The National Integrated Drought Information System (NIDIS)

Moving the Nation from Reactive to Proactive Drought Risk Management

Mark Svoboda, Ph.D., Director (NIDIS Executive Council Member)
National Drought Mitigation Center
NOAA/NIDIS Drought Risk Management Research Center
University of Nebraska-Lincoln

NASA IDS: Seasonal Prediction of Hydro-Climatic Extremes for the GHA
3rd Participatory Workshop
Addis Ababa, Ethiopia, October 24-25, 2017
What is NIDIS?

NIDIS was authorized by Congress in 2006 with an interagency mandate to develop and provide a national drought early warning information system.
NIDIS Goals

- Foster leadership and networking among all sectors of the economy and services to monitor, forecast, plan for and cope with the impacts of drought

- Support drought research, including indicators, risk assessment and resilience, as well as assessment of past events

- Develop educational resources, interactive systems, and tools to promote sound decision making, drought awareness, and response
1996: Western Governors Association (WGA) advocates for change in how the U.S. prepares for and responds to drought.


2003: WGA and NOAA partner, supporting a team of scientists, policy makers, and resource managers to produce “Creating a Drought Early Warning System for the 21st Century.”

2006: NIDIS authorized by Congress with bipartisan support, signed into Public Law.

2012: 81% of the U.S. was at least abnormally dry, $30B in damages

2014: NIDIS reauthorized by Congress with bipartisan support through FY18, signed into law.
What is a Drought Early Warning System?

“A comprehensive system that collects and integrates information on the key indicators of drought in order to make usable, reliable, and timely drought forecasts and assessments of drought.....

...and communicates drought forecasts, conditions, and impacts on an ongoing basis to decision makers, the private sector, and the public.”

- NIDIS Public Law 109-430
Better drought-related decisions lead to reduced impacts and costs.

- Coordinated Drought Observation and Monitoring Networks
- Better Prediction and Forecasting Capabilities
- Interdisciplinary Federal Research with Practical Applications
- Integrated Drought Planning and Preparedness
- Effective Outreach and Consistent Communication on Drought
Components of a Drought Early Warning System

- Observations and Monitoring
- Predictions and Forecasting
- Education and Public Awareness
- Planning and Preparedness
- Interdisciplinary Research and Applications

This systematic approach creates a DEWS enabling environment
How?
Development of regional Drought Early Warning Systems (DEWS)
What is Drought Early Warning?

**International Strategy for Disaster Reduction:** “Provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response.”
The idea behind a Drought Early Warning System is that by establishing a network of key partners and stakeholders in a region, decision makers and citizens can take a systematic approach to better coordinating and integrating efforts in drought monitoring and forecasting, and in planning and preparing for drought.

This regional approach allows for responsiveness to particular geographic and hydrologic circumstances, as well as specific stakeholder needs in that region.
NIDIS Regional Drought Early Warning Systems (DEWS)
Objectives of a Regional Drought Early Warning Information System

- Provide a forum for a diverse group of federal, tribal, state, and local stakeholders that represent the water and land resource management communities, to strategize and develop appropriate, relevant, useful and readily available drought, climate, weather and water-related information.

- Develop an understanding of the existing observation and monitoring networks, data, tools, research and other planning and mitigation resources available for a DEWS.

- Identify the economic sector-specific and geographic needs for future monitoring, prediction, planning and information resources.
Research-based integrated information systems bring together:

- **Partnerships**: networks of practitioners
- **Earth System Observations** and prediction capabilities
- **Public and Private Sectors**, to map decision-making
- **Capacity and Coordination**: integrate research, observations, and assessments into early warning information on critical transitions and response capacity
- **Consistency over time**: overcome impediments by maintaining efforts, measuring successes, and making adjustments
NIDIS can help decision makers:

• **Access networks** – professionals across sectors and regions
• **Access science** – better forecasts, applied where relevant in decision-making
• **Assess the impacts of drought** to improve response and preparedness
• **Plan for or mitigate water shortages caused by drought** through risk-based drought management planning that incorporates forecasting into operating rules
• **Understand how groundwater and surface water are responding to drought**
• **Advance public awareness and clarity on drought risk**
7.8% of the US and 8% of the lower 48 states.

As of June 21-27, 2017, drought (D1-D4) is impacting 16.1 million people in the US and 16% in the lower 48 states.

New tools help visualize the future of drought. If we don’t get any rain for the rest of the month, what are the chances the drought will get better? The Drought Termination and Amelioration tools can help us...

Regional outlooks summarize drought conditions, impacts, and what’s ahead. Read the latest regional reports on climate and drought impacts, with an overview of forecast conditions for the next 12 months.

Forecast rodeo is full swing. Eight teams are vying for up to $30,000 in prizes by demonstrating their sub-seasonal forecasting skills in this real-time competition.

How is drought affecting your neighborhood? Enter your zip code for current conditions.

Contact: Mark Svoboda, Director, NDMC
msvoboda2@unl.edu