

# **Drought Resources and Tools for Producers and Tribal Nations in the North Central U.S.**

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**Crystal J. Stiles and Molly Woloszyn**

**Climate Intersections Conference  
July 14, 2022**





# What Is NIDIS?

- First authorized by Congress in 2006; reauthorized in 2014 and 2018.
- Interagency mandate to develop and provide a **national drought early warning information system**
- Enable the Nation to move **from a reactive to a more proactive** approach to managing drought risks and impacts
- Authorizes NIDIS to **engage in partnerships** with federal, state, tribal, and local partners, as well as the private sector, academic institutions, and citizen scientists
- 2018 Reauthorization: directs NOAA to develop a strategy for a **national coordinated soil moisture monitoring network**

# NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)

## Mission + Activities

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**8 Regional Drought  
Early Warning  
Systems**



**Drought Prediction  
and Forecasting**



**Integrated Research  
and Monitoring**



**Drought Planning  
and Preparedness**



**Collaboration with  
Existing Programs and  
Partners**

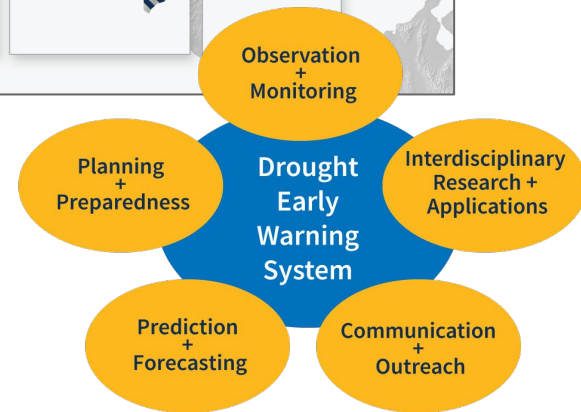
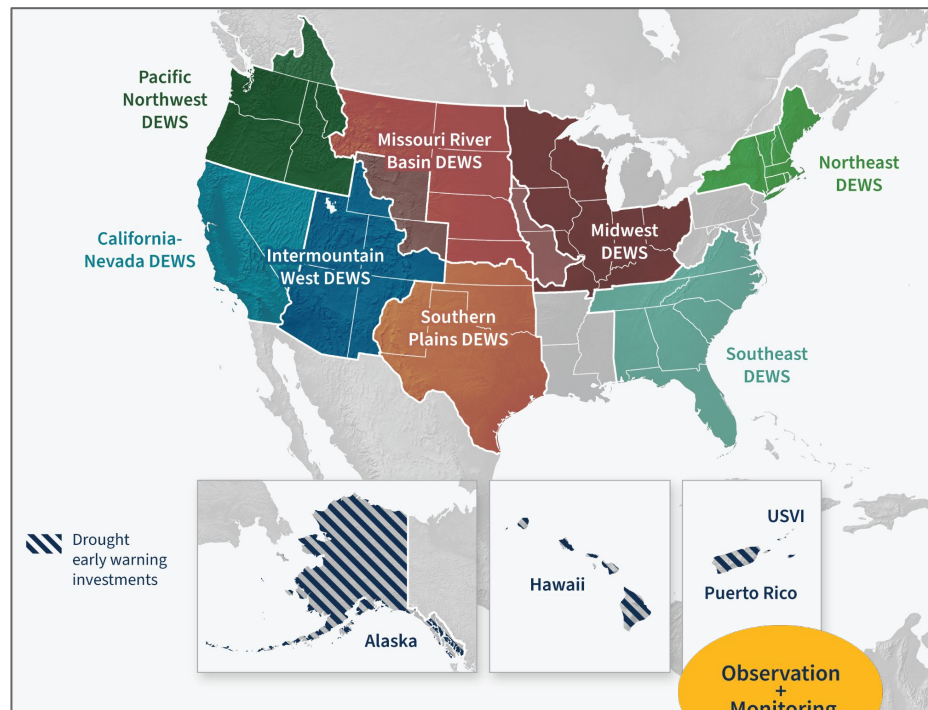


**The U.S. Drought Portal  
([www.drought.gov](http://www.drought.gov))**

## Place-Based Approach

# Regional Networks

A **Drought Early Warning System (DEWS)** utilizes new and existing networks of federal, tribal, state, local and academic partners to make climate and drought science accessible and useful for decision makers.





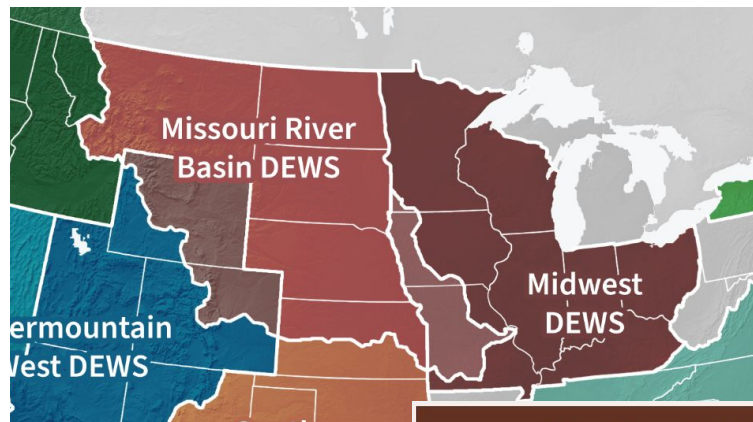
# Regional Networks



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DEWS Coordinator

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## Regional Listserv

- Drought Status Updates
- Drought resources
- Regional events/webinars

### Midwest Drought Early Warning Update

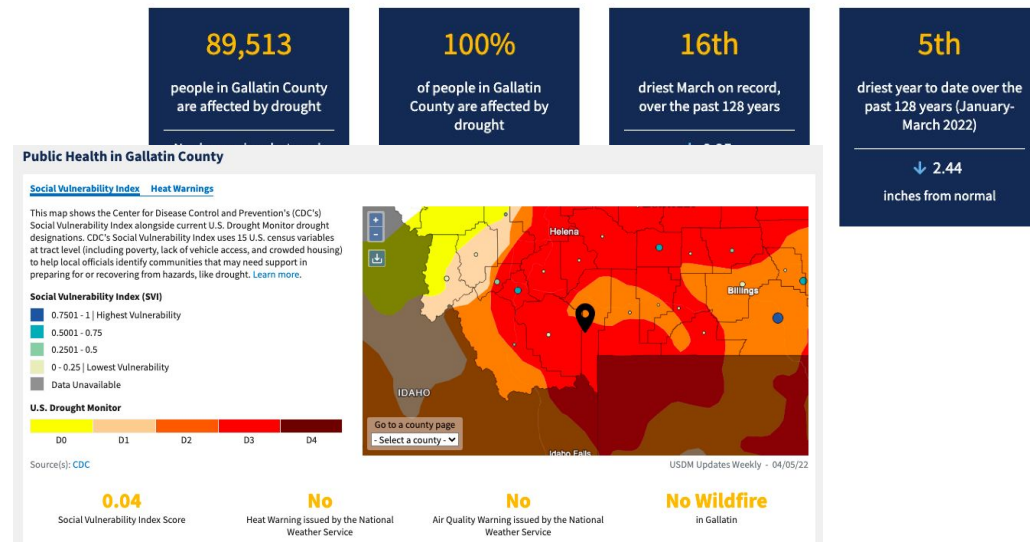


June 16, 2022

### Potential for Rapid Intensification of Drought in the Midwest

#### Key Points

- A **record-breaking heat wave** has been making its way across the central U.S. this week, with temperatures peaking in the Midwest on Tuesday and Wednesday with widespread temperatures from 90-100°F.
- **Above-normal temperatures are expected to continue** through at least the end of June according to NOAA's Climate Prediction Center. **Below-normal precipitation is also expected** across much of the Midwest during this same time period.
- While the Midwest region is currently almost entirely drought free, **there are some areas of concern that are abnormally dry** (Illinois, Indiana, Kentucky, and Missouri). In addition, portions of **western Iowa remain in moderate to severe drought (D1-D2)**.



## NIDIS RESOURCES

# Drought.gov Redesign

- **Up-to-date drought conditions** from the city and county level to across the globe
- **Interactive maps and data** that show drought in new ways
- New **“By Sector” section**, showing drought impacts on different economic sectors
- **Research and Learn** section where you can “go back to the basics” on drought

#### BY SECTOR

### Agriculture

Drought can reduce both water availability and water quality necessary for productive farms, ranches, and grazing lands, resulting in significant negative direct and indirect economic impacts to the agricultural sector. Drought can also contribute to insect outbreaks, increases in wildfire and altered rates of carbon, nutrient, and water cycling—all of which can impact agricultural production, critical ecosystem functions and the livelihoods and health of farming.

**Drought in your area?**  
Report Impacts

#### On This Page

[U.S. Crops and Livestock in Drought](#)  
[Key Issues](#)  
[Drought Impacts on Agriculture](#)  
[Drought Early Warning for the Agriculture Sector](#)  
[Related Content](#)

### U.S. Crops and Livestock in Drought

[View Interactive Map](#)

[Corn](#) [Soybeans](#) [Hay](#) [Cattle](#) [Wheat](#)

The U.S. Department of Agriculture's (USDA's) National Agricultural Statistics Service (NASS) conducts hundreds of surveys each year and a Census of Agriculture every 5 years. NASS prepares reports covering virtually every aspect of U.S. agriculture, including agricultural commodities statistics for crops and livestock.

This map displays USDA corn crop production (data from 2017) alongside current U.S. Drought Monitor (USDM) drought designations. [Learn more.](#)

#### Corn Produced by County

Scales by Acreage

#### U.S. Drought Monitor



Source(s): USDA NASS, U.S. Drought Monitor

USDM Updates Weekly - 07/05/22

**2,279**  
counties with crops  
experiencing drought (D1–D4)

**211.5 Million**  
acres of crops experiencing  
drought (D1–D4)

**24.2 Million**  
beef cattle experiencing  
drought (D1–D4)

**646**  
counties with drought  
declarations

#### DATA & MAPS

### Select categories to browse data

Agriculture

Current Conditions

Ecological

Fire

Impacts

Outlooks/Forecasts

Paleoclimate

Precipitation

Public Health

Snow Drought

Software

Soil Moisture

Temperature

Tools

Vegetation

Water Supply

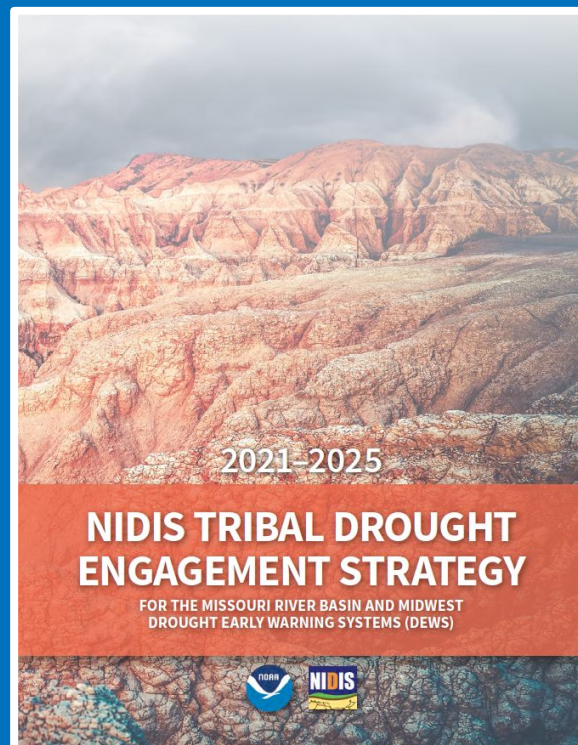
**DROUGHT.GOV**

# Agriculture Resources

- “By Sector” page specific to agriculture
- View crops/livestock affected by drought
- Filter tools and resources by agriculture

# NIDIS Tribal Drought Engagement Strategy

- Key tribal engagement activities to implement in 2021 and beyond.
- Integrating tribal perspectives into NIDIS' work is important to ensure tribal nations are equal partners in responding to drought.
- Presents *Guiding Principles of Engagement*:
  - Respecting tribal sovereignty
  - Ensuring trust and reciprocity
  - Ensuring DEWS are culturally appropriate and useful for tribal nations

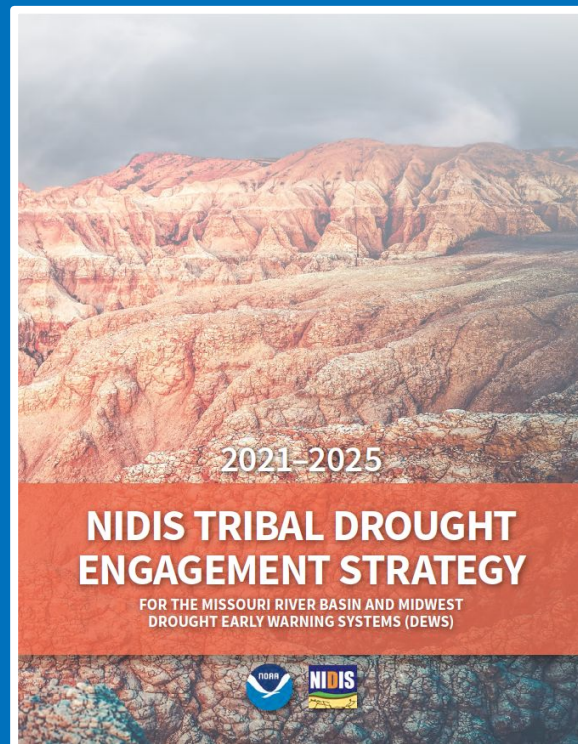




# NIDIS Tribal Drought Engagement Strategy

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- NIDIS support for tribal nations has been **ongoing since nearly the beginning of its existence**.
- Embarked in 2019 on a tribal engagement project with the University of Colorado in the Missouri River Basin and Midwest DEWS to **assess tribal needs for drought information**.
- Strategy developed after a **year of consultations with tribal resource managers** across the two regions.



# Key Outcomes & Activities of the Strategy

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### Interdisciplinary Research and Applications

Integrating the results of drought research into tribal decision-making is needed.

### Prediction and Forecasting

Staffing constraints and competing priorities often mean that tribal nations face challenges in applying predictions and forecasts for drought in a timely manner.

### Observations and Monitoring

One of the major gaps identified during consultations with tribal resource managers is the lack of reservation-specific drought observation data.

### Planning and Preparedness

Despite more drought planning, many tribal resource managers have expressed frustration that this has not always translated into action on the ground.

### Communications and Outreach

NIDIS intends to build on and strengthen partnerships with tribal nations, particularly to ensure that they are integral partners in the implementation of NIDIS.



A young Sioux participates in the 49th annual United Tribes Pow Wow in Bismarck, ND. September 2018.  
Credit: Pierre Jean Durieu

# Key Outcomes & Activities of the Strategy

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One of the activities in the strategy was to hire a tribal engagement coordinator to help implement the activities in the strategy.



Crystal Stiles, Tribal Engagement  
Coordinator, NOAA-NIDIS



# Key Outcomes & Activities of the Strategy

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## NIDIS Coping with Drought: Building Tribal Drought Resilience Grant Program FY2022

Applications required to be developed by or in full partnership with tribal nations to fund the **implementations of actions - together with research on those actions - to build drought resilience contained in existing plans and strategies.**

**Plans may include, but are not limited to** drought contingency plans; drought, water, or natural resource plans; agricultural resource management plans; or climate adaptation plans.

**Projects will be awarded in Summer 2022.**



# U.S. Drought Portal Content for Tribal Partners

[drought.gov/tribal](https://drought.gov/tribal)

### Information available:

- Drought monitoring on tribal lands
- Drought impacts
- Drought planning
- Case studies/projects
- Resources

#### Drought Conditions for Tribal Nations






[Current](#) [Last Week](#) [Last Month](#)

The U.S. Drought Monitor (USDM) is updated each Thursday to show the location and intensity of drought across the country. This map shows current U.S. Drought Monitor drought designations alongside tribal nation boundaries, according to U.S. Census Bureau legal boundary data as of January 1, 2019.

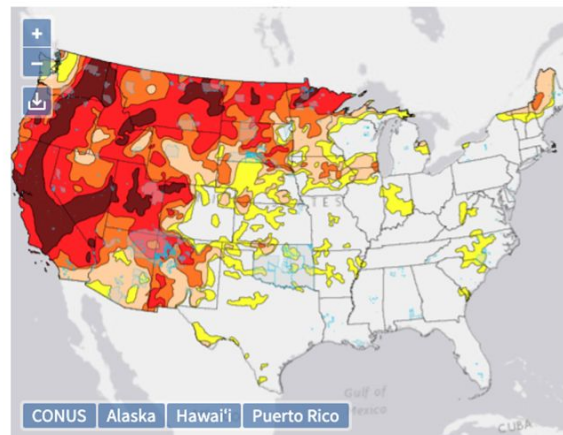
##### Tribal Nations

 Tribal Nation Boundaries

##### U.S. Drought Monitor Categories

-  D0 - Abnormally Dry
-  D1 - Moderate Drought
-  D2 - Severe Drought
-  D3 - Extreme Drought
-  D4 - Exceptional Drought

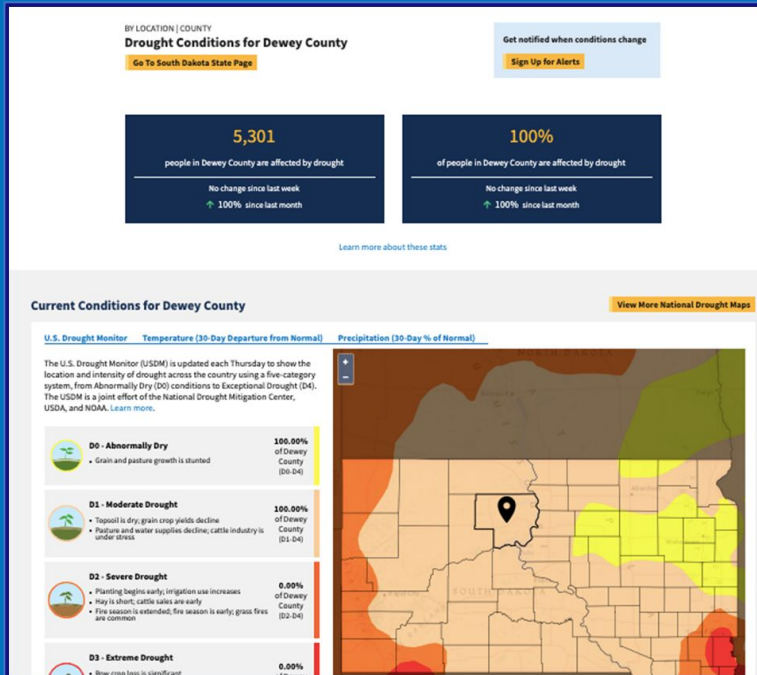
Source(s): [U.S. Census Bureau](#), [U.S. Drought Monitor](#)



Updates Weekly - 09/07/21

# NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)

## Future Work



Develop pages where you can drill down to tribal reservations for drought information.

Conduct regional listening sessions with tribal partners on future website development.

Hold drought action plan discussions with tribal partners.



# Thank You

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For more information, email  
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[www.drought.gov](http://www.drought.gov)



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National Integrated Drought  
Information System

