National Integrated Drought Information System

Forecast-informed Reservoir Operations (FIRO) and Water Resources Management in the States of Oklahoma and Texas

VEVA DEHEZA  |  SEPTEMBER 2019
OVERVIEW

• What is NIDIS?

• Updates on Activities at the National Level

• Update on the Southern Plains Drought Early Warning System

NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)
MISSION + ACTIVITIES

NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)

Regional Drought Early Warning Systems
Prediction and Forecasting
Integrated Research and Monitoring
Drought Planning and Preparedness
Collaboration with Existing Programs and Partners
The U.S. Drought Portal (www.drought.gov)
Reauthorization

On January 7, 2019, the President signed S.2200 into law, the National Integrated Drought Information System (NIDIS) Reauthorization Act (Pub. L. 115-423):

- Authorizes funding for NIDIS to increase from $13.5 million in fiscal year 2019 to $14.5 million in fiscal year 2023
- Authorizes NIDIS to engage in partnerships with the private sector, academic institutions, and citizen scientists
- NIDIS will provide timely data, information, and products that reflect watershed differences in drought conditions
- Calls for NIDIS to support improvements in seasonal, subseasonal, and low flow water prediction
- Directs NOAA to develop a strategy for a national soil moisture monitoring network.
Drought Early Warning

“A 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
Drought Early Warning

REGIONS

PACIFIC NORTHWEST DEWS
MISSOURI RIVER BASIN DEWS
MIDWEST DEWS
NORTHEAST DEWS
COASTAL CAROLINAS DEWS

CALIFORNIA-NEVADA DEWS
INTERMOUNTAIN WEST DEWS
SOUTHERN PLAINS DEWS
APALACHECOLA-CHATTAHOOCHEE-FLINT DEWS
NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)

NIDIS in Action Across Regions

- Drought & Public Health
- Drought and Wildfire
- Drought Impact Reporting and Analysis
- Drought Indicators and Triggers
- National Soil Moisture Network
To assess the status of national drought readiness, to take stock of progress since the 2012 National Drought Forum, and to help provide new information and guidance for coordination to improve the nation's preparedness to drought.
Drought & Public Health Linkages

2018-2020 Activities:

- Form a National Drought & Public Health Working Group
- Host a series of Regional Drought & Public Health Workshops
- Hold a 2019 Public Health Summit *(completed)*
- Support research & communication of linkages
- Create a public health sector space on the U.S. drought portal

- 2020 NIDIS Drought & Public Health Strategy

NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)
To improve the utilization of drought information in wildland fire management for ecological health, public health, and firefighter safety.
Drought Impact Assessments: The Southwest

An analysis of the scope and severity of the 2017-2018 drought to understand whether conditions influenced economic, health, and crime outcomes in individual states and in the regional as a whole.

Drought Classification

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
Drought Impact Assessments: The Mississippi River

- Understand the sensitivity of the Mississippi River corridor to drought.
- Assess impacts and opportunities for reducing risks to small communities.

Focus Areas
- Agricultural production
- Commercial navigation & transportation
- Manufacturing
- Recreation and tourism
Drought Impact Assessments: The Northern Plains Drought of 2017

U.S. agricultural losses of over $2.6 billion.

Livestock production was especially hard-hit due to the widespread scarcity of feed and water.

4,837,599 acres burned across the U.S. Northern Plains and Canadian Prairies.

Despite near-normal stream flows for the entire 2017 season, water supply to rural water providers was reduced in some areas.

Tribal cultural resources were impacted, putting these resources at risk for future generations.
National Soil Moisture Monitoring Network

- National, multi-platform soil moisture gridded products from existing soil moisture data sources across federal and state in-situ monitoring networks, satellite remote sensing missions, and numerical modeling capabilities
- **Consistent methodology** for data collection and installation of in-situ probes including metadata standards
- Improve **collaboration and identify funding** opportunities to build the national network
Coping with Drought FY20 Grant Program

Research to improve our understanding and use of drought indicators, thresholds, and triggers, and drought impacts.

- $1.2 million per year
- 2-year cooperative agreements of up to $650,000 total
Southern Plains DEWS Strategic Plan 2017-2018, with extension through 2019

Southern Plains Ten-Year Drought Resilience Vision: NIDIS is providing support to SCIPP and partners to develop a ten-year drought resilience vision that informs regional strategic long-term drought planning
Southern Plains Drought Early Warning System (DEWS)

2017-2018 NIDIS and Partners Southern Plains Drought Response

U.S. Drought Monitor

January 2, 2018
(Released Thursday, Jan. 4, 2018)
Valid 7 a.m. EST

Drought Impact Types:
D - Drought
S - Short-Term, typically less than 6 months (e.g., agriculture, grasslands)
L - Long-Term, typically greater than 6 months (e.g., hydrology, ecology)
Intensity:
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought

Author:
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U.S. Department of Agriculture

http://droughtmonitor.unl.edu/
2017-2018 Southern Plains Drought Response:

- Monthly webinars and *Southern Plains Drought Updates* to communicate information on drought status, impacts and outlooks (www.drought.gov)
- Wide media coverage, including the New York Times, LA Times, Chicago Tribune, Associated Press and local media outlets in the region
- Meetings with producers and ranchers
Examples of Southern Plains DEWS Activities:

- Water Reservoir Data Visualization Tool (SRCC and SCIPP): Provides information on water storage in reservoirs.
- Mapping farm pond locations and volumes, led by SCIPP in support of the Oklahoma Water Resources Board.

http://reservoir.srcc.lsu.edu
Examples of Southern Plains DEWS Activities:

• US Drought Monitor workshops in Texas and Oklahoma with USDA Southern Plains Climate Hub, NDMC and NIDIS to strengthen capacity of extension agents and other producer support regarding drought forecasting and impact tools and resources.

• 2018 Southern Plains Wildfire Forum, with USDA Southern Plains Climate Hub, SCIPP, Redlands Community College
NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)

Southern Plains Drought Early Warning System (DEWS)

Local Drought Management:
A summary of how counties and parishes use drought information in the South Central United States, led by SCIPP, The University of Oklahoma, Louisiana State University.
Drought.gov Redesign

Anticipated Launch: Fall 2019

- Improved site navigation
- Enhanced mobile experience
- New sector pages
- New up-to-date drought statistics
- Updated content
- U.S. Web Design Standards
National Integrated Drought Information System

Drought.gov

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