

DROUGHT★MART

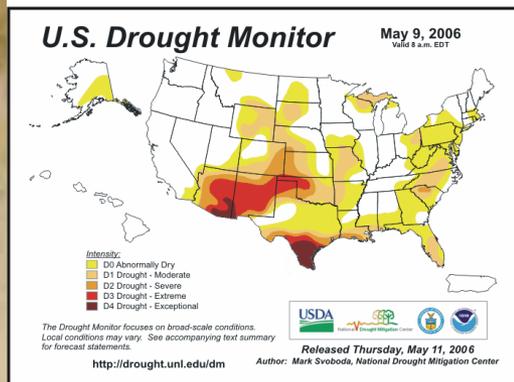
Your One-Tool Drought Monitoring Super Store

*Developing a New and Improved
Drought Monitor for the U.S.*

Brian Fuchs

National Drought Mitigation Center

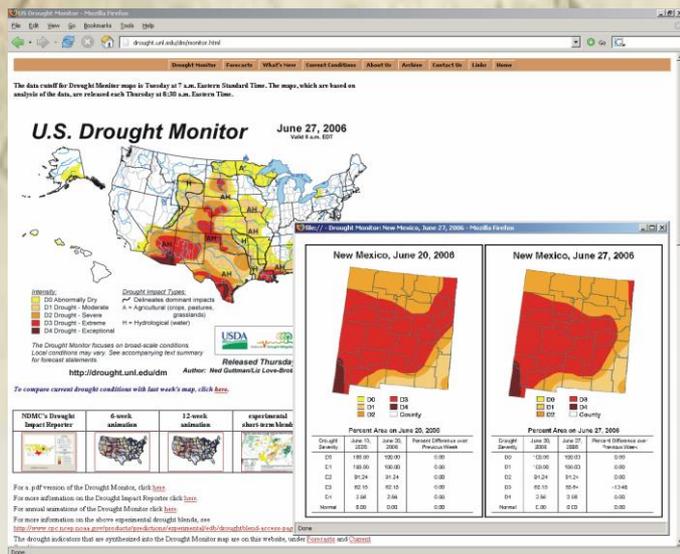
University of Nebraska-Lincoln



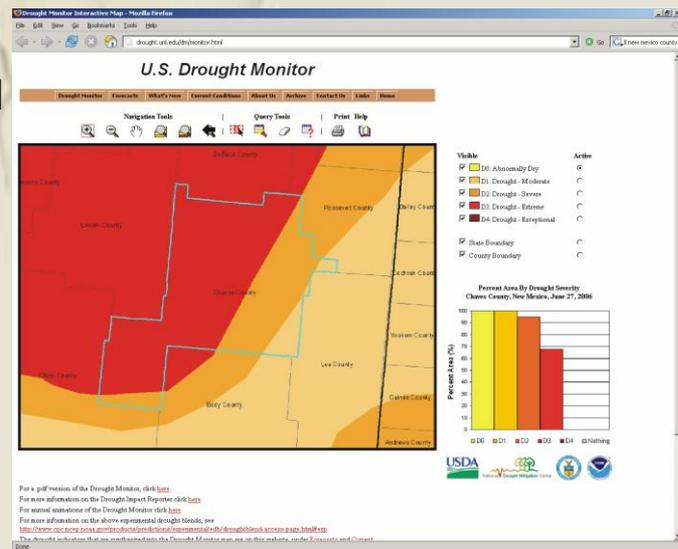
Drought Monitor Decision Support System (DM-DSS):

A Web-based Assessment Tool for Decision Makers

Mark Svoboda, Brian Fuchs, Dr. Michael Hayes, Dr. Jae Ryu, Soren Scott, and Ian Cottingham



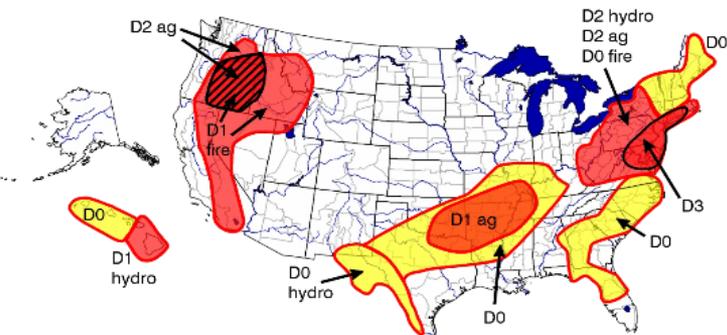
Moving toward state-level trend analysis capabilities (left) and providing more county-level drought assessment information (right).



The U.S. Drought Monitor

Since 1999, NOAA (CPC and NCDC), USDA, and the NDMC have produced a weekly composite drought map -- the U.S. Drought Monitor -- with input from numerous federal and non-federal partners

August 3, 1999 Experimental U.S. Drought Monitor



"Drought" means moisture shortages leading to damaged crops or pastures, high wildfire risk, or water shortages. The map is based on information from many sources, including both satellite and surface data, and it focuses on widespread drought. Local conditions may vary.

Yellow (D0) = Drought Watch Area (abnormally dry but not full drought status)

Red (D1-D4) = Current drought ranging in severity from standard (D1) to severe (D2-D3) to extreme (D4)

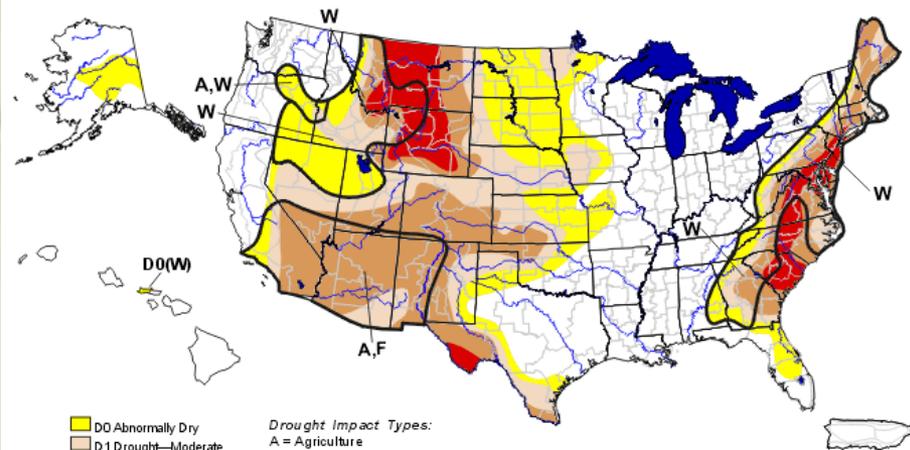
Crosshatching (▨) = Overlapping drought type areas

Drought type: Used when impacts differ
 Ag = agricultural (crops, grasslands)
 Fire = forestry (wildfire potential)
 Hydro = hydrological (rivers, wells, reservoirs)

Plus (+) = Forecast to intensify
 Minus (-) = Forecast to diminish



U.S. Drought Monitor April 16, 2002 Valid 8 a.m. EDT



- Yellow D0 Abnormally Dry
- Light Red D1 Drought—Moderate
- Dark Red D2 Drought—Severe
- Red D3 Drought—Extreme
- Dark Red D4 Drought—Exceptional

Drought Impact Types:

- A = Agriculture
- W = Water (Hydrological)
- F = Fire danger (Wildfires)
- ▨ Delineates dominant impacts
- (No type = All 3 impacts)

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

<http://drought.unl.edu/dm>

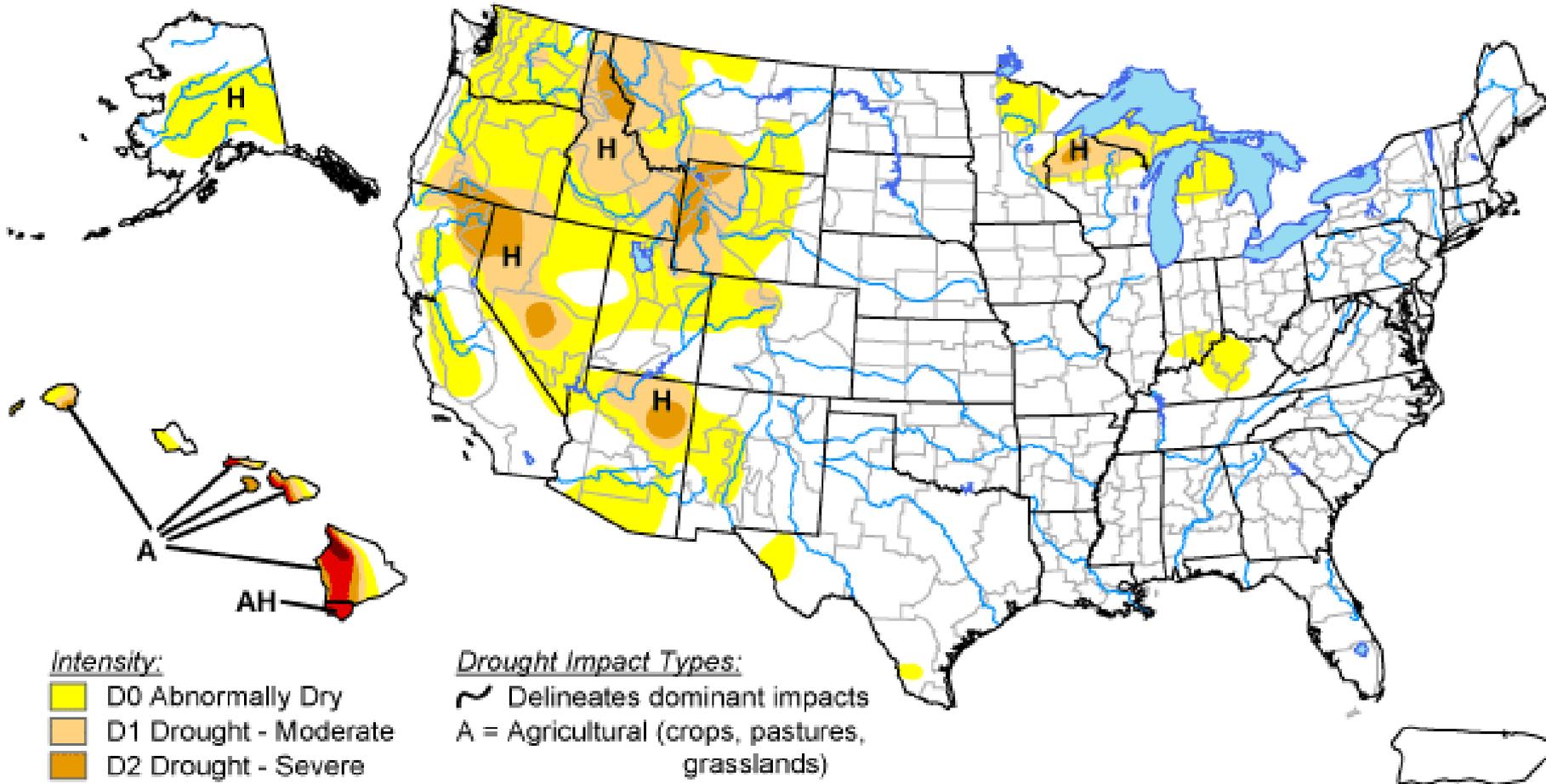


Released Thursday, April 18, 2002
 Author: David Miskus, JAW/CPC/NOAA

U.S. Drought Monitor

March 23, 2010

Valid 8 a.m. EDT



Intensity:

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

Drought Impact Types:

-  Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

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

<http://drought.unl.edu/dm>



Released Thursday, March 25, 2010
Author: Brad Rippey, U.S. Department of Agriculture

Do you currently use the United States Drought Monitor

X

A. Yes

X

B. No

The Drought Monitor Concept

- A *partnership* between the NDMC, USDA and NOAA's CPC, NCDC, and RCC's (WRCC)
(authors)
- Incorporate relevant information and products from all entities (and levels of government) dealing with drought (RCC's, SC's, federal/state agencies, etc.)
(experts)
- The **Drought Monitor** is *updated weekly* and provides a general up-to-date summary of current drought conditions across the 50 states, Puerto Rico and the Pacific possessions

The Drought Monitor Concept

- A consolidation of indices and indicators into one comprehensive national drought map
- Trying to capture these characteristics:
 - the drought's magnitude (duration + intensity)
 - spatial extent
 - probability of occurrence
 - Impacts
- Rates drought intensity by **percentile ranks**

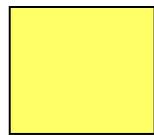
Original Objectives



- “Fujita-like” scale
- **NOT** a forecast!
- **NOT** a drought declaration!
- Identify **impacts** (A, H)
- Assessment of **current** conditions
- Incorporate **local expert** input
- Be as **objective** as possible

U.S. Drought Monitor Map

Drought Intensity Categories



D0 Abnormally Dry (30%tile)



D1 Drought – Moderate (20%tile)



D2 Drought – Severe (10%tile)



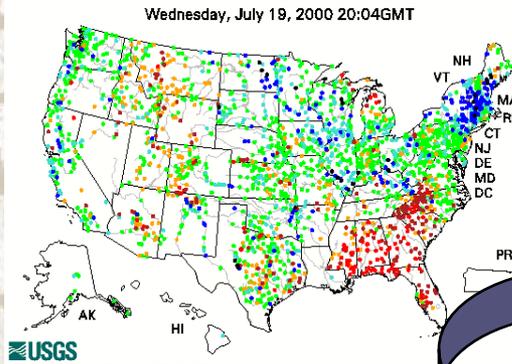
D3 Drought – Extreme (5%tile)



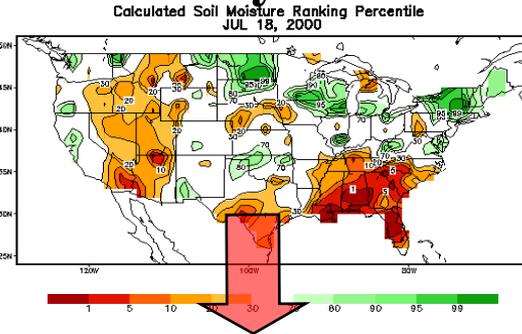
D4 Drought – Exceptional (2%tile)

Principal Drought Monitor Inputs

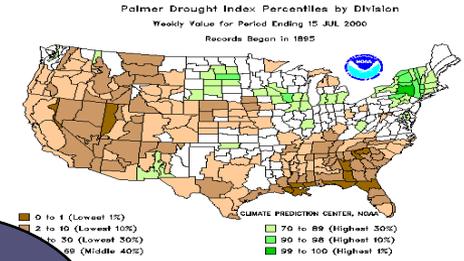
USGS Streamflow



CPC Daily Soil Model

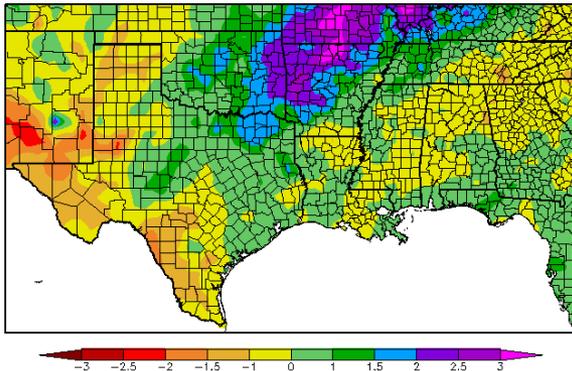


Palmer Drought Index



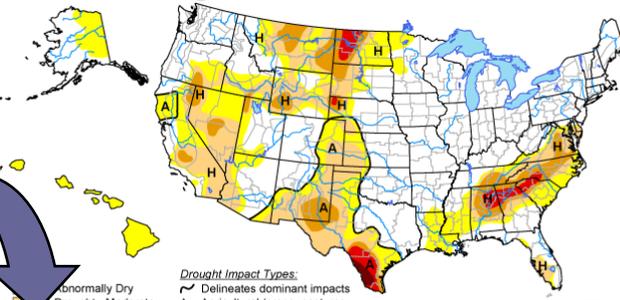
SPI Drought Index

90 Day SPI
1/16/2008 - 4/14/2008



U.S. Drought Monitor

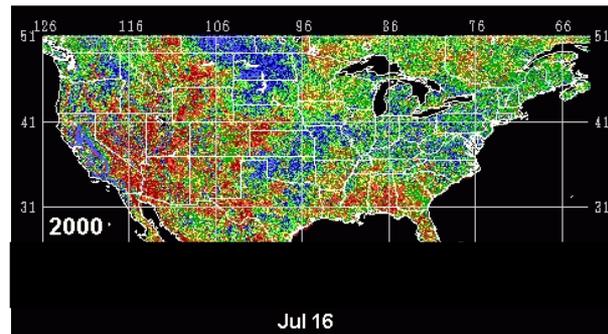
April 15, 2008
Valid 8 a.m. EDT



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

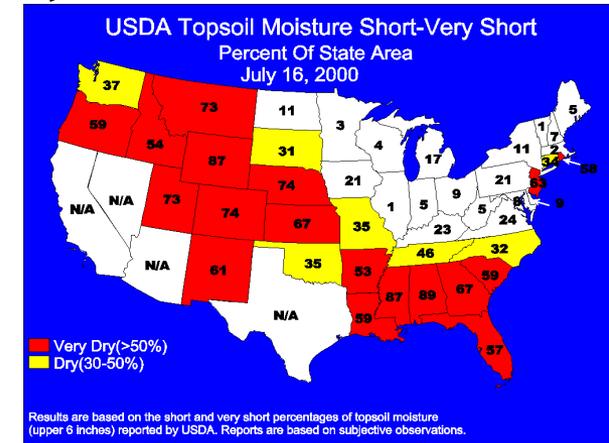
<http://drought.unl.edu/dm>

Released Thursday, April 17, 2008
 Authors: Jay Lawrence/Liz Love-Brotak, NOAA/NESDIS/NCDC



Satellite Veg Health

USDA Soil Ratings



U.S. Drought Monitor

Integrates Key Drought Indicators:

- Palmer Drought Index
- SPI
- KBDI
- Modeled Soil Moisture
- 7-Day Avg. Streamflow
- Precipitation Anomalies

Growing Season:

- Crop Moisture Index
- Sat. Veg. Health Index
- Soil Moisture
- Mesonet data

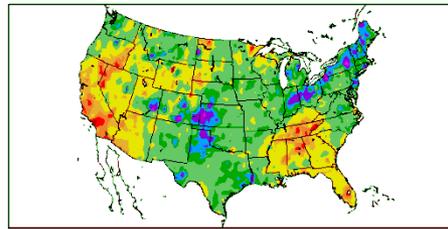
In The West:

- SWSI
- Reservoir levels
- Snowpack
- Streamflow

Created in ArcGIS



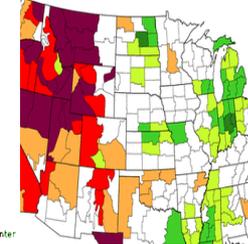
Water Year SPI
10/1/2006 - 4/19/2007



Generated 4/20/2007 at HPCC using provisional data. National Drought Mitigation Center

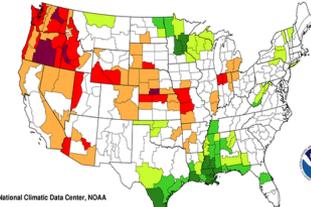
Palmer Drought Index
Long-Term (Meteorological) Conditions

October 21, 2001 - October 27, 2001



Standardized Precipitation Index
Six Months

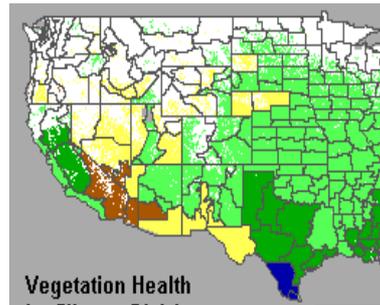
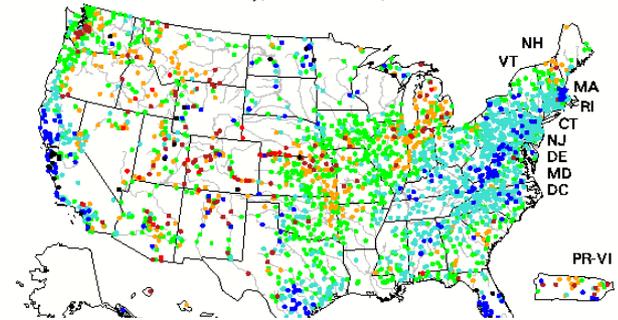
June-November 2002



National Climatic Data Center, NOAA



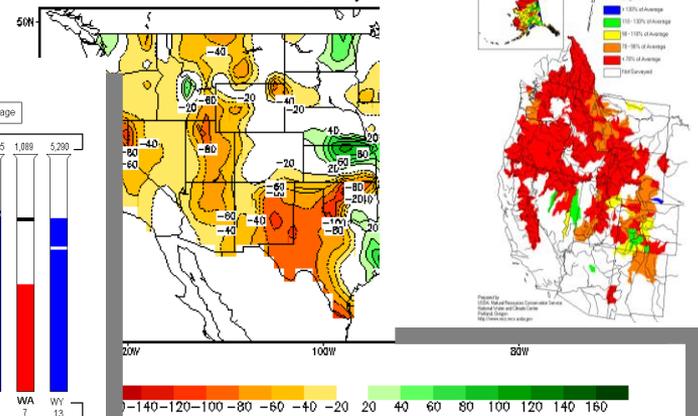
Sunday, December 22, 2002



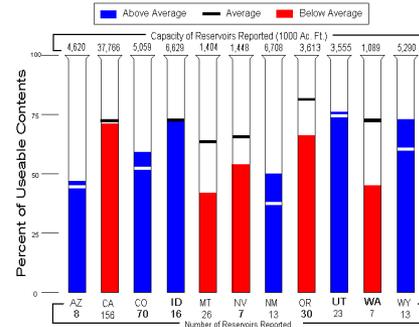
Vegetation Health by Climate Divisions
12/15/2002

Stre:

Calculated Soil Moisture Anomaly (mm)
OCT 31, 2



Reservoir Storage as of May 1, 2001



Prepared by: USDA, Natural Resources Conservation Service, National Water and Climate Center, Portland, OR
http://www.wcc.nrcs.usda.gov

Monitor Development *(Period starts 12Z last Tuesday)*

Monday (5 Days available)

- ✓ Draft map sent to local experts

Tuesday (6 Days available)

- ✓ Local expert feedback
- ✓ Draft map sent to local experts
- ✓ Draft text sent to local experts

Wednesday (7 Days available; ending 12Z yesterday)

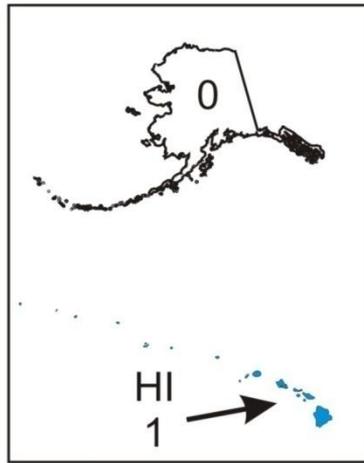
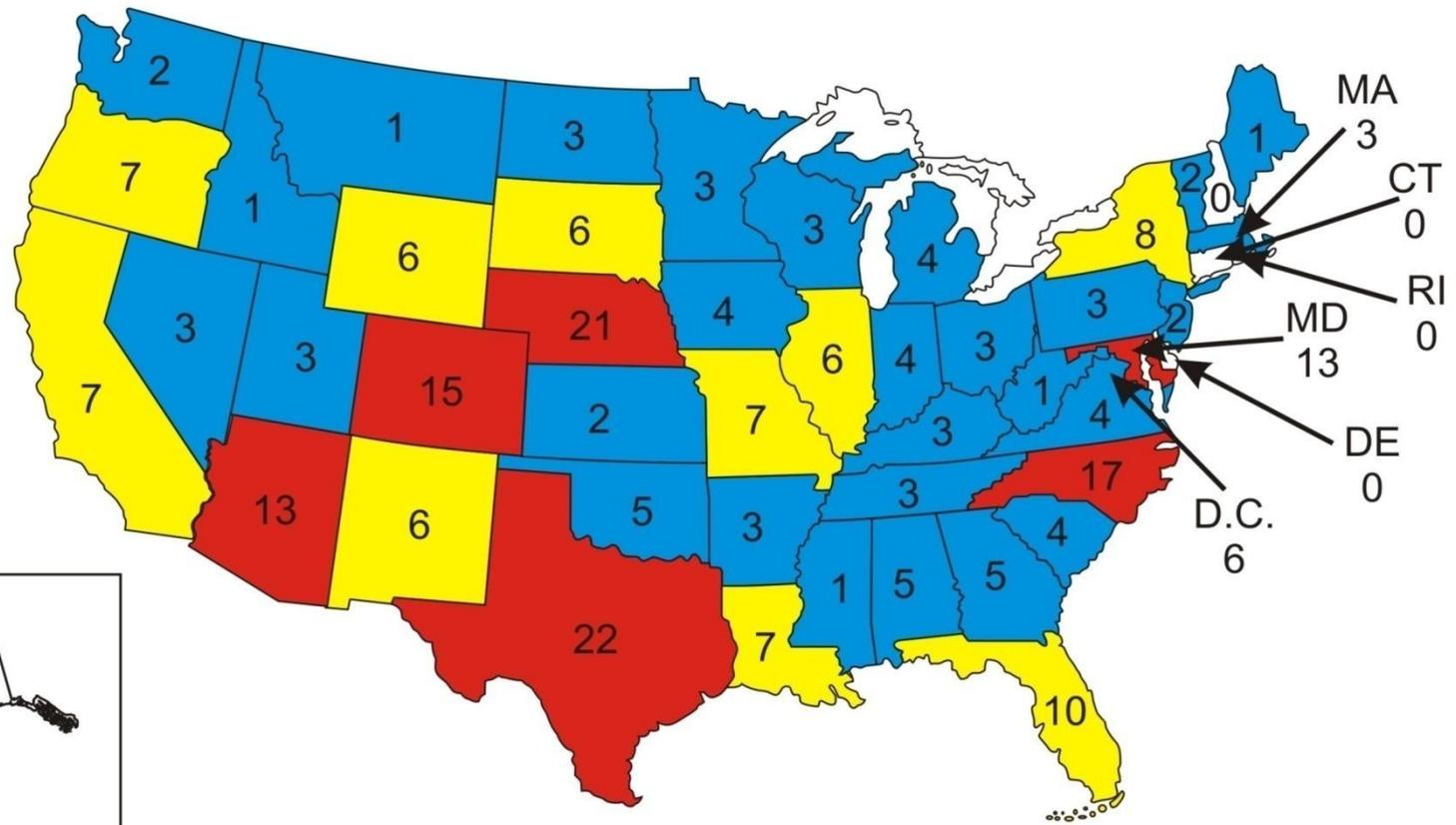
- ✓ Local expert feedback
- ✓ Draft map(s) sent to local experts
- ✓ Draft text(s) sent to local experts (Outlook)
- ✓ Final map and text sent to secured ftp server

Thursday

- ✓ Final map & text released on NDMC Website

USDM Listserve Subscribers

(as of February 2, 2009)

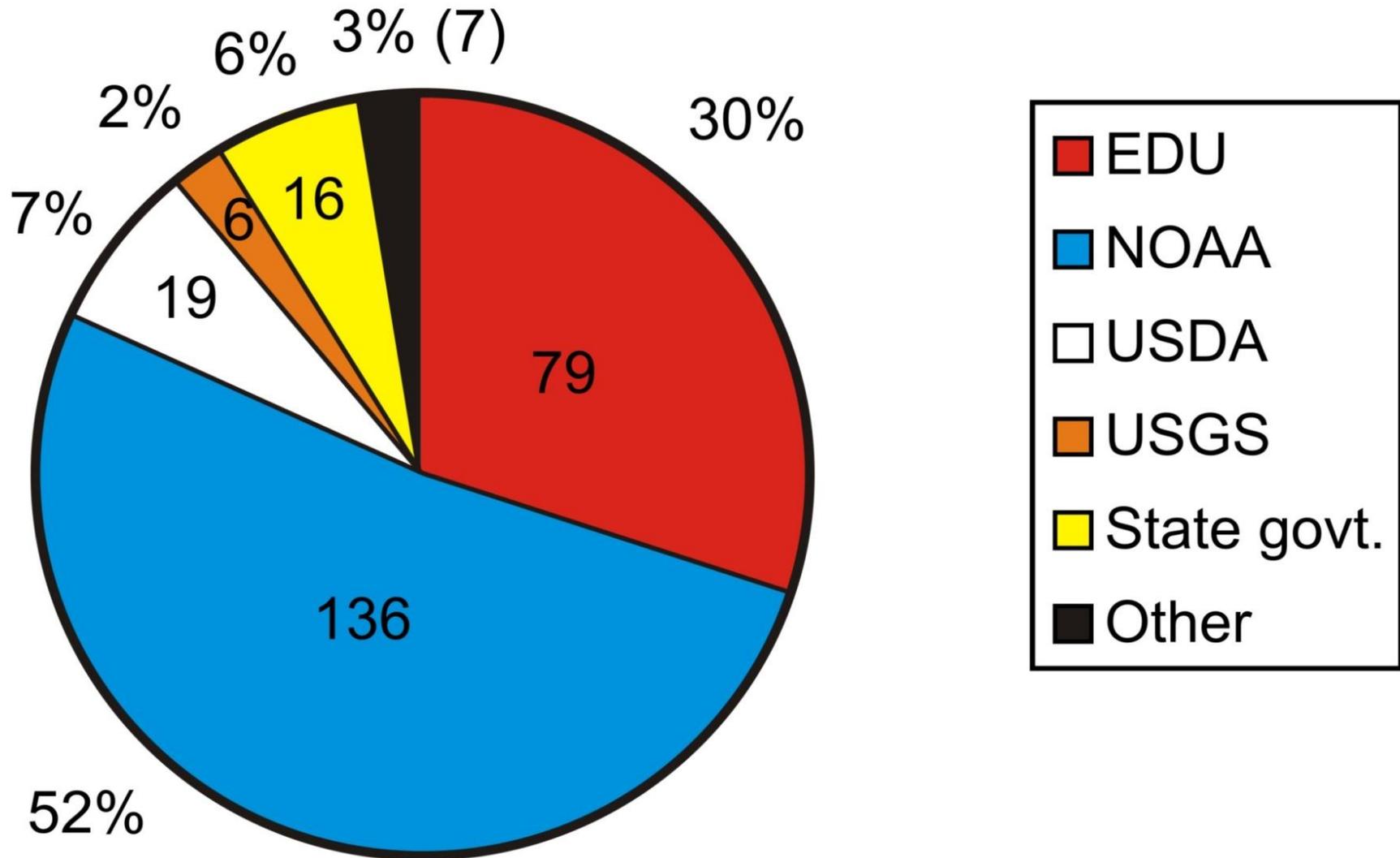


- 1-5 participants
- 6-10 participants
- 11+ participants

Total: 260 (does not include 2 participants from unknown locations and 1 participant from Canada)

USDM Listserve Subscribers

(as of February 2, 2009)



Visit the [NDMC Photo Gallery](#) to see photos of drought conditions in [California](#), [Georgia](#), [South Carolina](#), and other states. If you have photos showing drought conditions, please consider [submitting](#) them to the Photo Gallery.

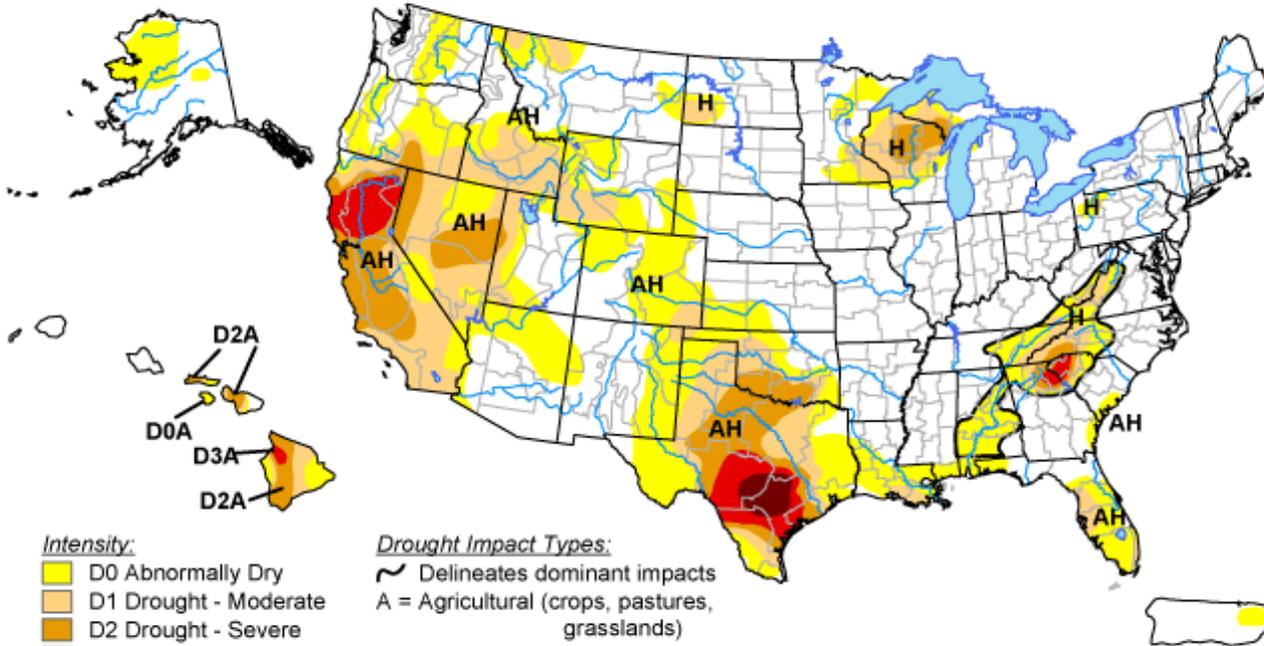
The data cutoff for Drought Monitor maps is Tuesday at 7 a.m. Eastern Standard Time. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.

NOTE: To view regional drought conditions, click on map below. State maps can be accessed from regional maps.

U.S. Drought Monitor

February 3, 2009

Valid 8 a.m. EST



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



Released Thursday, February 5, 2009

Author: Eric Luebehusen, U.S. Department of Agriculture

U.S. Drought Monitor

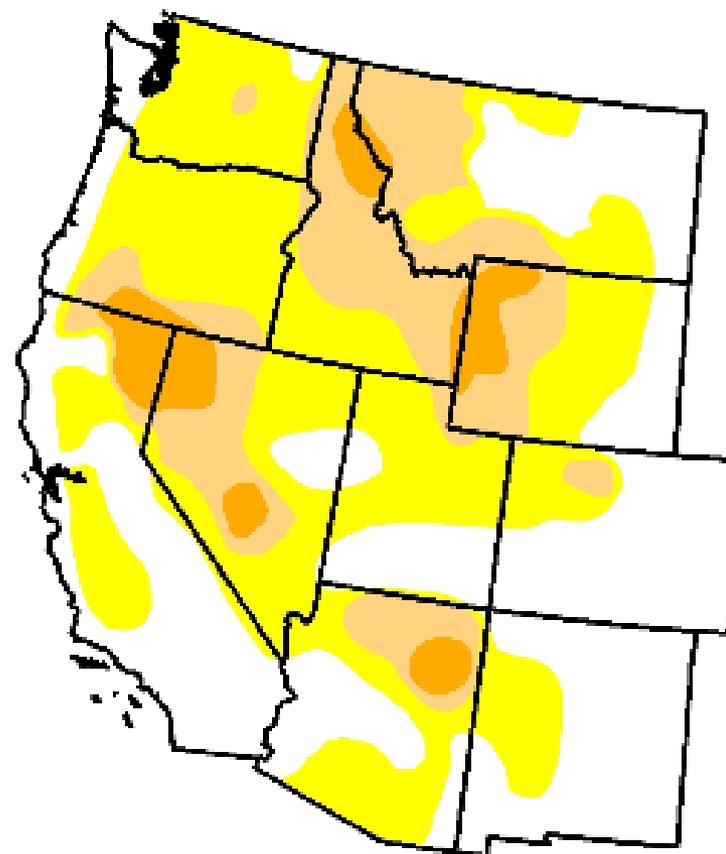
West

March 23, 2010

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	39.9	60.1	22.4	5.4	0.0	0.0
Last Week (03/16/2010 map)	38.1	61.9	22.3	5.6	0.0	0.0
3 Months Ago (12/29/2009 map)	40.8	59.2	28.4	9.9	0.5	0.0
Start of Calendar Year (01/05/2010 map)	40.1	59.9	30.6	9.9	0.5	0.0
Start of Water Year (10/06/2009 map)	42.1	57.9	25.4	8.5	0.0	0.0
One Year Ago (03/24/2009 map)	31.7	68.3	28.5	4.2	0.0	0.0



Intensity:

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

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

<http://drought.unl.edu/dm>



Released Thursday, March 25, 2010

Author: Brad Rippey, U.S. Dept. of Agriculture

U.S. Drought Monitor

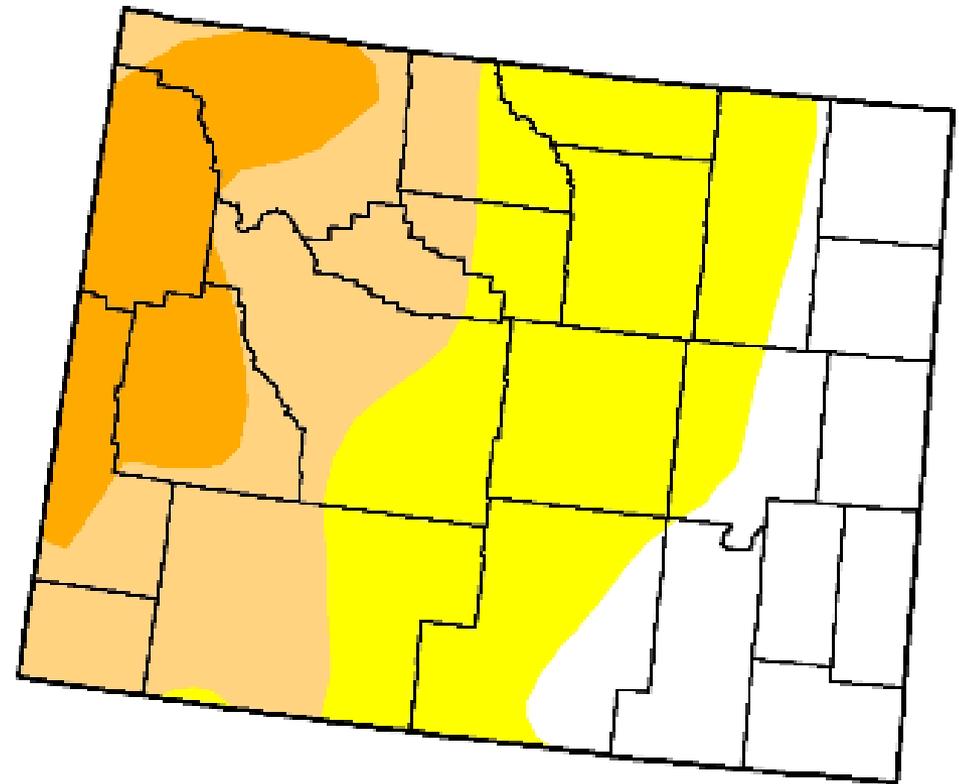
Wyoming

March 23, 2010

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	25.8	74.2	38.5	13.9	0.0	0.0
Last Week (03/16/2010 map)	25.8	74.2	38.5	13.9	0.0	0.0
3 Months Ago (12/29/2009 map)	86.8	13.2	0.0	0.0	0.0	0.0
Start of Calendar Year (01/05/2010 map)	79.3	20.7	0.9	0.0	0.0	0.0
Start of Water Year (10/06/2009 map)	100.0	0.0	0.0	0.0	0.0	0.0
One Year Ago (03/24/2009 map)	30.5	69.5	13.2	0.0	0.0	0.0



Intensity:

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

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

<http://drought.unl.edu/dm>



Released Thursday, March 25, 2010
 Author: Brad Rippey, U.S. Dept. of Agriculture

Drought Monitor Archives

[Maps](#)[Tables](#)[Animations](#)[1999 Archive](#)[GIS Data](#)

Drought Severity

North Carolina



D0 - Abnormally Dry



D2 Drought - Severe

D3 Drought - Extreme



D4 Drought - Exceptional

Contiguous U.S.

States

Regions

High Plains

Midwest

Northeast

South

Southeast

West

Alabama

Illinois

Montana

Puerto Rico

Alaska

Indiana

Nebraska

Rhode Island

Arizona

Iowa

Nevada

South Carolina

Arkansas

Kansas

New Hampshire

South Dakota

California

Kentucky

New Jersey

Tennessee

Colorado

Louisiana

New Mexico

Texas

Connecticut

Maine

New York

Utah

Delaware

Maryland

North Carolina

Vermont

District of Columbia

Massachusetts

North Dakota

Virginia

Florida

Michigan

Ohio

Washington

Georgia

Minnesota

Oklahoma

West Virginia

Hawaii

Mississippi

Oregon

Wisconsin

Idaho

Missouri

Pennsylvania

Wyoming



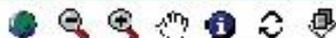
March 31, 2009



March 23, 2010



Week	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
March 31, 2009	58.06	41.94	18.79	0.60	0.00	0.00
March 23, 2010	100.00	0.00	0.00	0.00	0.00	0.00



?

Legend

Visible

Drought Monitor



Date

September 18, 2007

Transparency



ACIS Stations

Climate Layers

Standardized Precipitation Index

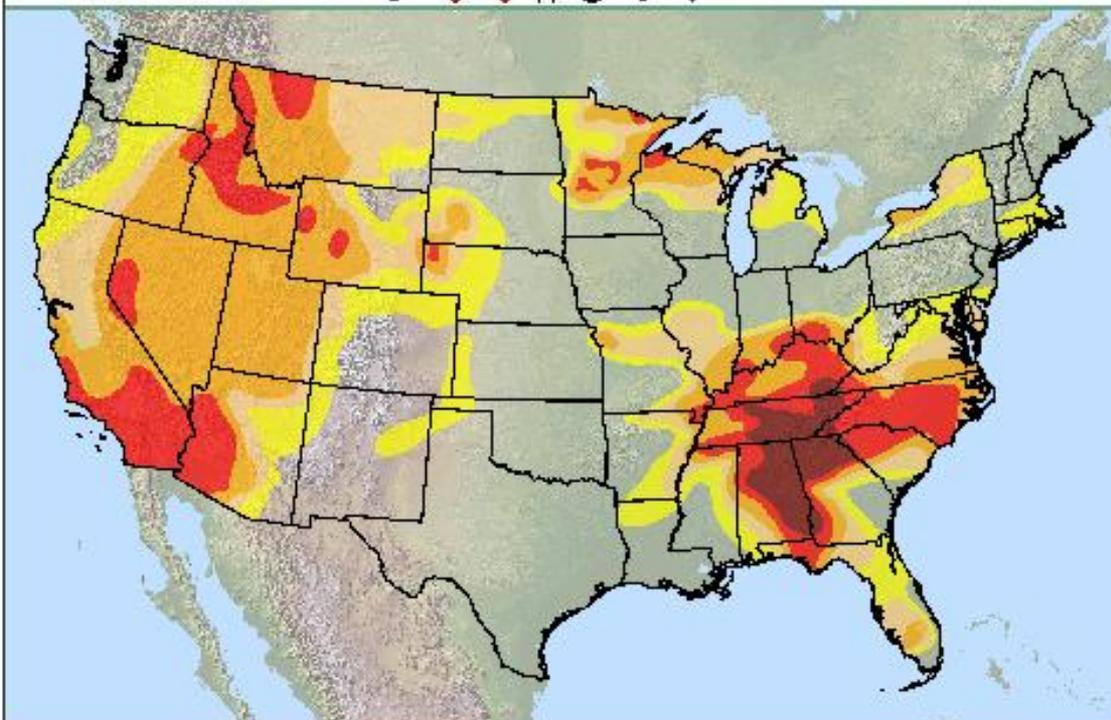
Palmer Drought Severity Index

ACIS Precipitation/Temperature Overlay

NWS Hybrid Radar/Gauge Precipitation Analysis

Boundaries

- Rivers
- Hydrologic Units (HUCs)
- Congressional Districts
- Climate Divisions
- Counties
- Cities
- Roads
- County Warning Areas
- States



Continental United States

Alaska

Hawaii

Puerto Rico

Drought Conditions: 2007



Date	Counties	D0	D1	D2	D3	D4
Sep 18, 2007	41	28	13	0	1	0
Sep 17, 2007	40	27	13	0	1	0
Sep 14, 2007	39	26	13	0	1	0
Sep 13, 2007	38	25	13	0	1	0
Sep 12, 2007	37	24	13	0	1	0
Sep 11, 2007	36	23	13	0	1	0
Sep 10, 2007	35	22	13	0	1	0
Sep 9, 2007	34	21	13	0	1	0
Sep 8, 2007	33	20	13	0	1	0
Sep 7, 2007	32	19	13	0	1	0
Sep 6, 2007	31	18	13	0	1	0
Sep 5, 2007	30	17	13	0	1	0
Sep 4, 2007	29	16	13	0	1	0
Sep 3, 2007	28	15	13	0	1	0
Sep 2, 2007	27	14	13	0	1	0
Sep 1, 2007	26	13	13	0	1	0
Aug 31, 2007	25	12	13	0	1	0
Aug 30, 2007	24	11	13	0	1	0
Aug 29, 2007	23	10	13	0	1	0
Aug 28, 2007	22	9	13	0	1	0
Aug 27, 2007	21	8	13	0	1	0
Aug 26, 2007	20	7	13	0	1	0
Aug 25, 2007	19	6	13	0	1	0
Aug 24, 2007	18	5	13	0	1	0
Aug 23, 2007	17	4	13	0	1	0
Aug 22, 2007	16	3	13	0	1	0
Aug 21, 2007	15	2	13	0	1	0
Aug 20, 2007	14	1	13	0	1	0
Aug 19, 2007	13	0	13	0	1	0
Aug 18, 2007	12	0	12	0	1	0
Aug 17, 2007	11	0	11	0	1	0
Aug 16, 2007	10	0	10	0	1	0
Aug 15, 2007	9	0	9	0	1	0
Aug 14, 2007	8	0	8	0	1	0
Aug 13, 2007	7	0	7	0	1	0
Aug 12, 2007	6	0	6	0	1	0
Aug 11, 2007	5	0	5	0	1	0
Aug 10, 2007	4	0	4	0	1	0
Aug 9, 2007	3	0	3	0	1	0
Aug 8, 2007	2	0	2	0	1	0
Aug 7, 2007	1	0	1	0	1	0
Aug 6, 2007	0	0	0	0	1	0
Aug 5, 2007	0	0	0	0	1	0
Aug 4, 2007	0	0	0	0	1	0
Aug 3, 2007	0	0	0	0	1	0
Aug 2, 2007	0	0	0	0	1	0
Aug 1, 2007	0	0	0	0	1	0
Jul 31, 2007	0	0	0	0	1	0
Jul 30, 2007	0	0	0	0	1	0
Jul 29, 2007	0	0	0	0	1	0
Jul 28, 2007	0	0	0	0	1	0
Jul 27, 2007	0	0	0	0	1	0
Jul 26, 2007	0	0	0	0	1	0
Jul 25, 2007	0	0	0	0	1	0
Jul 24, 2007	0	0	0	0	1	0
Jul 23, 2007	0	0	0	0	1	0
Jul 22, 2007	0	0	0	0	1	0
Jul 21, 2007	0	0	0	0	1	0
Jul 20, 2007	0	0	0	0	1	0
Jul 19, 2007	0	0	0	0	1	0
Jul 18, 2007	0	0	0	0	1	0
Jul 17, 2007	0	0	0	0	1	0
Jul 16, 2007	0	0	0	0	1	0
Jul 15, 2007	0	0	0	0	1	0
Jul 14, 2007	0	0	0	0	1	0
Jul 13, 2007	0	0	0	0	1	0
Jul 12, 2007	0	0	0	0	1	0
Jul 11, 2007	0	0	0	0	1	0
Jul 10, 2007	0	0	0	0	1	0
Jul 9, 2007	0	0	0	0	1	0
Jul 8, 2007	0	0	0	0	1	0
Jul 7, 2007	0	0	0	0	1	0
Jul 6, 2007	0	0	0	0	1	0
Jul 5, 2007	0	0	0	0	1	0
Jul 4, 2007	0	0	0	0	1	0
Jul 3, 2007	0	0	0	0	1	0
Jul 2, 2007	0	0	0	0	1	0
Jul 1, 2007	0	0	0	0	1	0
Jun 30, 2007	0	0	0	0	1	0
Jun 29, 2007	0	0	0	0	1	0
Jun 28, 2007	0	0	0	0	1	0
Jun 27, 2007	0	0	0	0	1	0
Jun 26, 2007	0	0	0	0	1	0
Jun 25, 2007	0	0	0	0	1	0
Jun 24, 2007	0	0	0	0	1	0
Jun 23, 2007	0	0	0	0	1	0
Jun 22, 2007	0	0	0	0	1	0
Jun 21, 2007	0	0	0	0	1	0
Jun 20, 2007	0	0	0	0	1	0
Jun 19, 2007	0	0	0	0	1	0
Jun 18, 2007	0	0	0	0	1	0
Jun 17, 2007	0	0	0	0	1	0
Jun 16, 2007	0	0	0	0	1	0
Jun 15, 2007	0	0	0	0	1	0
Jun 14, 2007	0	0	0	0	1	0
Jun 13, 2007	0	0	0	0	1	0
Jun 12, 2007	0	0	0	0	1	0
Jun 11, 2007	0	0	0	0	1	0
Jun 10, 2007	0	0	0	0	1	0
Jun 9, 2007	0	0	0	0	1	0
Jun 8, 2007	0	0	0	0	1	0
Jun 7, 2007	0	0	0	0	1	0
Jun 6, 2007	0	0	0	0	1	0
Jun 5, 2007	0	0	0	0	1	0
Jun 4, 2007	0	0	0	0	1	0
Jun 3, 2007	0	0	0	0	1	0
Jun 2, 2007	0	0	0	0	1	0
Jun 1, 2007	0	0	0	0	1	0
May 31, 2007	0	0	0	0	1	0
May 30, 2007	0	0	0	0	1	0
May 29, 2007	0	0	0	0	1	0
May 28, 2007	0	0	0	0	1	0
May 27, 2007	0	0	0	0	1	0
May 26, 2007	0	0	0	0	1	0
May 25, 2007	0	0	0	0	1	0
May 24, 2007	0	0	0	0	1	0
May 23, 2007	0	0	0	0	1	0
May 22, 2007	0	0	0	0	1	0
May 21, 2007	0	0	0	0	1	0
May 20, 2007	0	0	0	0	1	0
May 19, 2007	0	0	0	0	1	0
May 18, 2007	0	0	0	0	1	0
May 17, 2007	0	0	0	0	1	0
May 16, 2007	0	0	0	0	1	0
May 15, 2007	0	0	0	0	1	0
May 14, 2007	0	0	0	0	1	0
May 13, 2007	0	0	0	0	1	0
May 12, 2007	0	0	0	0	1	0
May 11, 2007	0	0	0	0	1	0
May 10, 2007	0	0	0	0	1	0
May 9, 2007	0	0	0	0	1	0
May 8, 2007	0	0	0	0	1	0
May 7, 2007	0	0	0	0	1	0
May 6, 2007	0	0	0	0	1	0
May 5, 2007	0	0	0	0	1	0
May 4, 2007	0	0	0	0	1	0
May 3, 2007	0	0	0	0	1	0
May 2, 2007	0	0	0	0	1	0
May 1, 2007	0	0	0	0	1	0
Apr 30, 2007	0	0	0	0	1	0
Apr 29, 2007	0	0	0	0	1	0
Apr 28, 2007	0	0	0	0	1	0
Apr 27, 2007	0	0	0	0	1	0
Apr 26, 2007	0	0	0	0	1	0
Apr 25, 2007	0	0	0	0	1	0
Apr 24, 2007	0	0	0	0	1	0
Apr 23, 2007	0	0	0	0	1	0
Apr 22, 2007	0	0	0	0	1	0
Apr 21, 2007	0	0	0	0	1	0
Apr 20, 2007	0	0	0	0	1	0
Apr 19, 2007	0	0	0	0	1	0
Apr 18, 2007	0	0	0	0	1	0
Apr 17, 2007	0	0	0	0	1	0
Apr 16, 2007	0	0	0	0	1	0
Apr 15, 2007	0	0	0	0	1	0
Apr 14, 2007	0	0	0	0	1	0
Apr 13, 2007	0	0	0	0	1	0
Apr 12, 2007	0	0	0			

About the Drought Monitor

Impacts

Animations

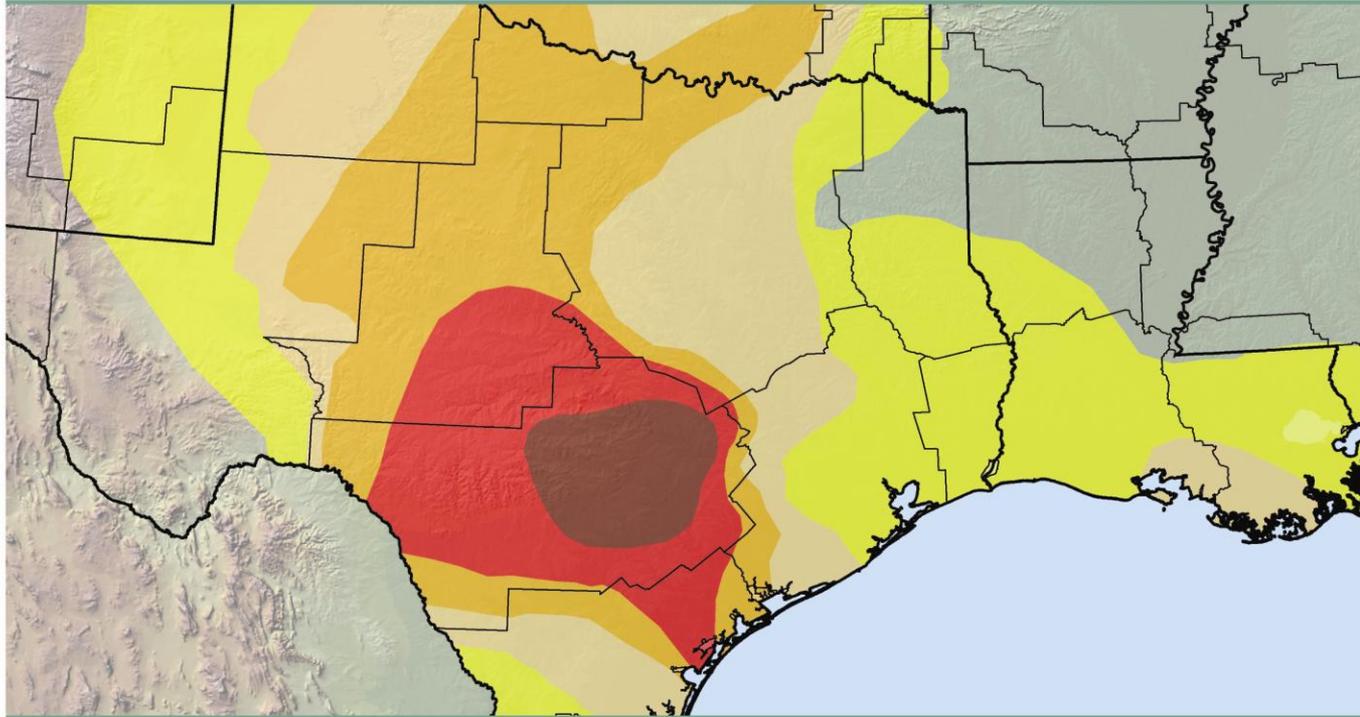
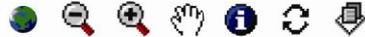
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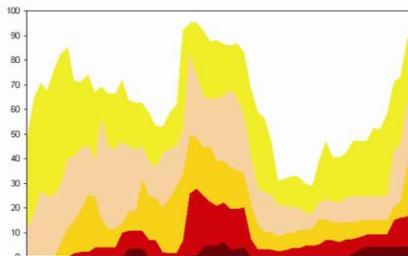


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 Alaska
 Hawaii
 Puerto Rico

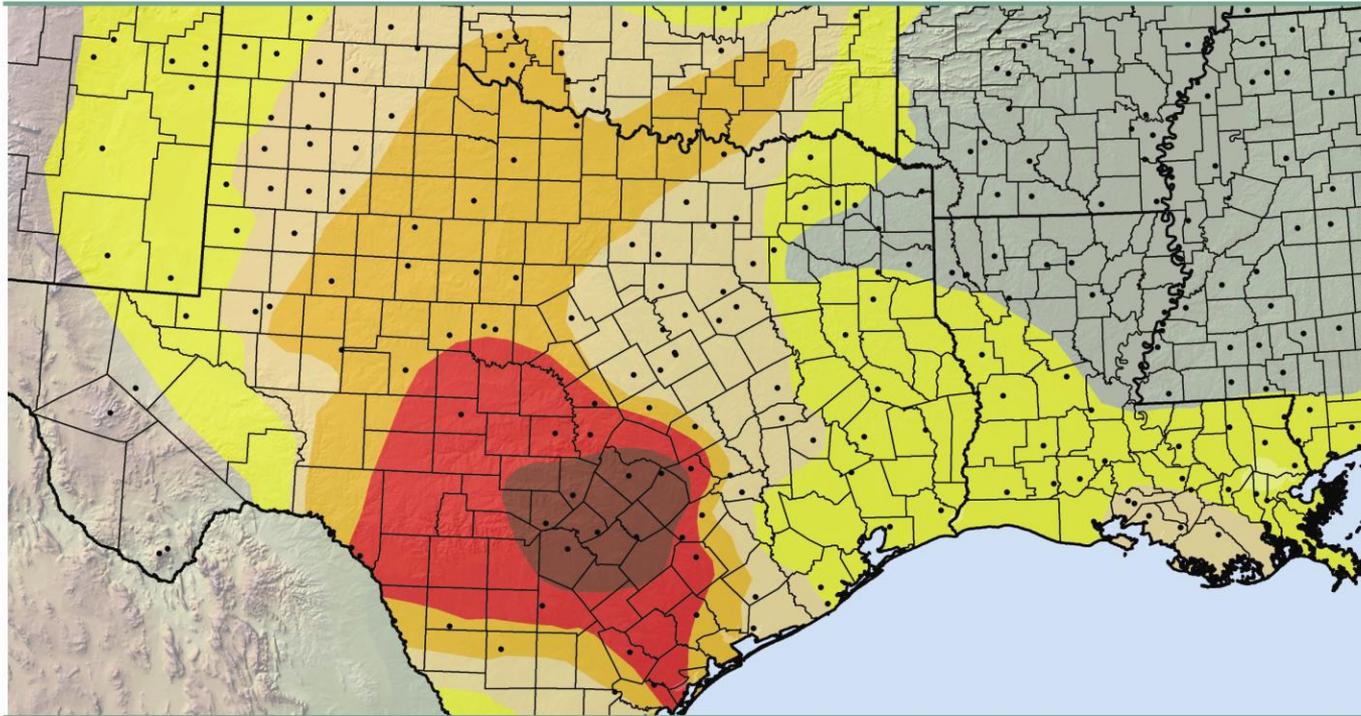
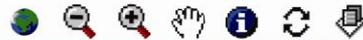
Legend

- Visible
- [-] Drought Monitor
 - D0
 - D1
 - D2
 - D3
 - D4
 - Date:
 - Transparency:
 - [-] ACIS Stations
 - [-] Climate Layers
 - Standardized Precipitation Index
 - Palmer Drought Severity Index
 - [-] ^{Select} Boundaries
 - Rivers
 - Hydrologic Units (HUCs)
 - Congressional Districts
 - Climate Divisions
 - Counties
 - Cities
 - Roads
 - County Warning Areas
 - States

Drought Conditions: January 2008-January 2009



Week	Nothing	D0	D1	D2	D3	D4
January 27, 2009	11.61	88.39	62.14	37.54	16.48	4.15
January 20, 2009	26.86	73.14	45.84	22.22	16.04	4.15
January 13, 2009	28.95	71.05	43.02	20.59	15.05	4.15
January 6, 2009	41.67	58.33	24.52	14.96	9.07	4.15
December 30, 2008	48.06	51.94	24.52	14.96	9.07	4.15
December 23, 2008	47.65	52.35	24.56	14.96	9.07	4.15
December 16, 2008	52.90	47.10	24.56	14.96	9.07	4.15
December 9, 2008	52.90	47.10	24.56	14.96	8.12	3.20
December 2, 2008	53.01	46.99	24.54	14.23	7.46	1.25
November 25, 2008	57.82	42.18	24.25	14.23	7.13	0.00



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 Puerto Rico

Climate Links for Texas

Southern Regional Climate Center:
<http://www.srcc.lsu.edu>

Bureau of Reclamation Reservoir Levels:
<http://www.usbr.gov/gp/water/rflow.cfm>

USGS Real-Time Streamflow Data:
<http://waterdata.usgs.gov/tx/nwis/rt>

Legend

- Visible
- Drought Monitor
 - D0
 - D1
 - D2
 - D3
 - D4
 - Date:
 - Transparency: 40%
 - ACIS Stations
 - Climate Layers
 - Standardized Precipitation Index
 - Palmer Drought Severity Index
 - ^{Select} Boundaries
 - Rivers
 - Hydrologic Units (HUCs)
 - Congressional Districts
 - Climate Divisions
 - Counties
 - Cities
 - Roads
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 - States

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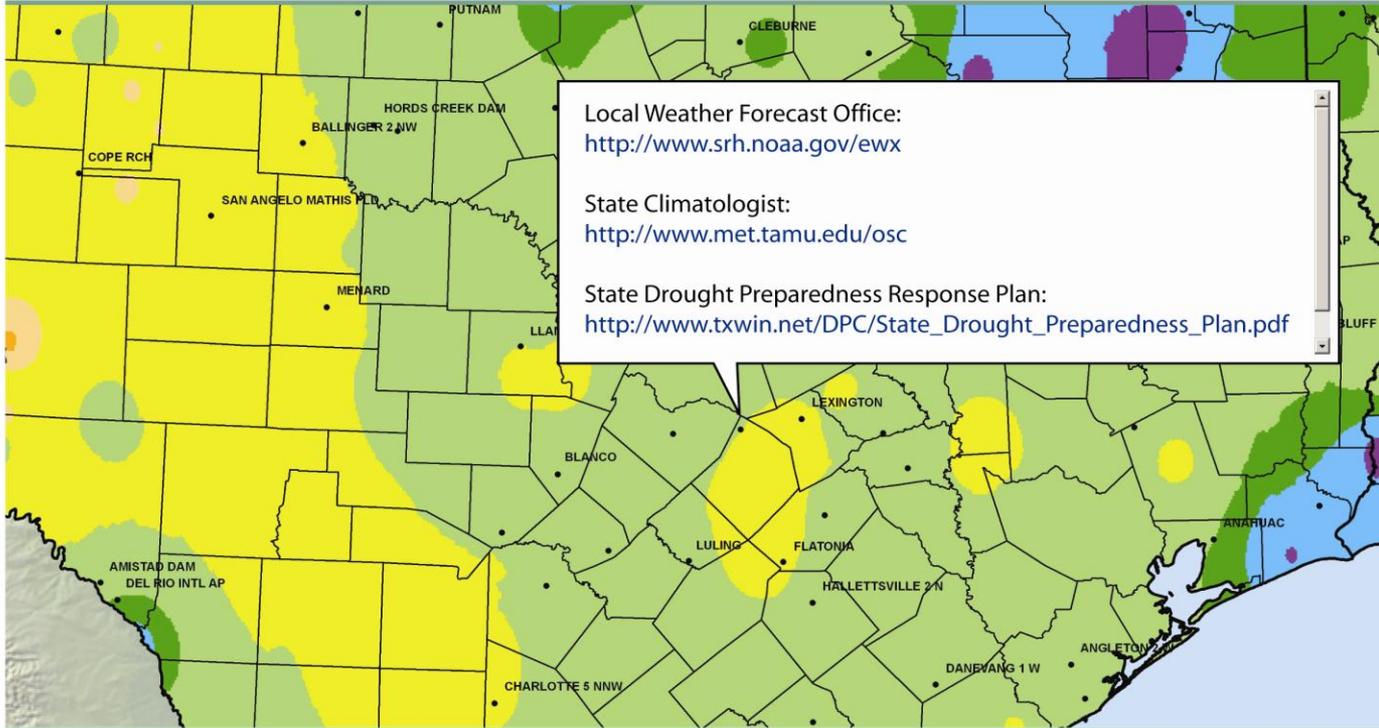
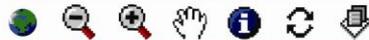
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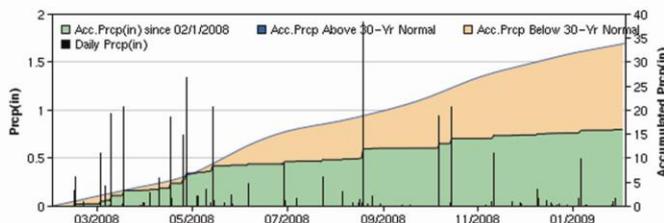
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Legend

- Visible
- Drought Monitor
 - ACIS Stations
 - Station Name
 - Climate Layers
 - Standardized Precipitation Index
 - < -3
 - 3 to -2.5
 - 2.5 to -2
 - 2 to -1.5
 - 1.5 to -1
 - 1 to 0
 - 0 to 1
 - 1 to 1.5
 - 1.5 to 2
 - 2 to 2.5
 - 2.5 to 3
 - > 3
 - Palmer Drought Severity Index

- Select
- Boundaries
 - Rivers
 - Hydrologic Units (HUCs)
 - Congressional Districts
 - Climate Divisions
 - Counties
 - Cities
 - Roads
 - County Warning Areas

Precipitation: January 2008-January 2009



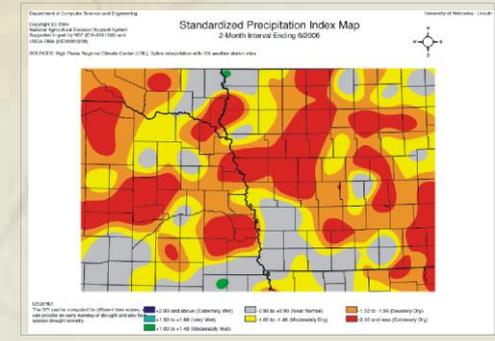
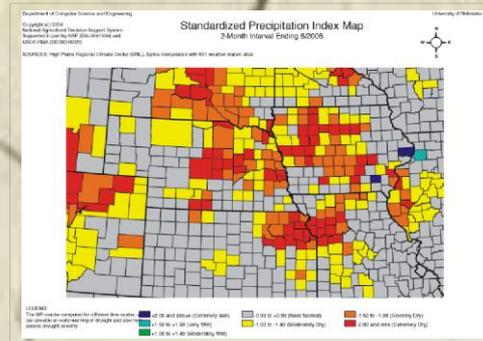
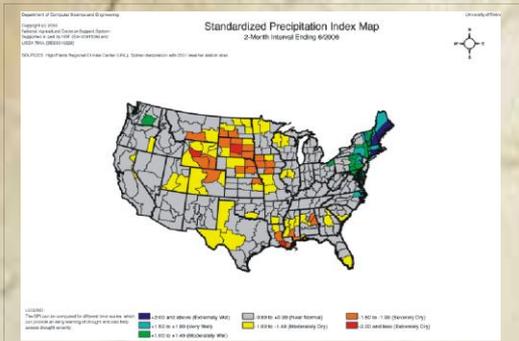
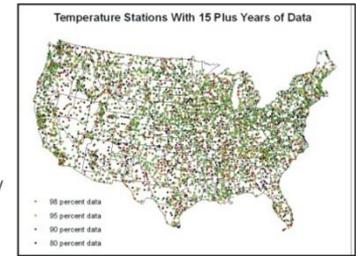
Drought Impacts for Austin , TX

Water Impact 12/11/2008
 Austin, Texas—The Barton Springs/Edwards Aquifer Conservation District is in a critical stage drought. Those who pump groundwater in the district must reduce...



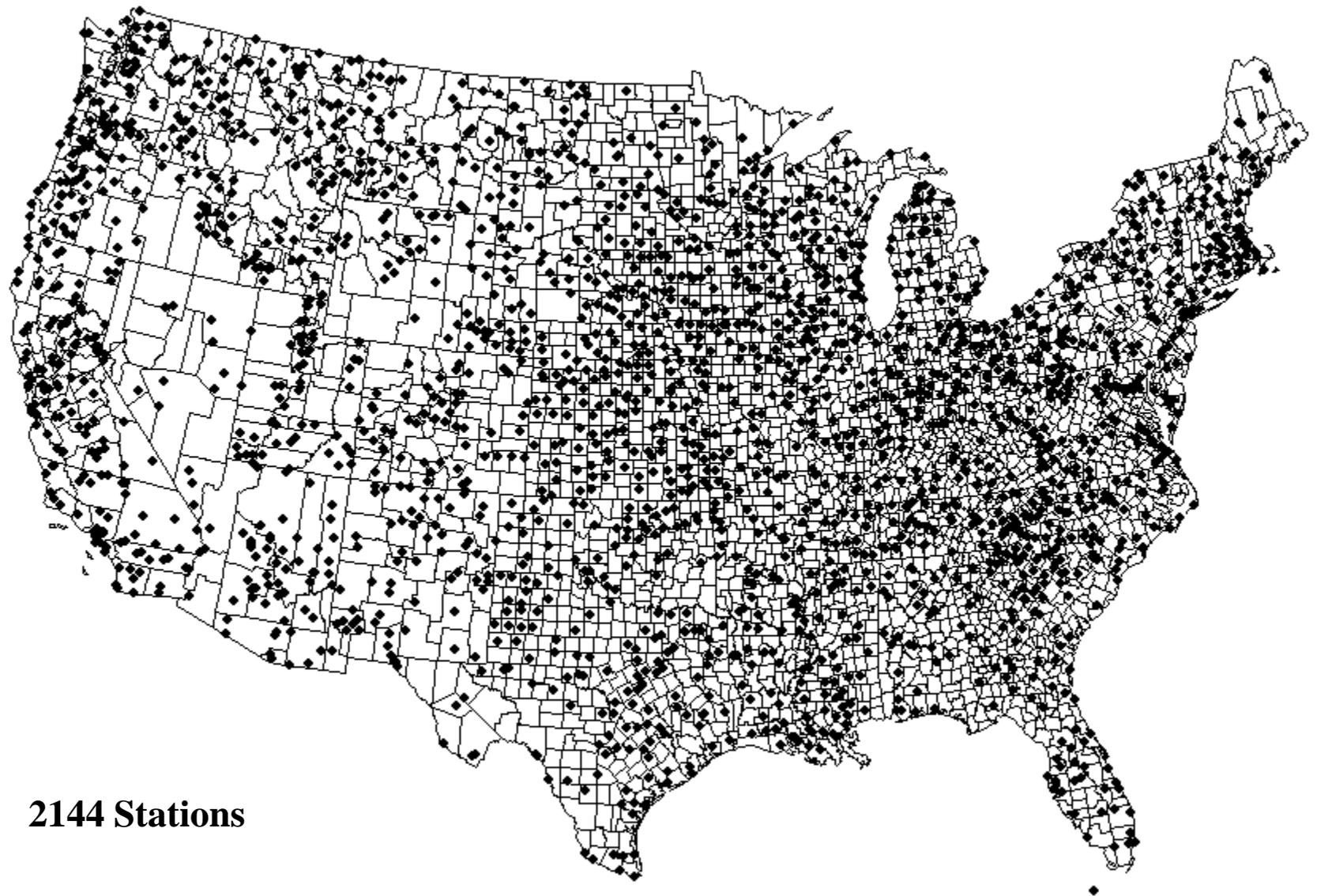
Drought Atlas: Understanding Past and Present Droughts and Future Risk

Mark Svoboda, Brian Fuchs, Dr. Michael Hayes, Dr. Jae Ryu, Soren Scott, and Jun Li, NDMC/UNL; Ned Guttman, NOAA/NCDC; Bill Sorenson and Jinsheng You, HPRCC/UNL; Ian Cottingham, CSE/UNL; Sandra Jones and Jeff Nothwehr, NDMC/UNL



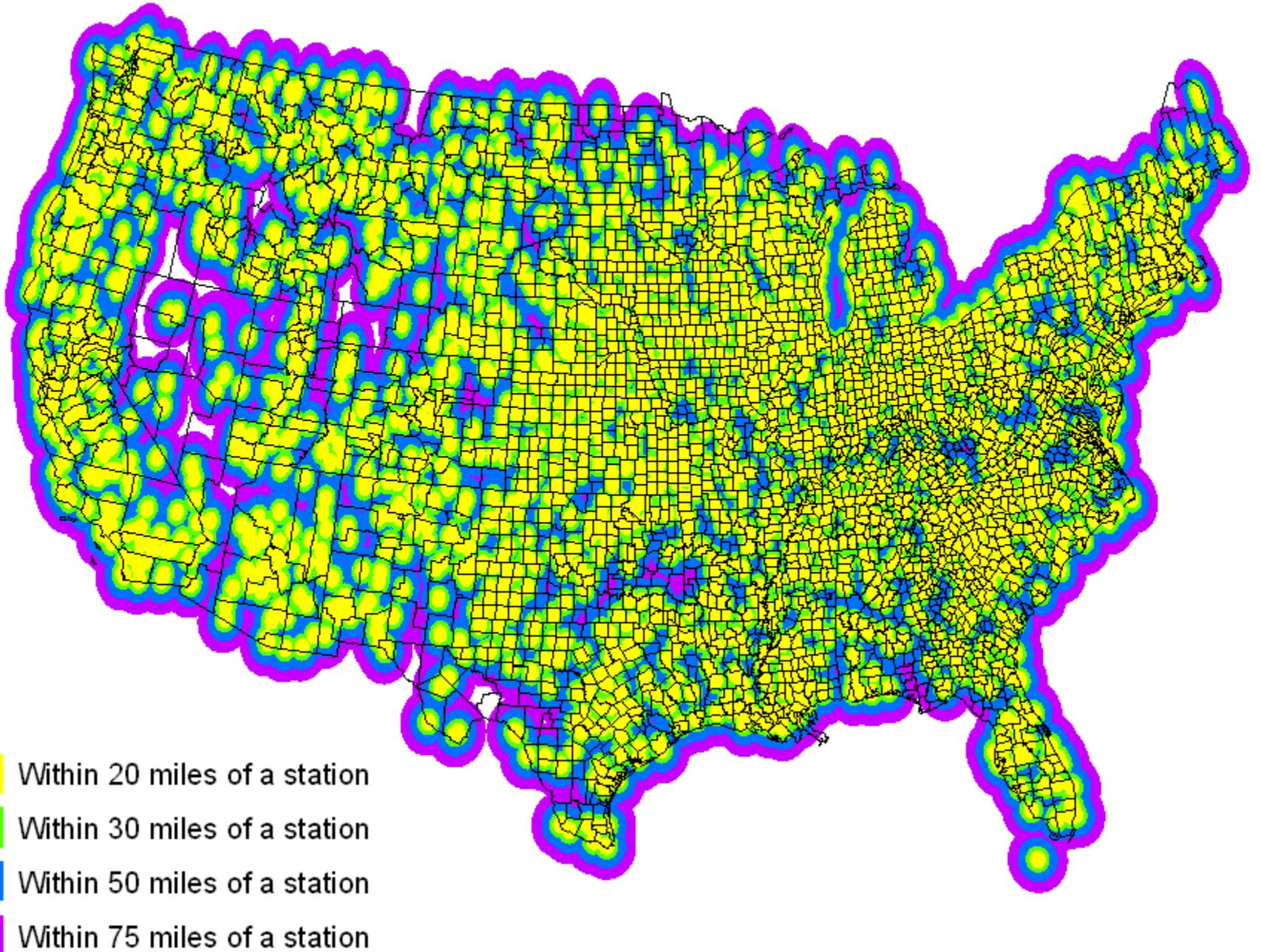
The goal of the atlas is to provide usable tools and products for users at all levels by giving them the ability to visualize and assess their drought risk through a variety of web-based options. The example above shows how producers and other decision makers can assess drought at a variety of time scales and at user-defined spatial levels.

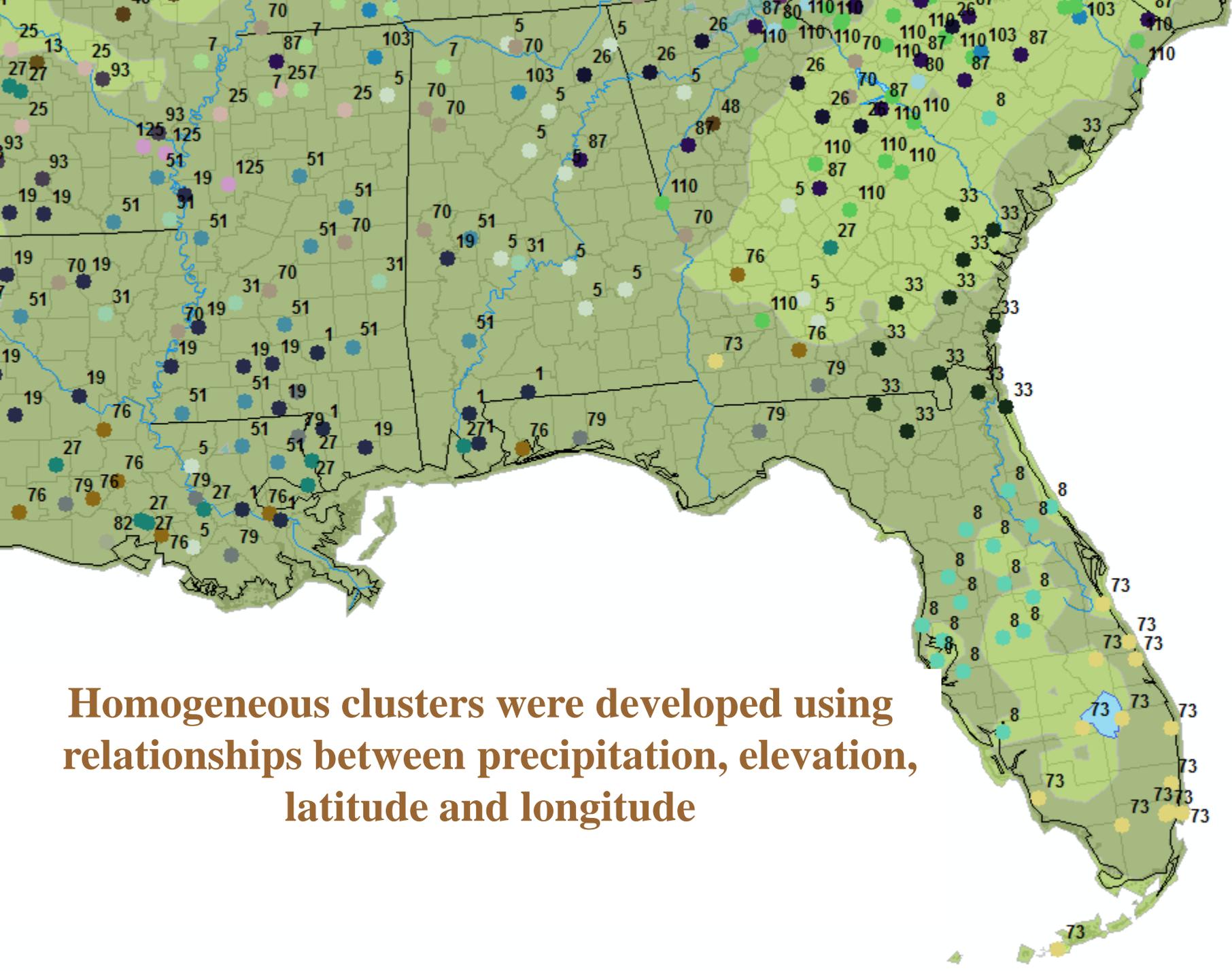
Stations with 40 Plus Years of Data



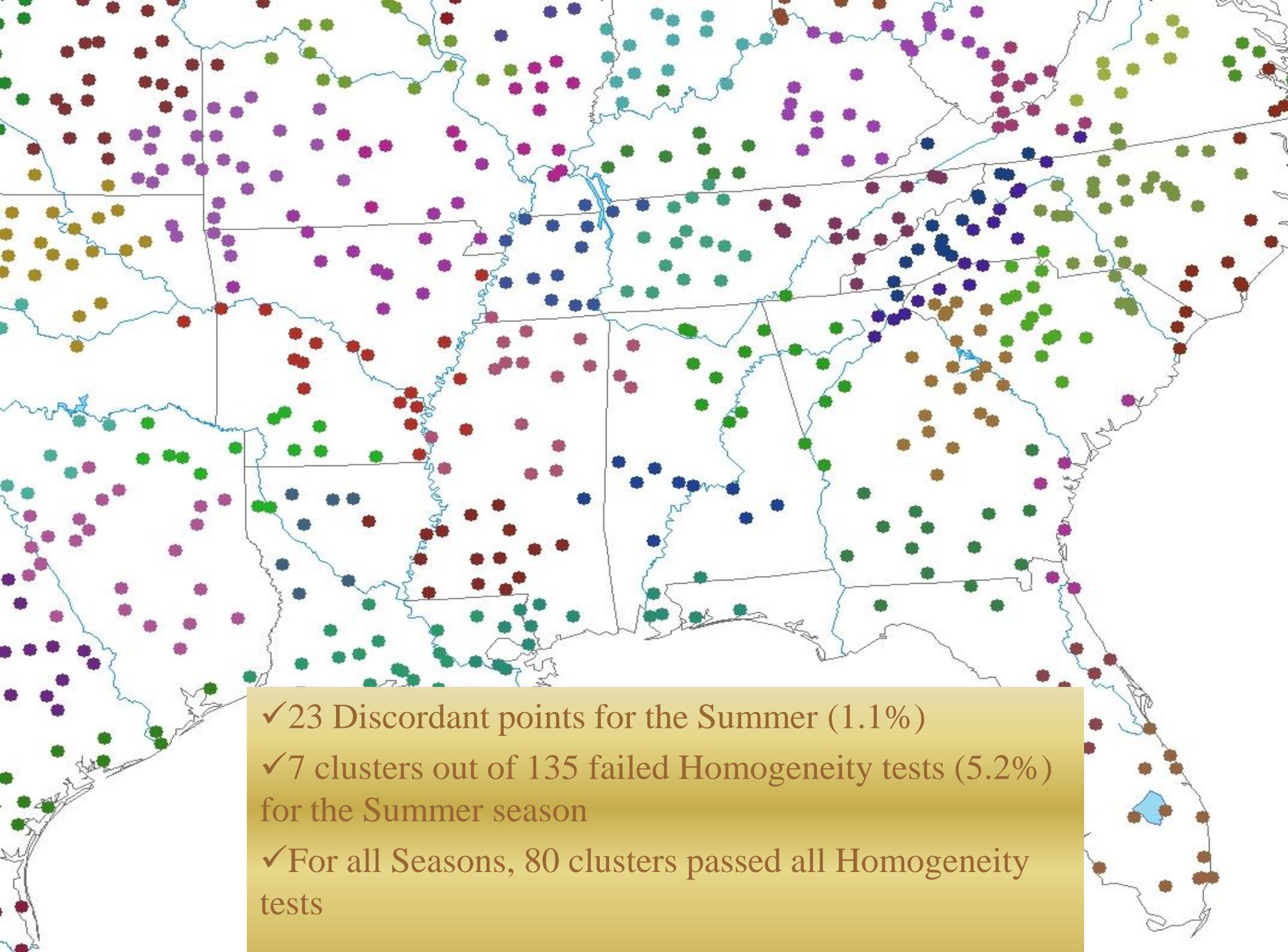
2144 Stations

Stations with 40 Plus Years of Data Buffers



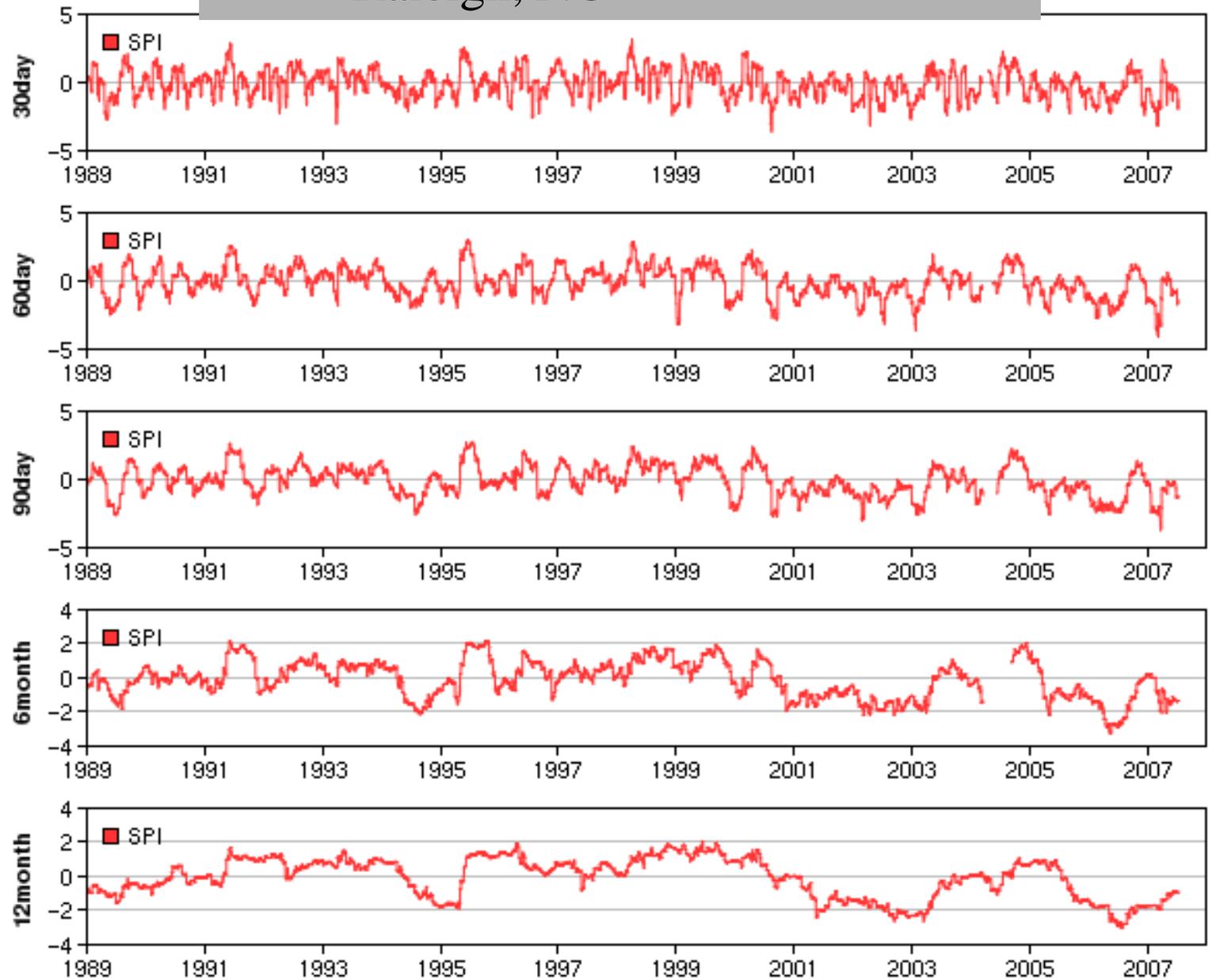


Homogeneous clusters were developed using relationships between precipitation, elevation, latitude and longitude



✓ 23 Discordant points for the Summer (1.1%)
✓ 7 clusters out of 135 failed Homogeneity tests (5.2%)
for the Summer season
✓ For all Seasons, 80 clusters passed all Homogeneity tests

Raleigh, NC



Some Examples of Decision Making Using the DM

- USDA Dried Milk Program 2002-03
- USDA CRP Release hot spot trigger
- Numerous states use as a drought trigger (Governor's declarations)
- 2006-07 USDA Livestock Assistance
- 2006-07 IRS (tax deferral on livestock losses)
- 2008 Farm Bill
- NWS Drought Information Statements

What Resolution of the United States Drought Monitor is the most Useful to you?

- X** A. National
- X** B. Regional
- X** C. County
- X** D. Sub-County

✓ [Default]

X [MC Any]

X [MC All]

National Drought Mitigation Center

University of Nebraska–Lincoln



The National Drought Mitigation Center (NDMC) helps people and institutions develop and implement measures to reduce societal vulnerability to drought. The NDMC, based at the University of Nebraska–Lincoln, stresses preparation and risk management rather than crisis management.

What is Drought?

An overview of drought • Climographs • Historical Palmer Drought index maps and graphs • Drought and El Niño • The Dust Bowl

Planning for Drought

How (and why) to plan for drought • The 10-Step Planning Process • Directory of drought planning contacts

Monitoring Drought

How to select monitoring tools • The SPI, the U.S. Drought Monitor, and links to tools elsewhere on the web

Understanding Your Risk

Understanding drought's impacts • Drought Impacts in the United States • Drought impacts around the world

Mitigating Drought

Putting a drought plan together • Existing drought plans and studies • Drought mitigation tools/initiatives • Water conservation

About the NDMC
Contact Information
What's New
Site Map
Search the Site
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Publications
Photo Gallery



Drought for Kids

For Media

Other Drought-related Sites

U.S. Drought Monitor

NDMC's Drought Impact Reporter

Thank you!

Please visit us at:
<http://drought.unl.edu/>

Please contact me at:

bfuchs2@unl.edu
402-472-6775

UNIVERSITY OF
Nebraska
Lincoln



DM/DSS Discussion Questions

- ❖ What features did you like most from what were presented to you about the DM/DSS?
- ❖ What features are lacking or what would you like to see in the DM/DSS that are not currently there or proposed to be there?
- ❖ How do you currently use the information provided on the United States Drought Monitor now?
- ❖ Would a historical perspective of drought indices be helpful to compare current drought in magnitude and intensity?

DROUGHT MONITOR



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