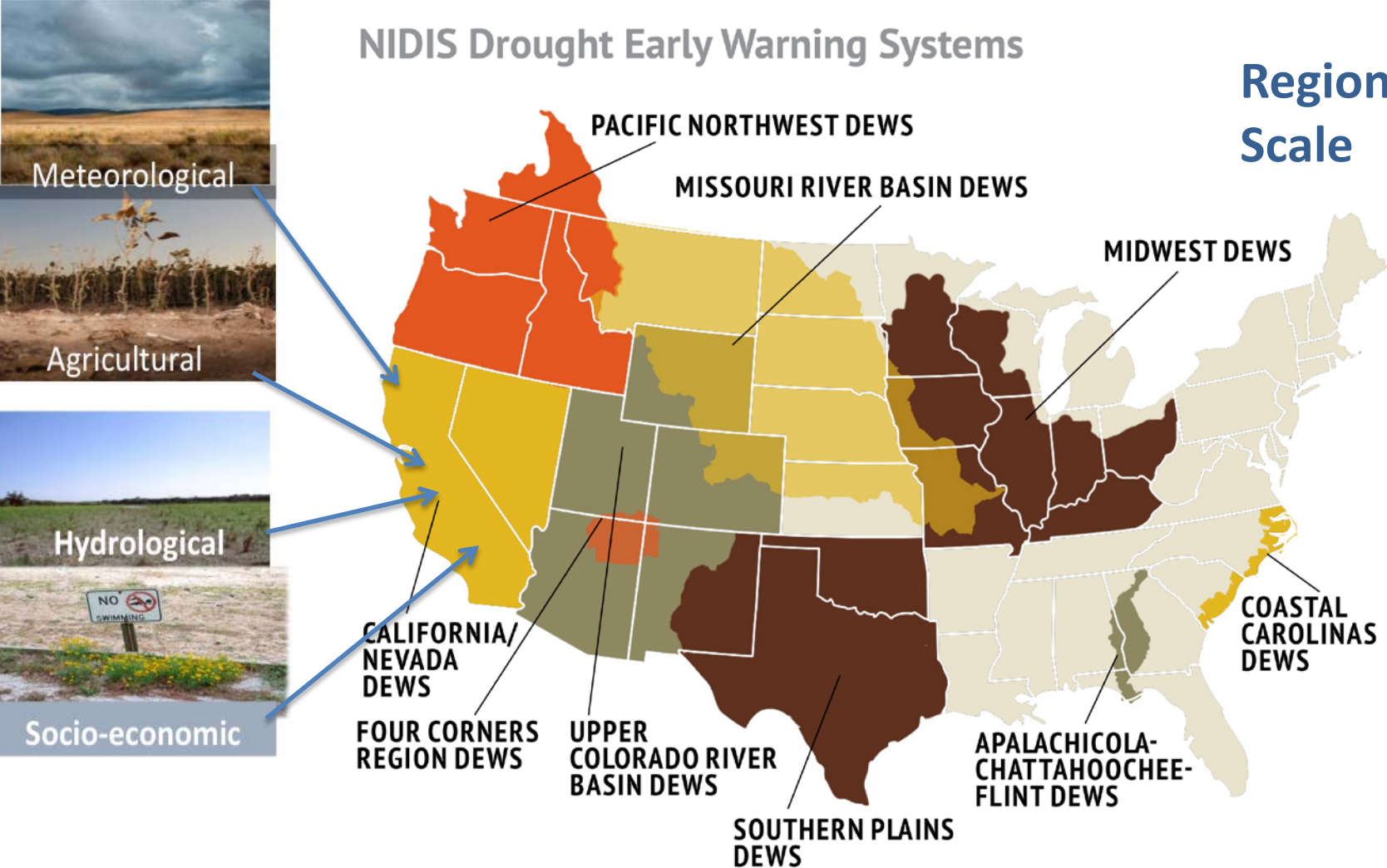


### Engaging Preparedness & Adaptation



## NIDIS Drought Early Warning Systems

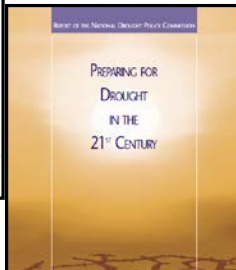
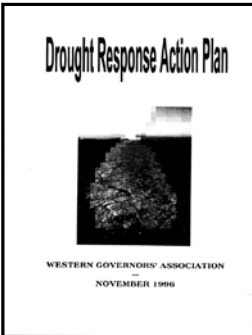
### Regional Scale



## Governance Attributes: Agility, Alignment, Adaptability

Network coordination, Integrated Information (monitoring, forecasting, risk assessment), Drought risk management (capacity, communication (e.g. outlook forums) and planning)

1996



## WGA NIDIS (2004) Integrating Observations and Data Systems

### Key Variables for Monitoring Drought

- climate data
- soil moisture
- stream flow

### Current Observations and Data Systems

Drought planning and mitigation will be based upon the gathering of high quality information related to a variety of physical

### An Interpretation of the Origins of the 2012 Central Great Plains Drought



### Assessment Report

NOAA Drought Task Force  
Narrative Team

Lead: Martin Hoerling  
Co-Leads: Siegfried Schubert & Kingtse Mo

20 March 2013

Drought and U.S. Preparedness  
in 2013 and Beyond

### ASSESSMENT REPORT Causes and Predictability of the 2011-14 California Drought



RICHARD SEAGER  
Lamont Doherty Earth Observatory of Columbia University  
MARTIN HOERLING  
NOAA Earth System Research Laboratory  
SIEGFRIED SCHUBERT  
NASA Goddard Space Flight Center  
HAILAN WANG  
BRADFELD LYON  
International Research Institute for Climate and Society  
ARUN KUMAR  
NOAA Climate Prediction Center  
JENNIFER NAKAMURA  
NAOMI HENDERSON  
Lamont Doherty Earth Observatory of Columbia University

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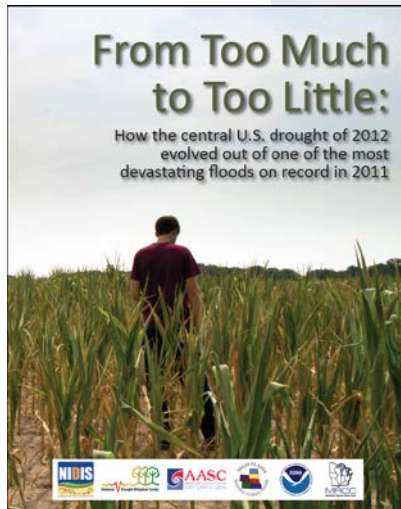
NOAA Drought Task Force 2016  
Research to Advance  
National Drought Monitoring  
and Prediction Capabilities

February 2016

2015

# From Too Much to Too Little:

How the central U.S. drought of 2012  
evolved out of one of the most  
devastating floods on record in 2011



2010-12: First time U.S. corn yield fell three  
years in a row since 1928-30 (USDA)

## **“Climate Extreme Drought To Extreme Flood: Weather Whiplash Hits The Midwest”**

**Weather Underground Climate Guest Contributor Apr 19, 2013**

NIDIS Reauthorization P.L. 113-086, 2014

***“include monitoring and research relating to the role of extreme  
weather events and climate variability in drought”***



**Memorandum of Understanding  
Between the Western Governors' Association  
and the National Oceanic and Atmospheric Administration**

**Collaboration on Drought, Flooding, and Wildfire Preparedness:  
Sharing Information and Building Resilience in Planning for Extreme Events**

*June 9, 2014  
Colorado Springs, Colorado*



**WESTERN  
GOVERNORS'  
ASSOCIATION**

**MOU Between DOC and USDA**



**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE  
U.S. Department of Commerce  
AND THE  
U.S. Department of Agriculture**

# NIDIS lead role:

Goal 1: Data Collection and Integration – key data platforms, modeling and prediction

Goal 2: Communicating Drought Risk to Critical Infrastructure

Goal 3: Drought Planning and Capacity Building

Goal 4: Coordination of Federal Drought Activity

Goal 5: Market-Based Approaches for Infrastructure and Efficiency

Goal 6: Innovative Water Use, Efficiency, and Technology

THE PRESIDENT'S CLIMATE ACTION PLAN

Executive Office of the President

June 2013

LONG-TERM DROUGHT  
RESILIENCE

FEDERAL ACTION PLAN  
OF THE  
NATIONAL DROUGHT  
RESILIENCE PARTNERSHIP

March 2016

MARCH 2016



# So where are we?



## **Coordination of a National Soil Moisture Network: Steps towards a National Network November 13-14, 2013 Kansas City, MO**

- Develop a pilot monitoring system to guide the future design of a national system
- Develop a product from existing data to demonstrate the potential usefulness of a coordinated effort.

A reference architecture to inform the national network development

## **NIDIS Working Groups implementation plan development**

**April 26-27, 2016, Lincoln, NE (July 1 draft-Sep 19 final)**

<https://www.drought.gov/drought/calendar/events/nidis-working-groups-all-chair-meeting>

## **National Soil Moisture Network Workshop**

**Progress and future directions May 24 - 26, 2016 Boulder CO**

- Crafting a future direction and approach for a coordinated NSMN. Identify the next steps, addressing who will be involved, and how and what needs to be accomplished. Identify short-term, medium-term, and long-term goals of coordinating a NSMN.

(Strobel, Lucido, Quiring, Verdin, McNutt others....)

