

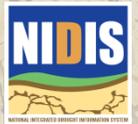
The National Drought Mitigation Center: Translating Research into Usable Information

Mark Svoboda, Climatologist
Monitoring Program Area Leader
And
Michael Hayes, Director

National Drought Mitigation Center
School of Natural Resources
University of Nebraska-Lincoln



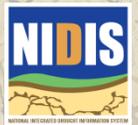
NOAA-CSI/MAPP Webinar Series, November 22, 2013



National Drought Mitigation Center



Mission: To lessen societal vulnerability to drought by promoting planning and the adoption of appropriate risk management techniques.



About the NDMC



[Dr. Michael Hayes](#)
NDMC Director
Contact:
402.472.4271
Email
Vitae

➤ **Established in 1995**

NDMC Program Area Leaders



[Dr. Cody L. Knutson](#)
Planning and Social Science Program Area Leader
Contact:
402.472.6718
Email
Vitae



[Mark Svoboda](#)
Climate Based Monitoring Program Area Leader
Contact:
402.472.8238
Email
Vitae

➤ **Founder: Dr. Wilhite**

NDMC Staff



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Climatologist
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Communications and Drought Resources Specialist
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[Dr. Tsegaye Tadesse](#)
Climatologist
Contact:
402.472.3383
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Vitae



[Nicole Wall](#)
Outreach and Research Specialist (Public Participation focus)
Contact:
402.472.6776
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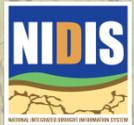


[Deborah Wood](#)
Publication Specialist
Contact:
402.472.6705

➤ **Current Director: Dr. Mike Hayes**

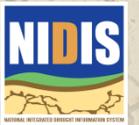
➤ **Staff: 16 people, tremendous diversity**

➤ **Located at the University of Nebraska-Lincoln**

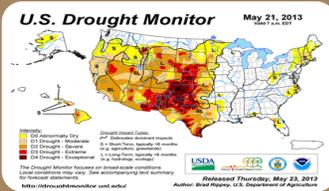


National Drought Mitigation Center

- ▶ ***Bridge and translate science*** to policy/decision makers and the public
- ▶ Developing ***usable*** information and services
- ▶ Users drive and guide our research and activities from the ***beginning...***



NDMC Program Objectives



Improve the science of drought monitoring, planning, and mitigation

Impacts | New Mexico
04-22-2013 - 05-22-2013

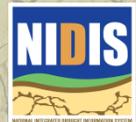
Total Impacts	27
Statewide impacts	8
Category	
● Agriculture	12
● Business & Industry	1
● Fire	10
● Plants & Wildlife	8
● Relief, Response & Restrictions	13
● Society & Public Health	3
● Water Supply & Quality	9

Build awareness of drought & its impacts on society and the environment, and how human actions affect our vulnerability to drought



Focus the attention of policy makers on the importance of drought policy and planning in the wise stewardship of natural resources

Conduct and maintain operational tools, research, and outreach and training



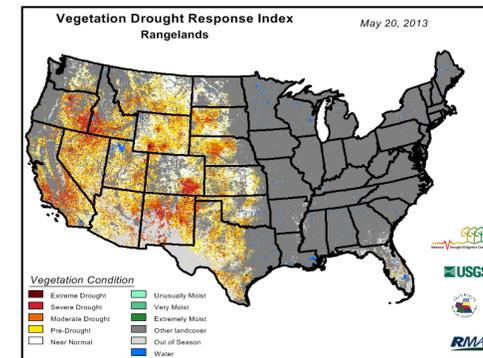
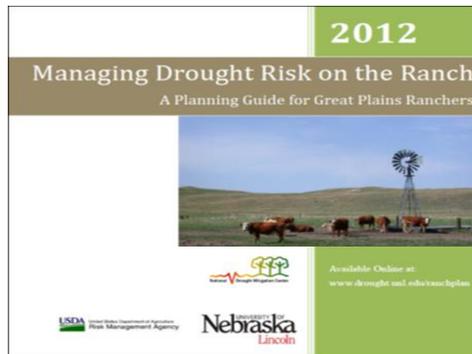
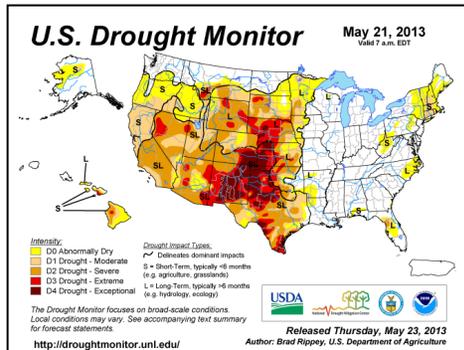
Program Areas

National Drought Mitigation Center

Monitoring

Planning and Social Science

GIS Science



Research

Applications

Operations

Education

Education, Feedback and Outreach



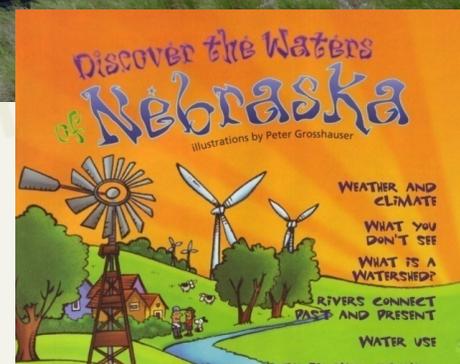
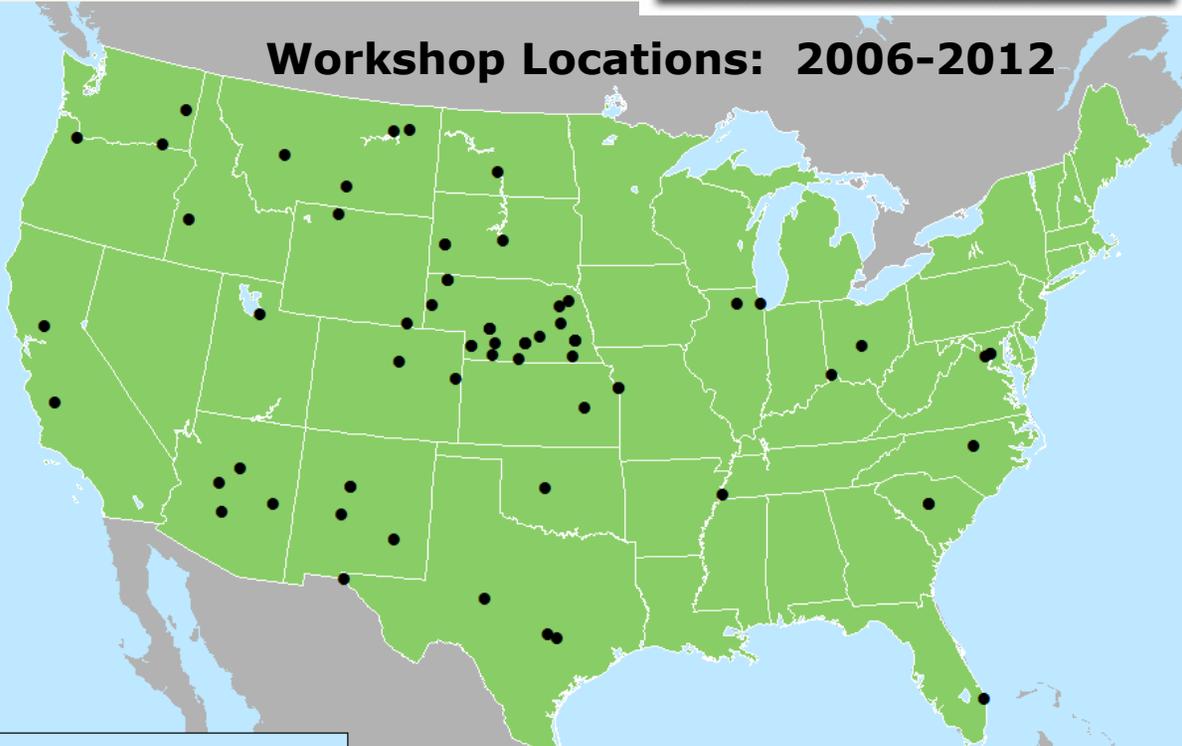
10 am Central Time
January - May, 2013
Last Wednesday of each month

January 30: Managing Drought Risk on the Ranch: The Planning Process
 Jerry Volesky, Range and Forage Specialist at the West Central Research and Extension Center, and Lynn Myers, Tippetts-Myers Ranch

February 27: Avoiding Analysis Paralysis: Monitoring and Setting Critical Dates for Decision Making During Drought
 Dwayne Rice, Rangeland Management

Each session will include a briefing on current drought status, followed by a session on a specific topic or tool related to drought planning.

Workshop Locations: 2006-2012



EDEN
 EXTENSION DISASTER EDUCATION NETWORK
 Reducing the Impact of Disasters Through Education

Search:

State Information:

Home Topics Resources EDEN Courses News and Features Conferences and Workshops About EDEN

Hazards & Threats
 EDEN > Topics > Hazards & Threats > Drought > extension

Drought

Key & Emerging Issues
 Individuals & Families
 Crop and Livestock
 Community

Quick Find Key Current and Future Issue Resources
 National VOAD Drought and Wildfire Taskforce

eXtension
 The Drought articles and FAQs on eXtension can be reached through the
 • eXtension Drought pages

Articles are grouped under the following headings:
 Livestock and Pasture
 Crops
 Home and Landscape

eXtension
 more mind reach

Agribusiness
 Families & Communities
 Hazards & Threats
 Human Health

Activities

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Hazards & Threats

EDEN > Topics > Hazards & Threats > Drought > eXtension

Drought

Key & Emerging Issues

- Individuals & Families
- Crop and Livestock
- Community

Quick Find Key Current and Future Issue Resources

- National VOAD Drought and Wildfire Taskforce
- Archived Webinars
- Resource Collection
- eXtension**

Point of Contact
Pat Skinner

Contact info

eXtension

The Drought articles and FAQs on eXtension can be reached through the

- [eXtension Drought pages](#)

Articles are grouped under the following headings:

- Livestock and Pasture
- Crops
- Home and Landscape

Links to the latest [eXtension.org](#) articles and FAQs related to drought are provided below.

Last Updated: 7/17/2012 9:03 PM

More Info on Drought from eXtension

- [Drought Resources Content](#)
Last Updated: 1/18/2013 1:17 PM
- [Hundreds of U.S. counties labeled disaster areas due to drought](#)
Last Updated: 1/10/2013 11:43 AM
- [Drought Monitor officials: Historic 'Flash Drought' of 2012 to Continue into 2013](#)
Last Updated: 1/3/2013 9:41 AM

Agricultural Disasters

Families & Communities

Hazards & Threats

Human Health

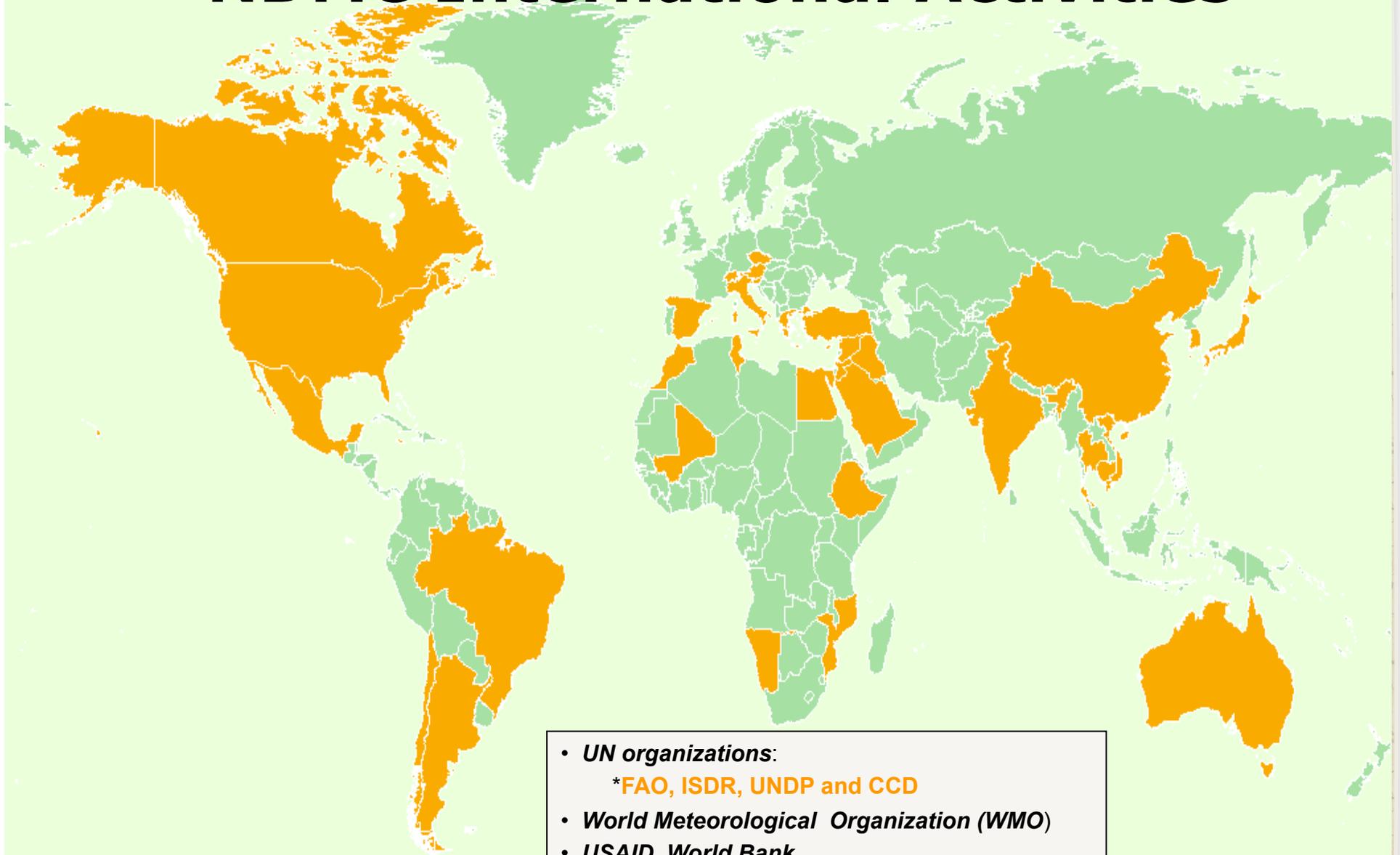
Disaster Watch

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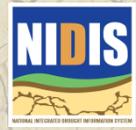
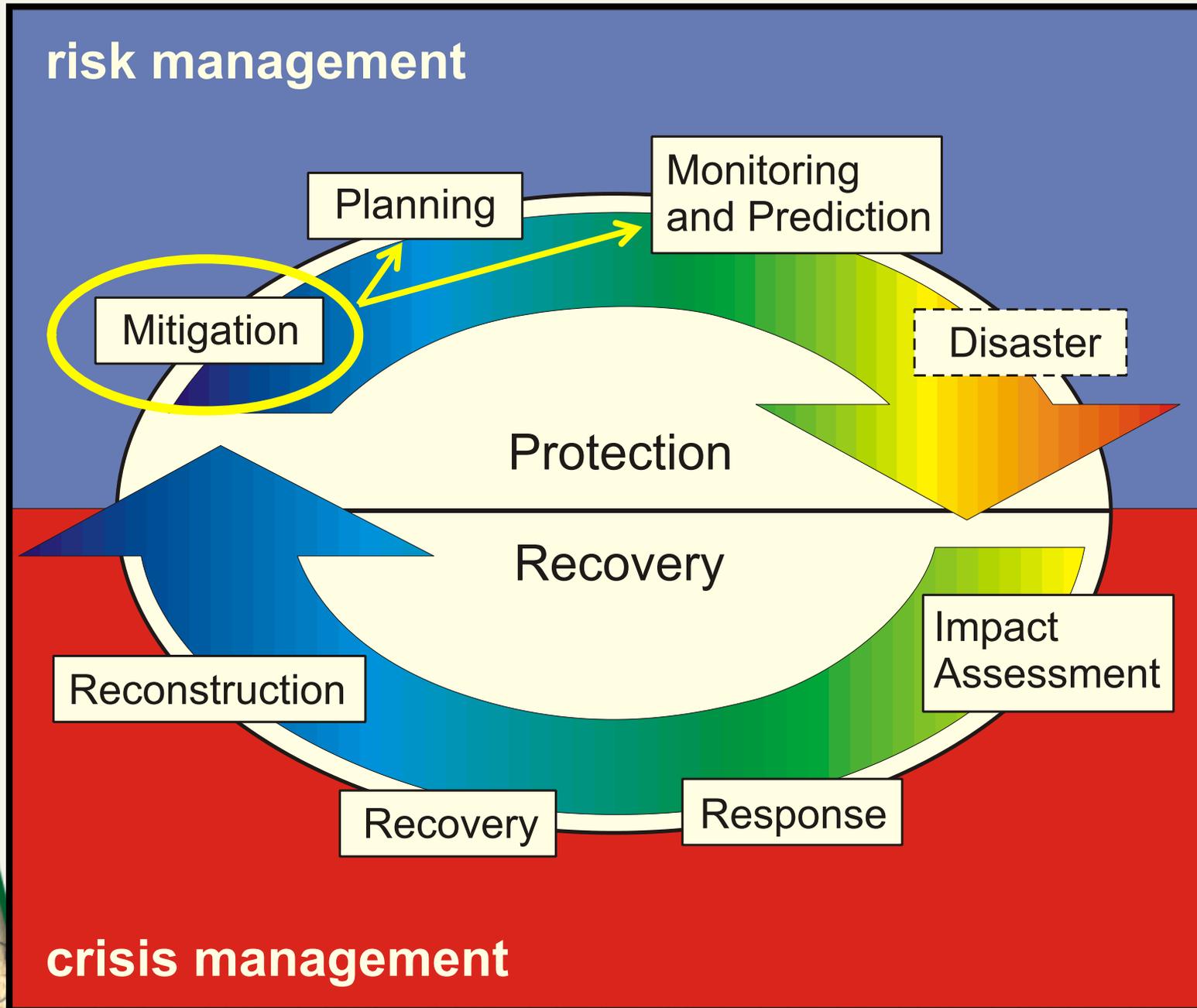
Drought Mitigation Center

NDMC International Activities



- **UN organizations:**
 - ***FAO, ISDR, UNDP and CCD**
- **World Meteorological Organization (WMO)**
- **USAID, World Bank**
- **Various regional and national drought centers**
- **Numerous government agencies and universities in different countries**

The Cycle of Disaster Management



Getting past the hydro-illogical cycle

Hydroillogical Cycle
(Passive)



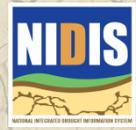
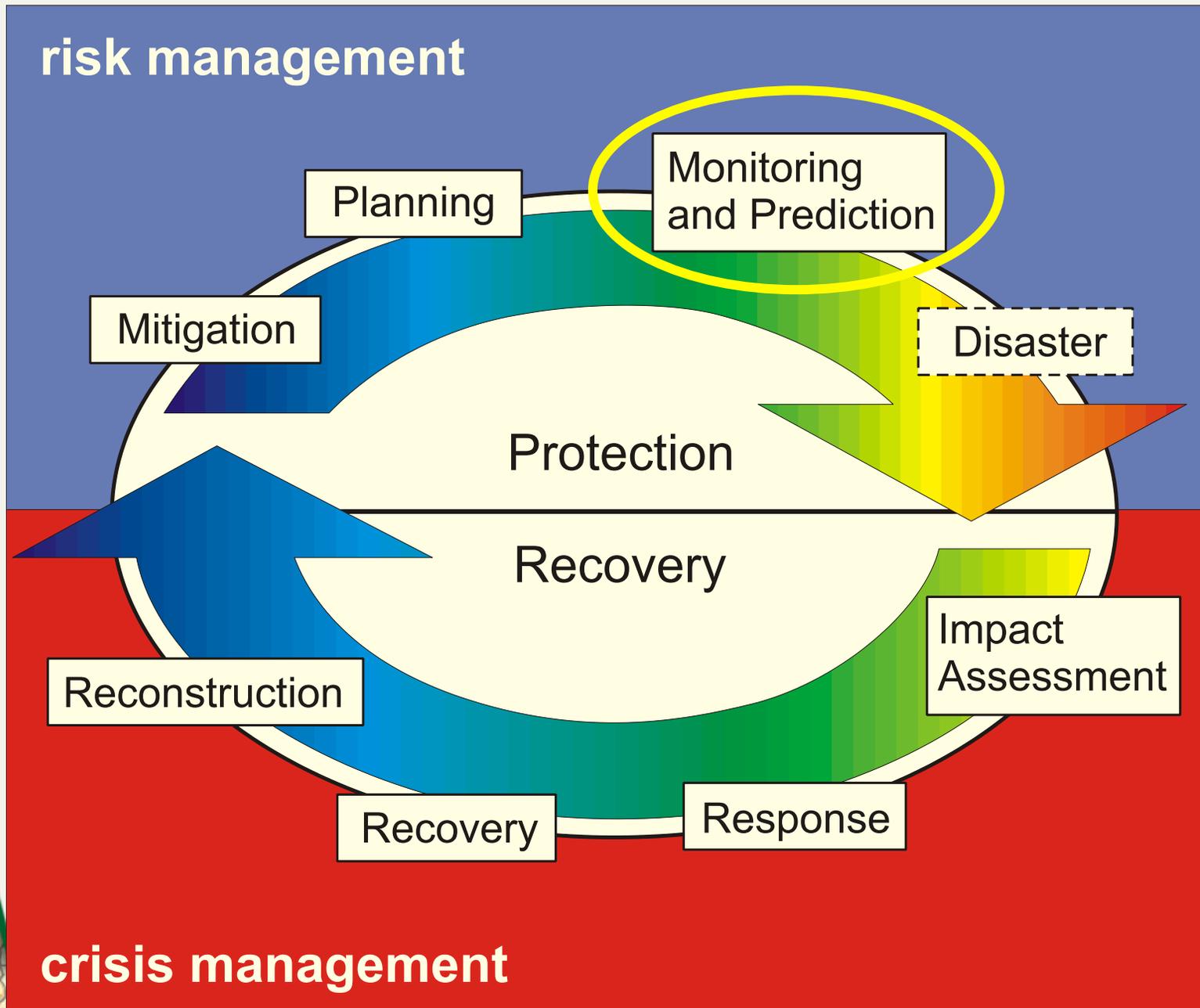
State of mind: Anxiety tied to climate

Drought-Ready Cycle
(Active, Engaged)



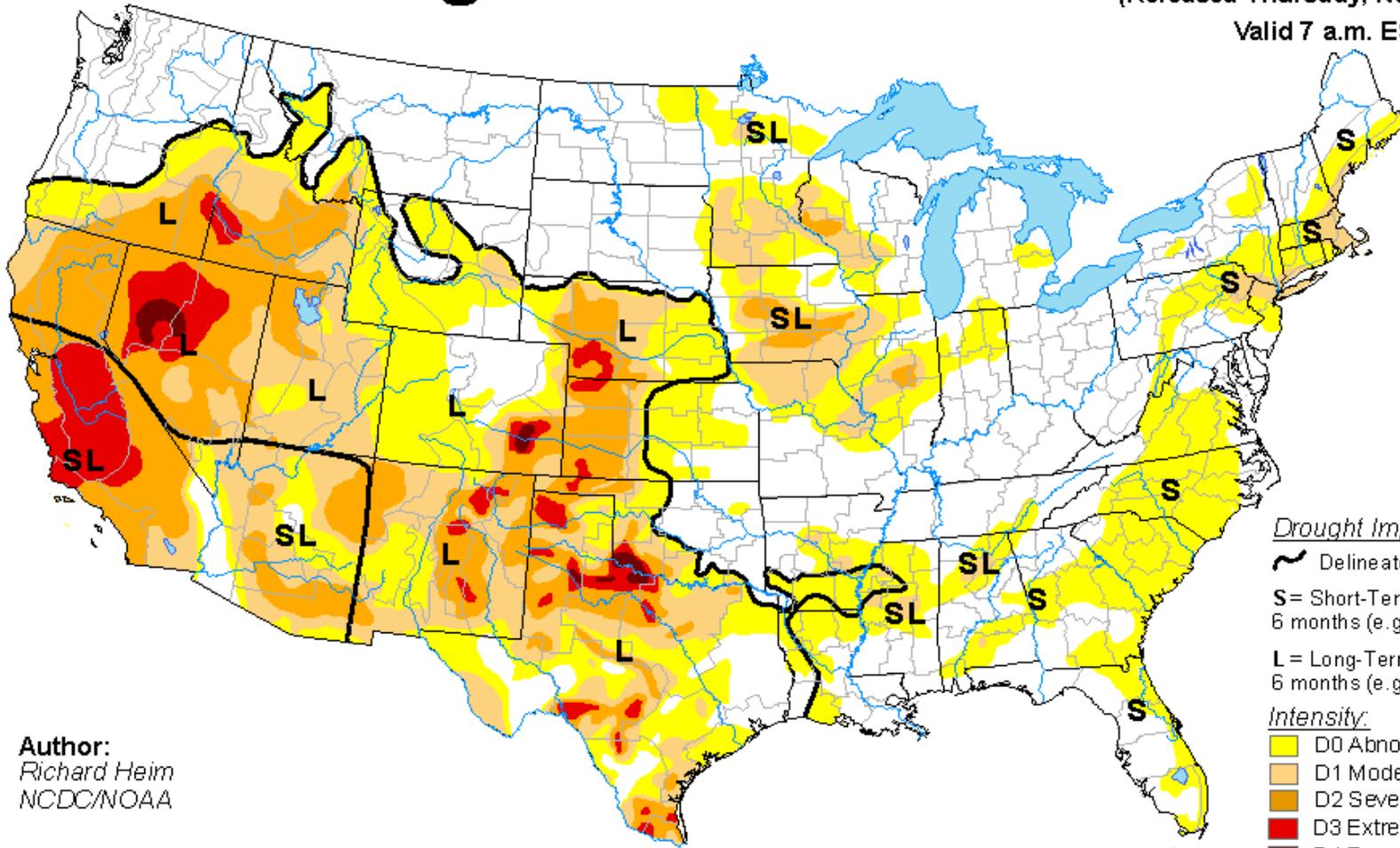
State of mind: Secure, alert, prepared

The Cycle of Disaster Management



U.S. Drought Monitor

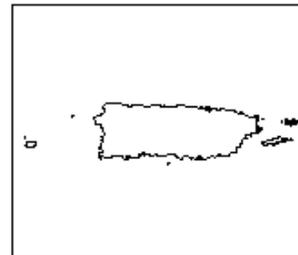
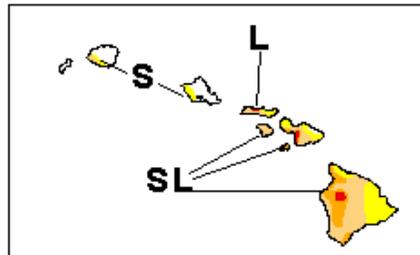
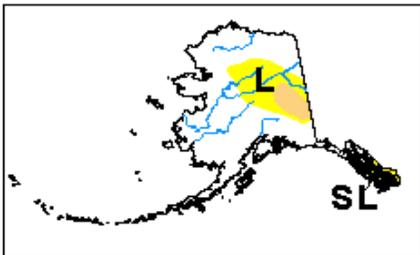
November 19, 2013
 (Released Thursday, Nov. 21, 2013)
 Valid 7 a.m. EST



Author:
 Richard Heim
 NCDC/NOAA

- Drought Impact Types:
- ~ Delineates dominant impacts
 - 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:
- Yellow: D0 Abnormally Dry
 - Light Orange: D1 Moderate Drought
 - Orange: D2 Severe Drought
 - Red: D3 Extreme Drought
 - Dark Red: D4 Exceptional Drought

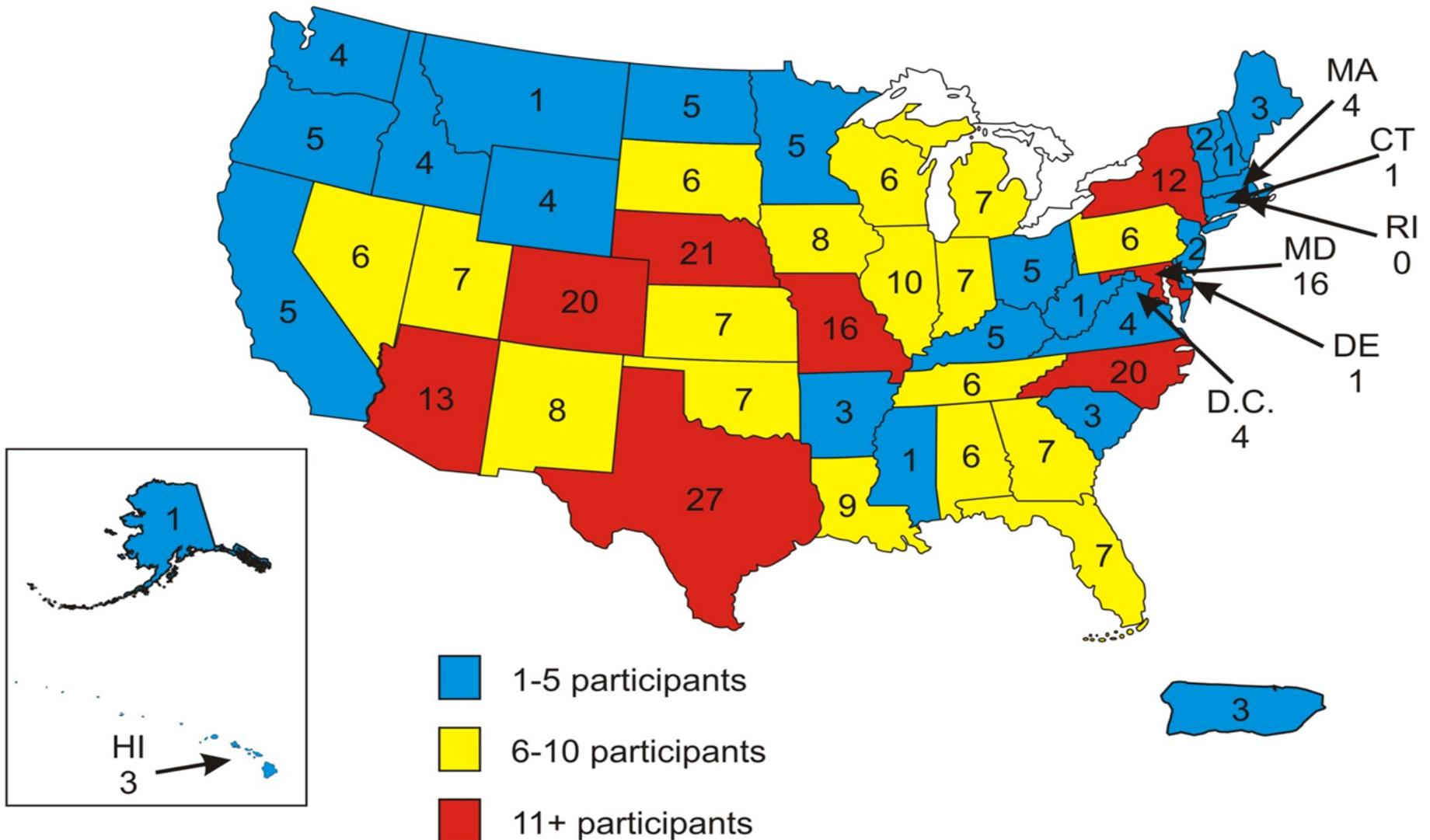
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

USDM Listserve Subscribers

(as of November 1, 2013)

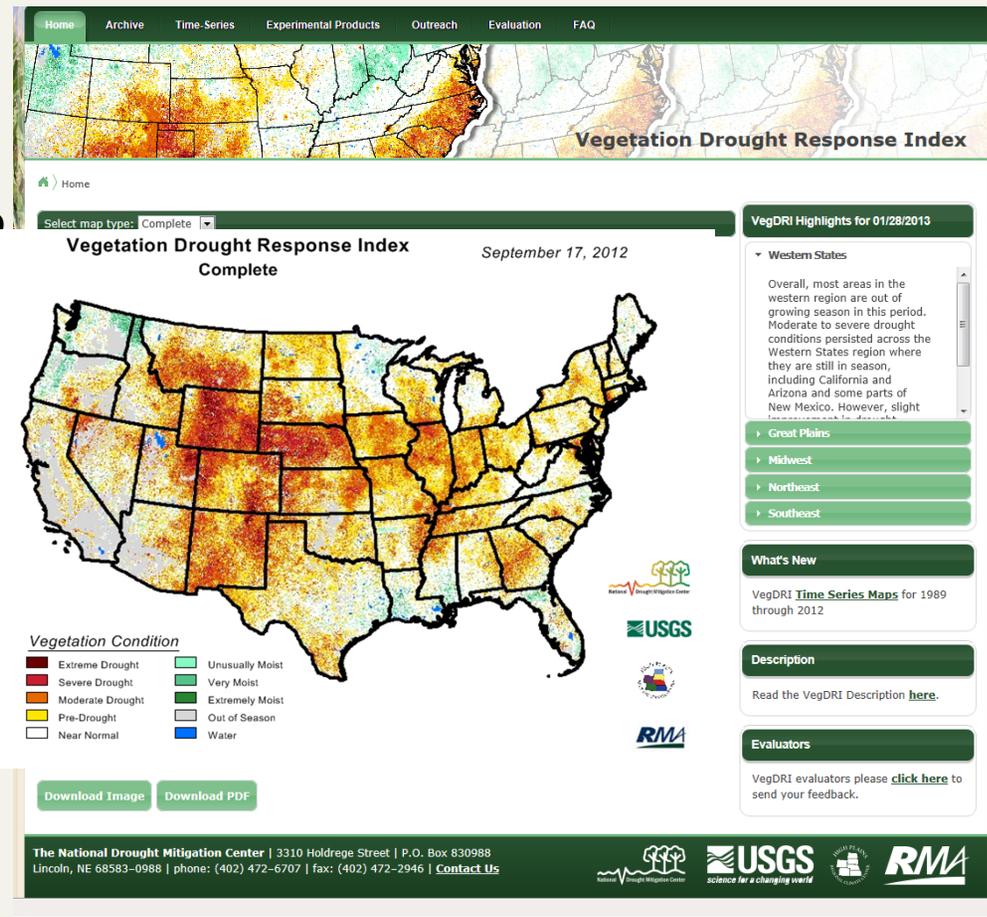


Total: 345 (does not include 1 participant from Canada)

Vegetation Drought Response Index (VegDRI):

- **Partnership** w/ USGS + HPRCC
- **20+ year archive** back to 1989
- **Augment *in situ* obs**
- **Hybrid** indicator combines satellite, biophysical and climate indicators together to detect **vegetation stress**
- **Weekly (MODIS) & bi-weekly (AVHRR)** production over contiguous U.S.
- **Value-added products:**
 - National, state and sub-state maps
 - Change maps
 - Area statistics
 - Descriptive narrative
 - Animations

 vegdri.unl.edu



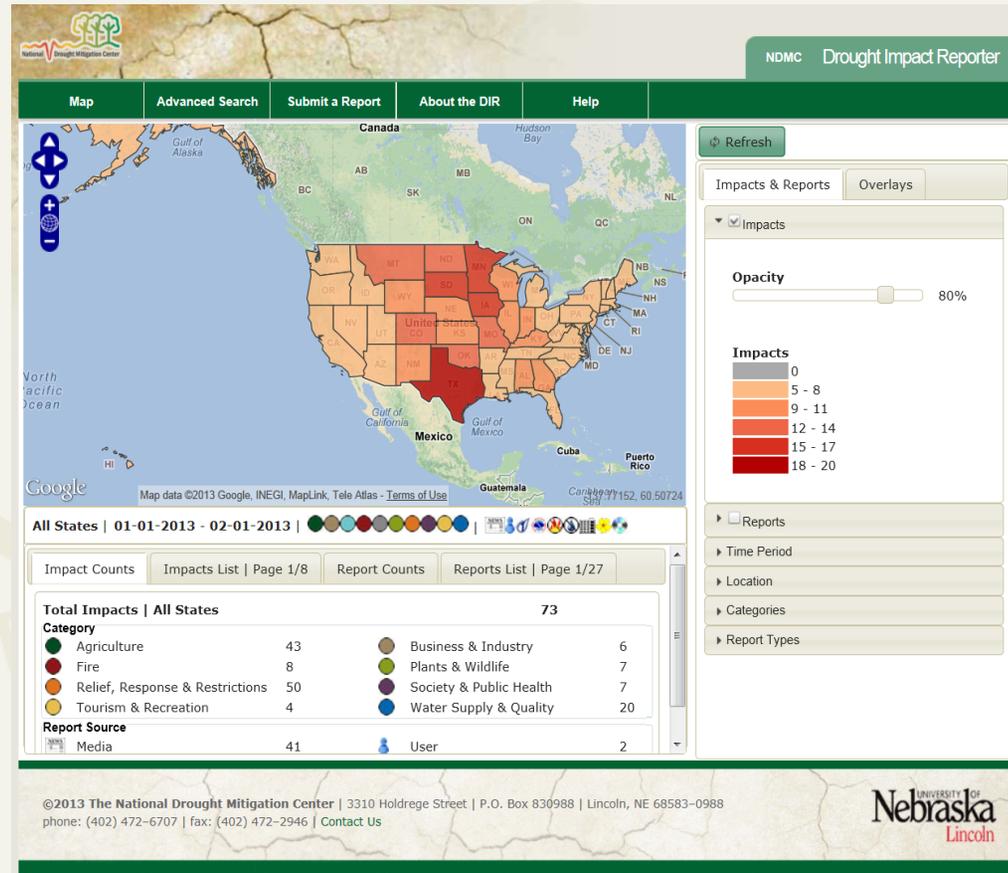
UNIVERSITY OF
Nebraska
Lincoln


National Drought Mitigation Center

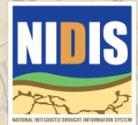
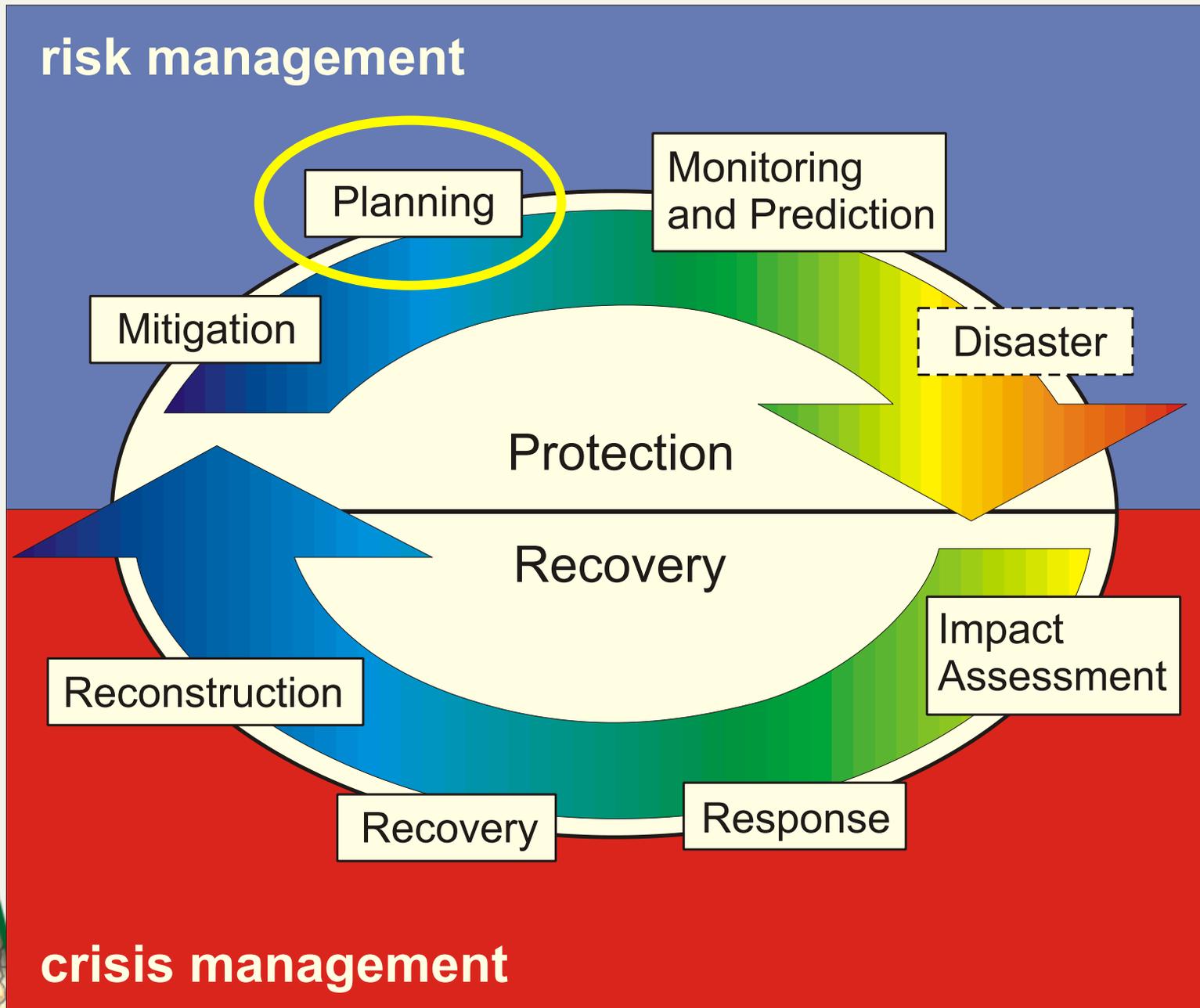
Drought Impact Reporter (DIR):

- On-line since **2005**
- **17,045** media reports and **16,000+** impacts in our database to date and growing
- Establishing a **"baseline"** of impacts due to droughts over time
 - "Face of drought"
 - Risk/vulnerability
 - Climate change
- **Ground truth** indices/RS
- Quantitative **AND** qualitative
- **Open to the public!**

 droughtreporter.unl.edu



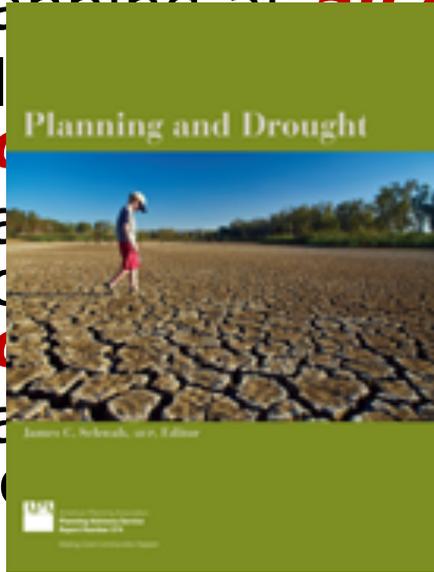
The Cycle of Disaster Management



Planning Tools



- ▶ Planning at all scales
- ▶ All planning and drought
- ▶ Planning and drought
- ▶ Planning and drought
- ▶ Planning and drought



Friday, November 22, 2013

Home Full Search About Submit a Strategy State Planning Info

National Drought Mitigation Center

Home Login

Drought Management Database

Introduction
This is a growing collection of information about what has been tried in responding to and preparing for drought in the United States. It's categorized by sector, that is, information of interest for farming, livestock production, water supply and quality, energy, recreation and tourism, fire, plants and wildlife (environment), and society and public health. Each sector is further divided into subsectors.

The **Full Search** option lets you search by many more criteria, including dates, type of activity (planning, response, monitoring, etc.), decision-making scope (from individual through federal government), by state, and by resource type. You can also do a text search.

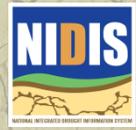
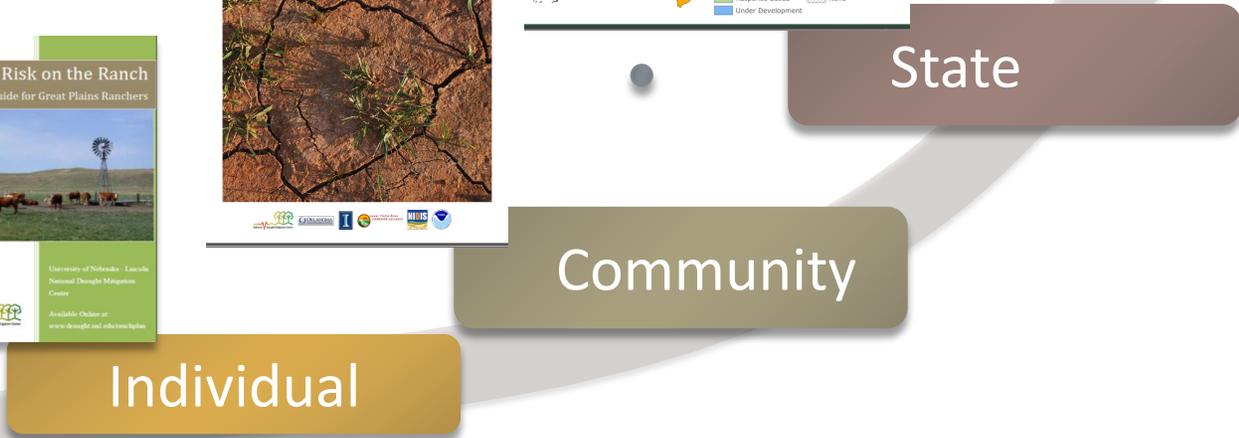
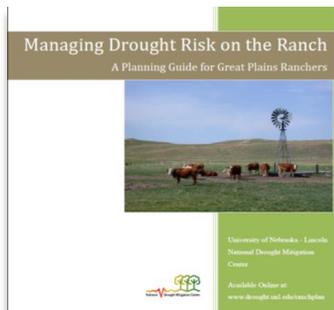
Have something to contribute or recommend? Visit the **Submit a Strategy** page.

Quick Search by Sector

- Farming
- Livestock Production
- Water Supply & Quality
- Energy
- Recreation/Tourism
- Fire
- Plants & Wildlife
- Society & Public Health

Recent Drought Mitigation News

- [State urges steps to prepare for drought in 2014](#)
Sep. 6, 2013
- [Drought Threat Hampers Hay Crop - Fort Smith Southwest Times Record \(AR\)](#)
Jul. 21, 2013
- [Mark Keaton: Grazing of toxic plants can be a problem - Baxter Bulletin \(AR\)](#)
Jul. 17, 2013
- [Fighting wildfires with science - CBS \(NAT\)](#)
Jul. 7, 2013
- [Nitrate spike tests Des Moines water supplies - Des Moines Register \(IA\)](#)
Jul. 1, 2013



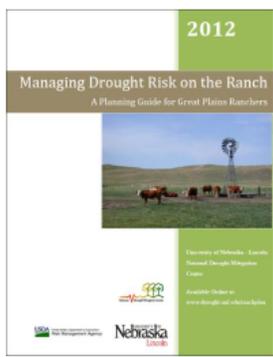
Overview Register Login

Managing Drought Risk on the Ranch

Drought is a normal part of climate...it will happen again. Fortunately, there are things you can do before, during, and after drought to reduce your risk. Ranchers are increasingly implementing new ways to better prepare for and respond to drought.

The information, strategies and resources on this site are designed to provide livestock producers in the [Great Plains region](#) with information on how to incorporate management strategies to reduce the threat drought poses to livestock and forage operations.

[Download "Managing Drought Risk on the Ranch" Handbook](#)



If you are unable to download this document would like to receive a paper copy by mail, please contact the NDMC at ranchplan@unl.edu or 472-6781.

[How to use this site](#)

Drought Conditions
[U.S. Drought Monitor](#)

Workshops and Webinars



10 am Central Time
January - May, 2013
Last Wednesday of each month

January 30: Managing Drought Risk on the Ranch: The Planning Process
Jerry Volesky, Range and Forage Specialist at the West Central Research and Extension Center, and Lynn Myers, Tippetts-Myers Ranch

February 27: Avoiding Analysis Paralysis: Monitoring and Setting Critical Dates for Decision Making During Drought
Dwayne Rice, Rangeland Management

Each session will include a briefing on current drought status, followed by a session on a specific topic or tool related to drought planning.

2012

Managing Drought Risk on the Ranch

A Planning Guide for Great Plains Ranchers



University of Nebraska - Lincoln
National Drought Mitigation
Center

Available Online at:
www.drought.unl.edu/ranchplan



- **NDMC**
- **USDA-RMA**
- **USDA-SARE**
- **Cooperative Extension**
- **NIDIS**

Drought Risk Atlas (DRA):

- Set to launch in **Fall 2013**
- **~3000** stations archived
 - 139 clusters/regions developed and analyzed
 - SPI, SPEI, PDSI, sc-PDSI and Deciles through 2010
 - Weekly gridded maps for all parameters back to early 1900s
- Created to answer questions about the **characteristics of drought:**
 - Frequency/return periods
 - Duration
 - Trends
 - Intensity
 - Spatial extent

▶ **Coming Soon!**

The screenshot shows the homepage of the Drought Risk Atlas. At the top, it displays the date "Friday, February 01, 2013" and a search icon. Below this is a header banner with the "National Drought Mitigation Center" logo and the title "Drought Risk Atlas" next to a map of the United States. A navigation menu includes links for Home, Climate, Data, Methodology, About, and Help. Below the menu are social media icons and a "Current Location" field. The main content area features a "Welcome to the Drought Risk Atlas" section with an "Introduction" sub-heading. The introduction text describes the project's goal to update and expand the national drought atlas, mentioning the original atlas from the early 1990s and the new atlas's focus on weekly gridded maps and expanded station data. A "Climate Data Map" is shown on the right, displaying a map of the United States with various data layers. At the bottom, there is a footer with contact information for the National Drought Mitigation Center, the University of Nebraska Lincoln logo, and the NIDIS logo.

Friday, February 01, 2013

Drought Risk Atlas

Home | Climate | Data | Methodology | About | Help

Current Location » Home

Welcome to the Drought Risk Atlas

Introduction

The idea of updating and expanding a national drought atlas was developed from the original Drought Atlas that was done in conjunction with United States Army Corps of Engineers by Hoskings, Wallis and Guttman in the early 1990s. The original Drought Atlas consisted of those stations in the Historical Climate Network (HCN), numbering approximately 1,000 stations. The period of record at the time was limited, as many stations only had records from the 1940s to present, and these data points were put into their respective climate divisions. A monthly time step was used to calculate the Palmer Drought Severity Index (PDSI). With the new Drought Atlas, bringing precise data down to spatial scales that would allow decision makers to use this tool to better understand drought in their respective region and to make a better decision.

For the new National Drought Atlas, the idea was to expand the data both in the number of stations analyzed and the period of record to include the most complete long-term stations, some of which are not part of the HCN. Using a weekly time-step to calculate multiple drought indices at each station location, not on a climate division scale, allows for a more precise representation of drought histories. The Standardized Precipitation Index (SPI), Palmer Drought Severity Index (PDSI), Deciles, the United States Drought Monitor and other Climatological data are included in the new drought atlas. Along with the Climatological data, gridded maps created on a weekly time-step are available for the entire United States.

The National Drought Mitigation Center | 3310 Holdrege Street | P.O. Box 830988 | Lincoln, NE 68583-0988
phone: (402) 472-6707 | fax: (402) 472-2946 | Contact Us

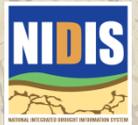
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Lincoln

Home | Climate | Data | Methodology | About | Help
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NIDIS
NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM

Final Thoughts

- ▶ ***Boundary organizations*** play a critical engagement and dissemination role in collaboration with many of you on this webinar...especially NIDIS
- ▶ Developing ***usable*** information and services is critical (trust factor too)
- ▶ ***Tools help bridge*** the gap between monitoring/early warning, prediction and preparedness (decision support)
- ▶ Goal is to ***link scientific knowledge w/ the actions*** needed to reduce impacts and future risk



Contact Information:

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402-472-8238

National Drought Mitigation Center
School of Natural Resources
University of Nebraska-Lincoln

