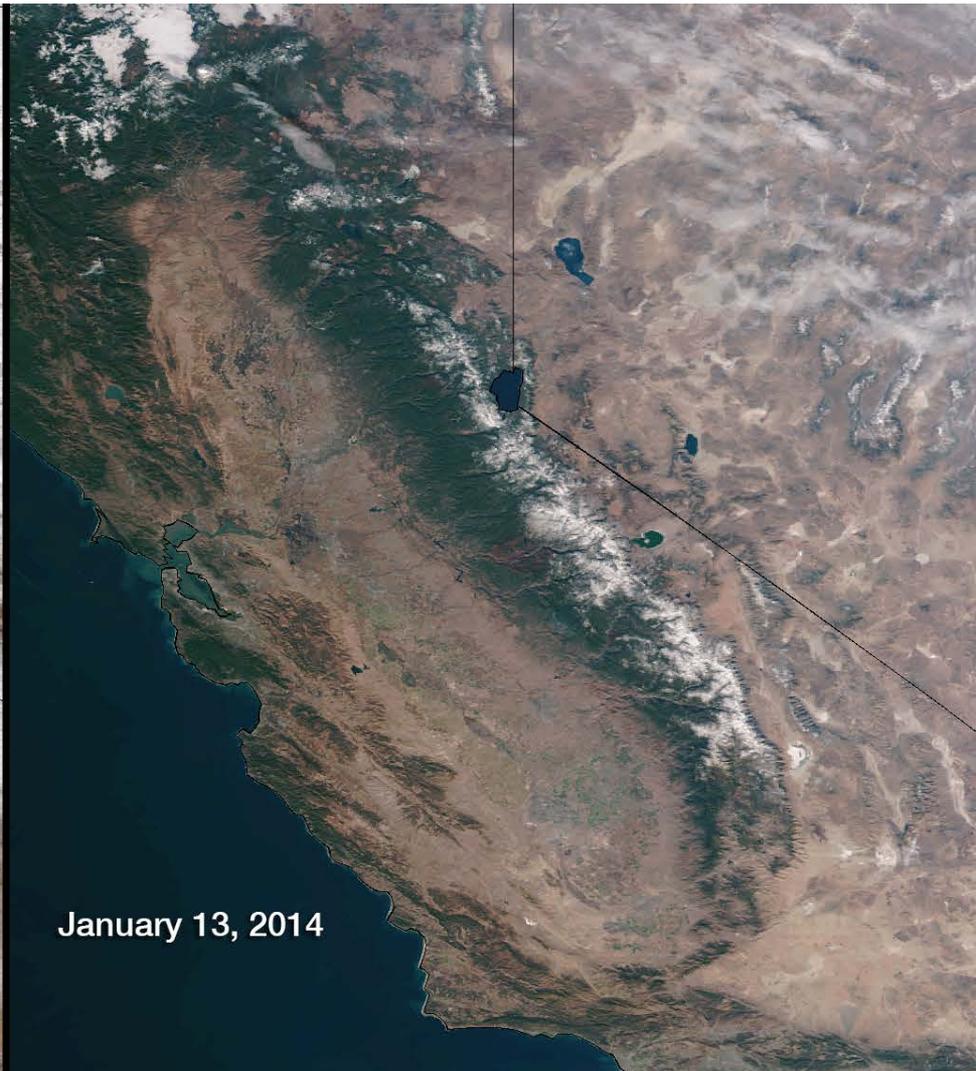
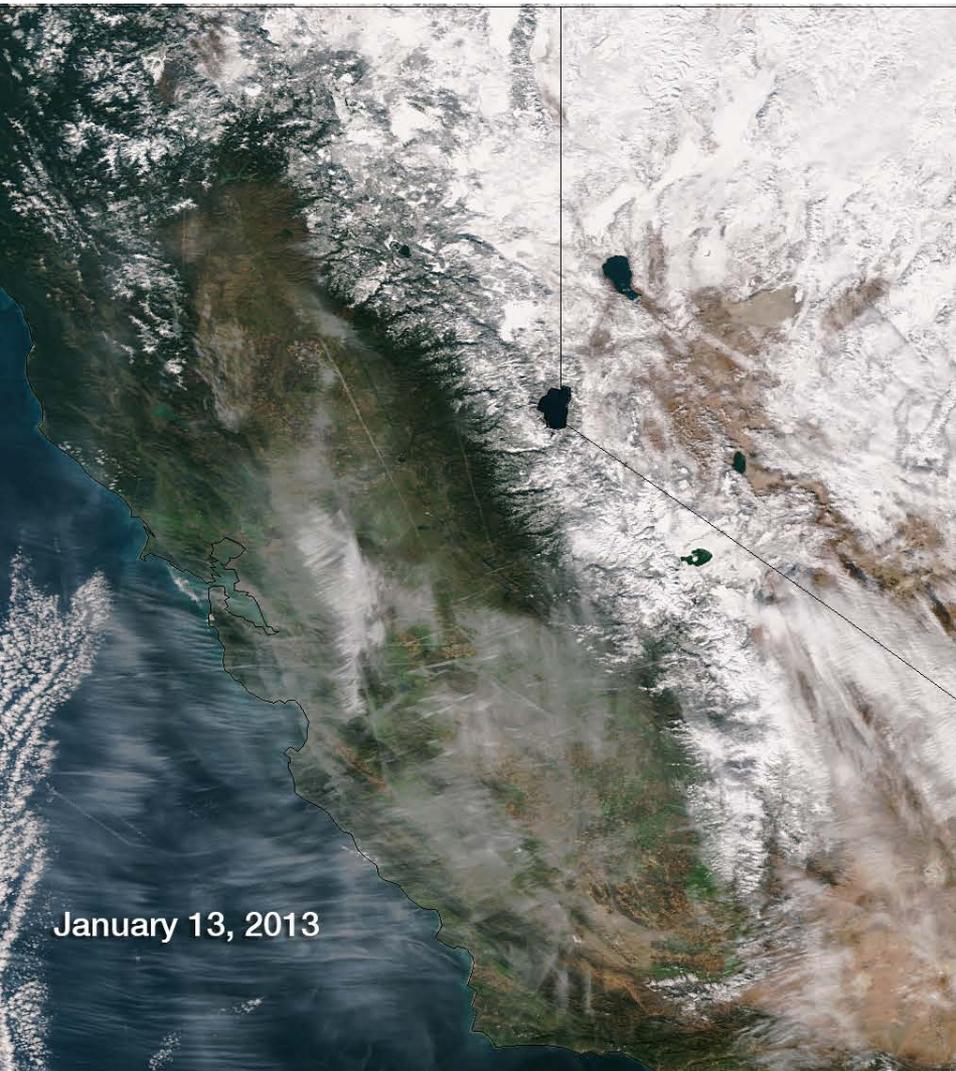


“The U.S. Drought of 2012-13 Lingers and Shifts Westward”

Brad Rippey, USDA Meteorologist, Washington, D.C.



**Agricultural Outlook Forum
Crystal Gateway Marriott Hotel
Arlington, Virginia, February 21, 2014**

Potential U.S. Trouble Spots, 2014 Growing Season

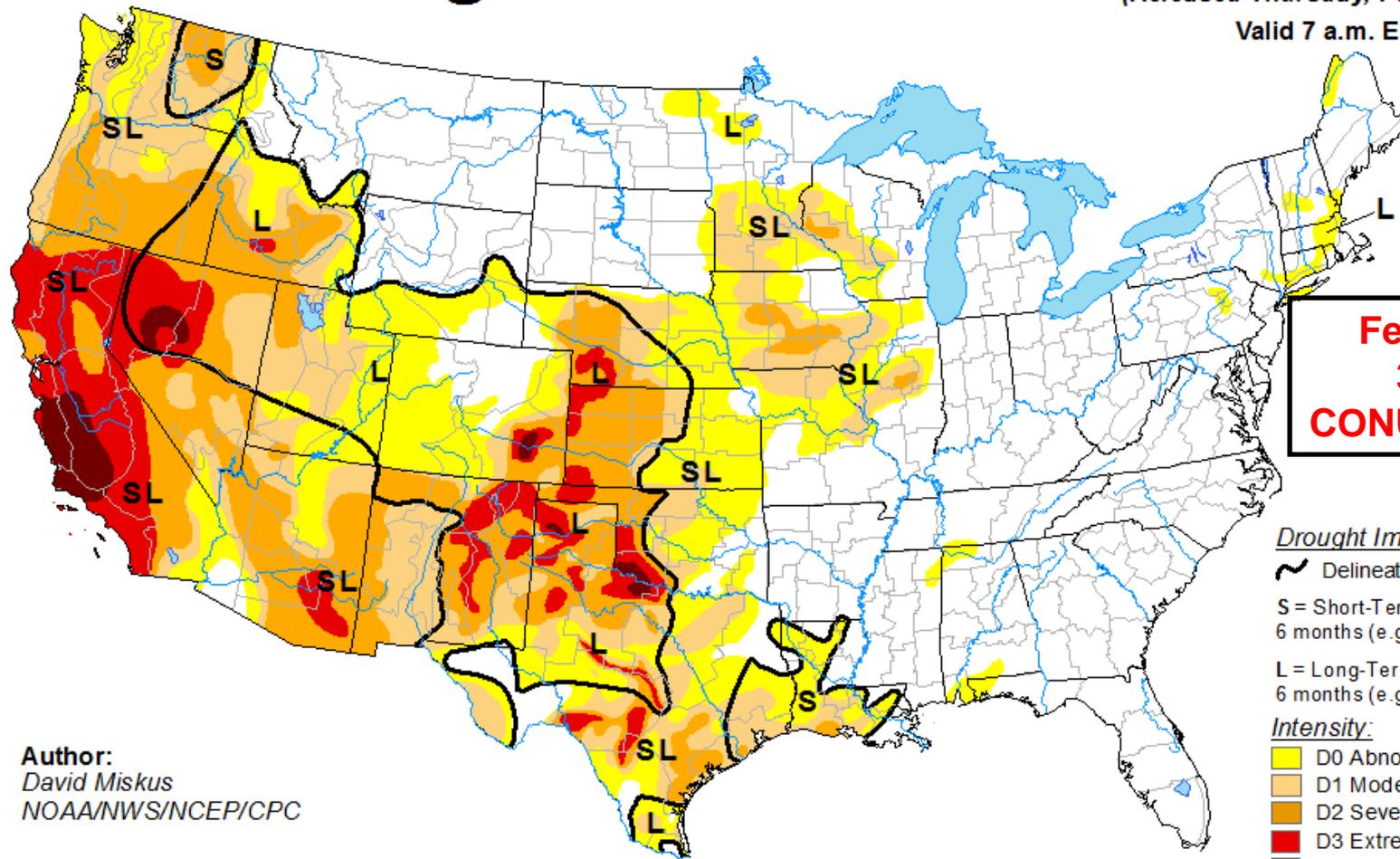
- **California** (third year of drought; depleted soil moisture; diminishing water supplies)
- **Great Basin, Southwest** (see California)
- **Southern Great Plains** (fourth year of drought?; drought-damaged rangeland; subsoil moisture shortages)
- **Corn Belt** (lingering drought in Upper Midwest; wetness issues some places?)
- **Western Gulf Coast** (trending dry)

**Sep. 10, 2013:
summer peak,
with 50.69% of
CONUS in drought.**

U.S. Drought Monitor

February 18, 2014
(Released Thursday, Feb. 20, 2014)

Valid 7 a.m. EST



**Feb. 18, 2014:
35.73% of
CONUS in drought.**

Author:
David Miskus
NOAA/NWS/NCEP/CPC

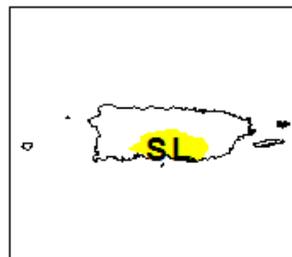
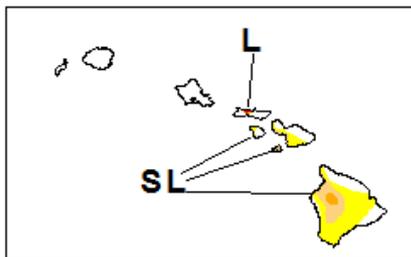
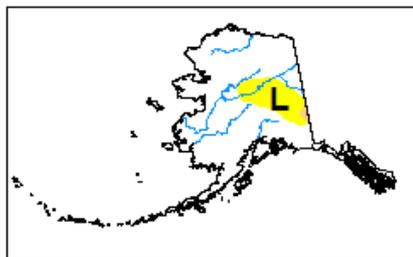
Drought Impact Types:

- ~ 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:

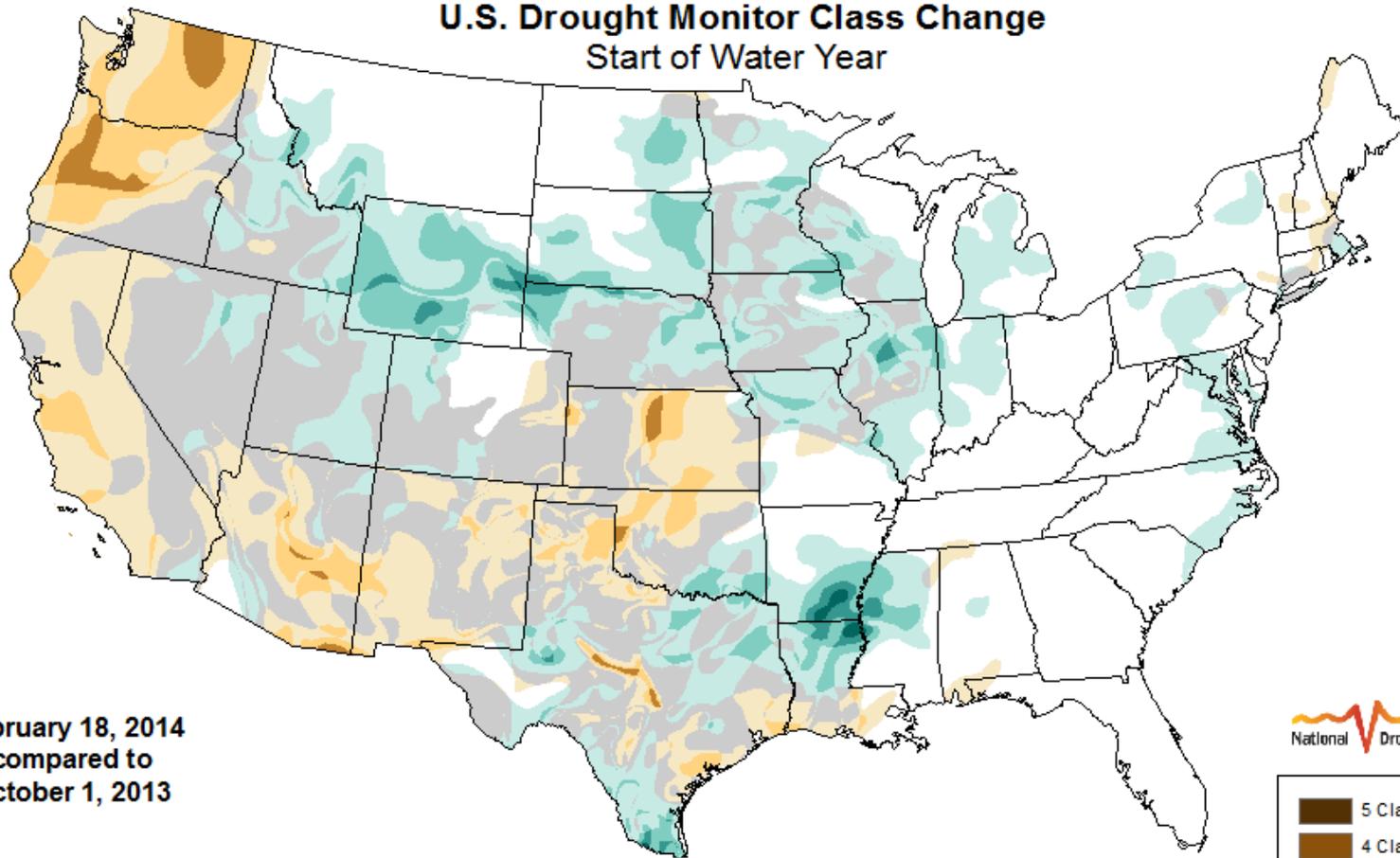
- Yellow: D0 Abnormally Dry
- Light Orange: D1 Moderate Drought
- Dark Orange: D2 Severe Drought
- Red: D3 Extreme Drought
- Dark Red: D4 Exceptional Drought

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



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

U.S. Drought Monitor Class Change Start of Water Year

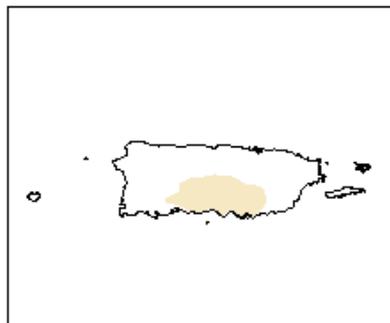
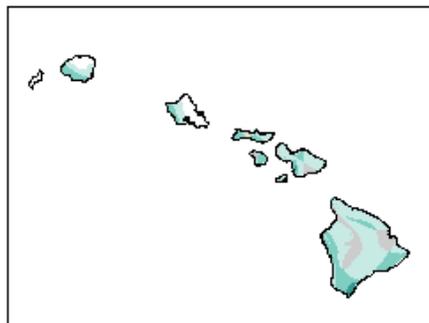
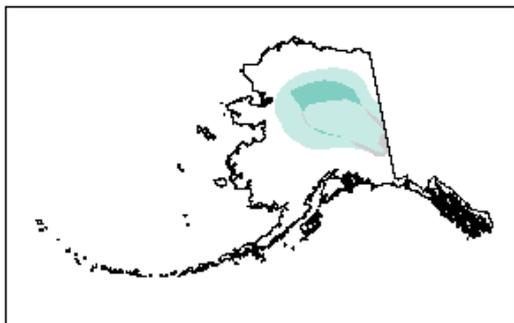


February 18, 2014
compared to
October 1, 2013



National Drought Mitigation Center

-  5 Class Degradation
-  4 Class Degradation
-  3 Class Degradation
-  2 Class Degradation
-  1 Class Degradation
-  No Change
-  1 Class Improvement
-  2 Class Improvement
-  3 Class Improvement
-  4 Class Improvement
-  5 Class Improvement



Percentiles and the U.S. Drought Monitor

- Advantages of percentiles:
 - Can be applied to any parameter
 - Can be used for any length of data record
 - Puts drought in historical perspective
- D4, Exceptional Drought:  once per 50 to 100 years
- D3, Extreme Drought:  once per 20 to 50 years
- D2, Severe Drought:  once per 10 to 20 years
- D1, Moderate Drought:  once per 5 to 10 years
- D0, Abnormally Dry:  once per 3 to 5 years

California Agricultural Production Statistics, 2012

- The state's 80,500 farms and ranches received a record \$44.7 billion for their output in 2012, up from \$43.3 billion in 2011 and \$37.9 billion in 2010.
- California is the number one state in cash farm receipts with 11.3 percent of the U.S. total.
- The state accounted for 15 percent of domestic receipts for crops and 7.1 percent of the U.S. revenue for livestock and livestock products.

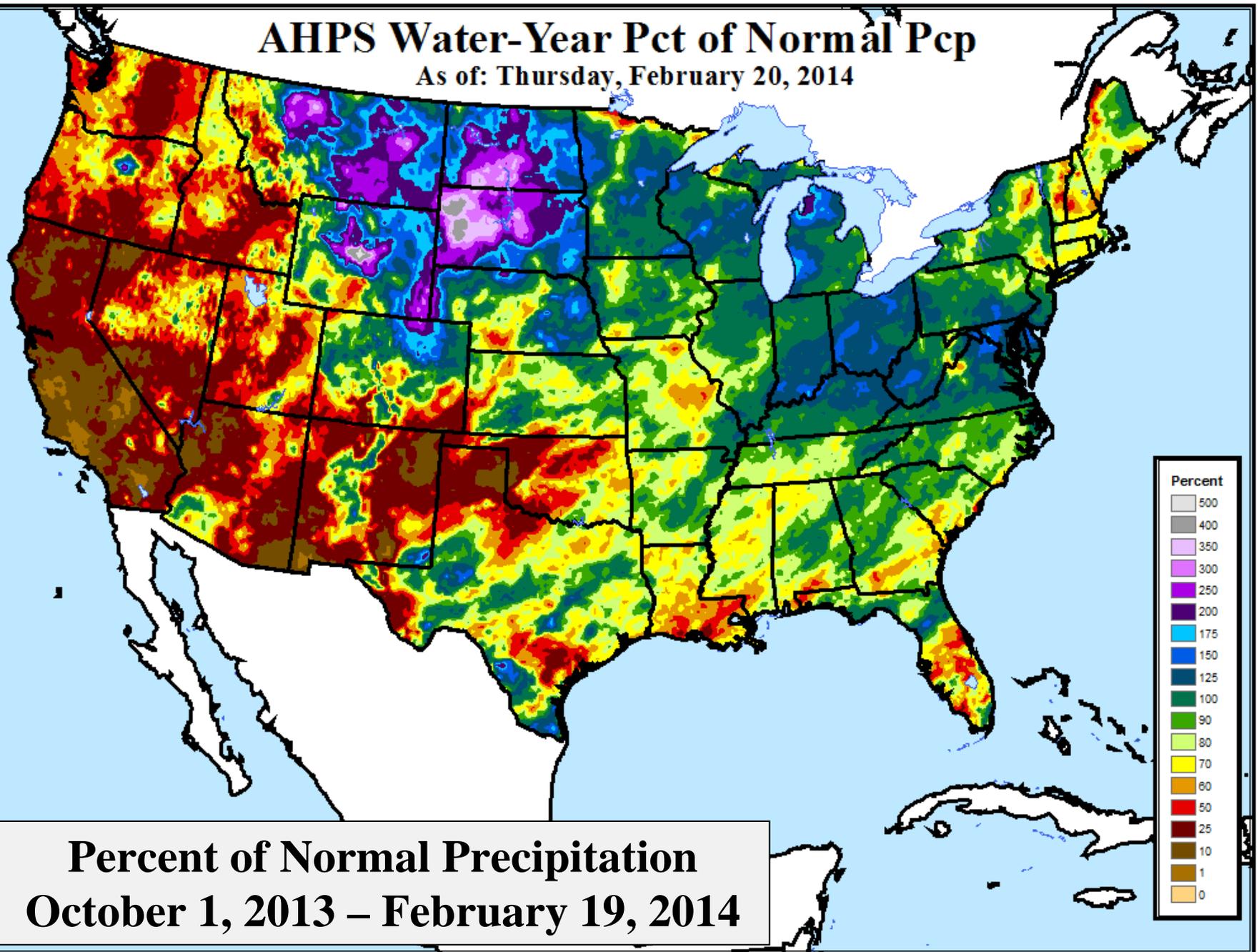
California Agricultural Production Statistics, 2012

- Milk: \$6.90 billion
- Grapes: \$4.45 billion
- Almonds: \$4.35 billion
- Nursery plants:
\$3.54 billion
- Cattle, Calves:
\$3.30 billion
- Strawberries:
\$1.94 billion
- Lettuce: \$1.45 billion
- Walnuts: \$1.35 billion
- Hay: \$1.25 billion
- Tomatoes:
\$1.17 billion

Note: These ten commodities accounted for approximately two-thirds of California's agricultural cash receipts in 2012.

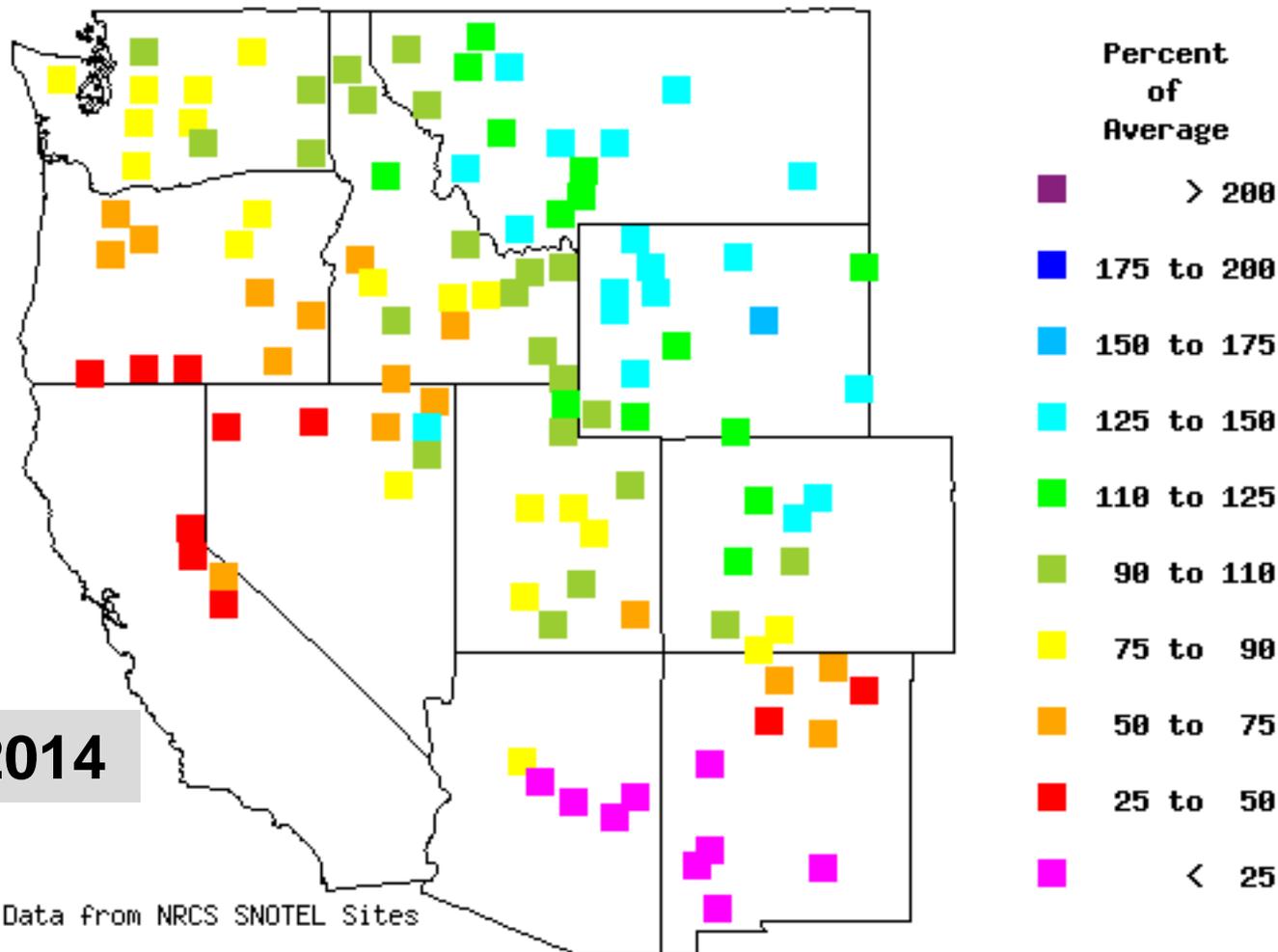
AHPS Water-Year Pct of Normal Pcp

As of: Thursday, February 20, 2014



SNOTEL – River Basin Snow Water Content

Basin Average Snow Water Content. (% of Average.)



Report Date:

Feb. 19, 2014

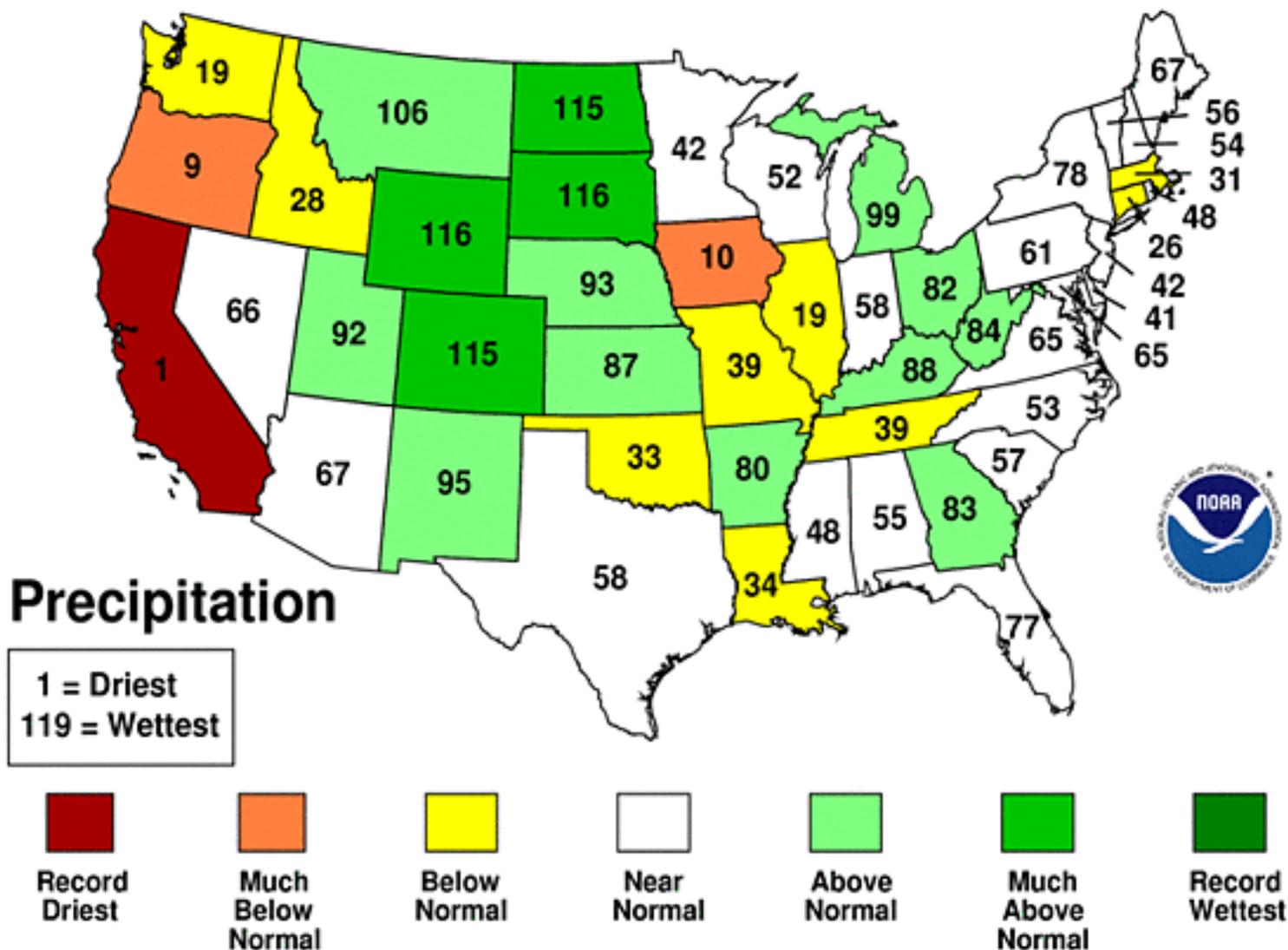
Provisional Data
Based on Mountain Data from NRCS SNOTEL Sites

Data provided by
Water and Climate Center
Natural Resources Conservation Service
Portland, Oregon

Western Regional Climate Center
Desert Research Institute
Reno, Nevada

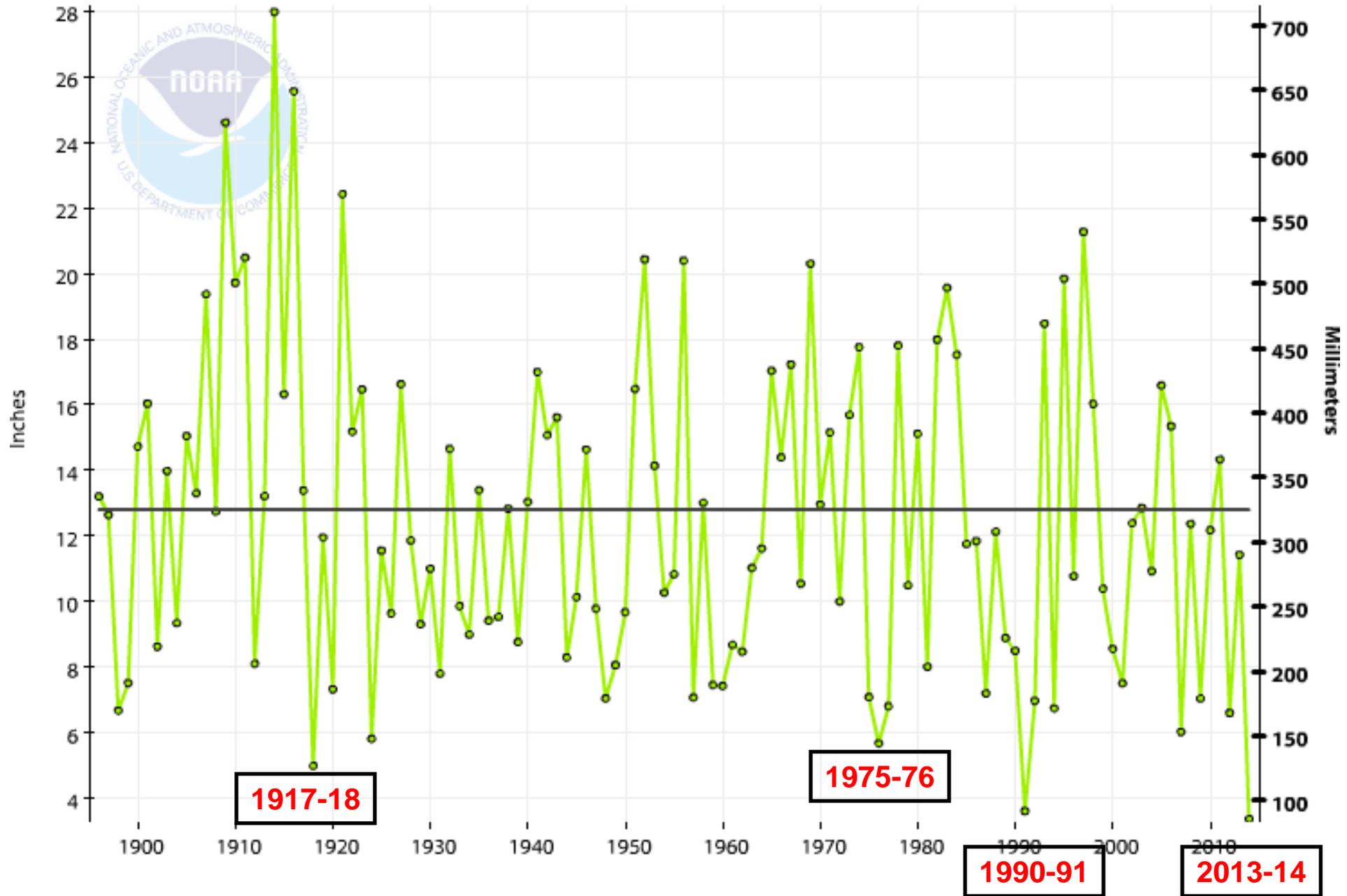
Aug 2013-Jan 2014 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



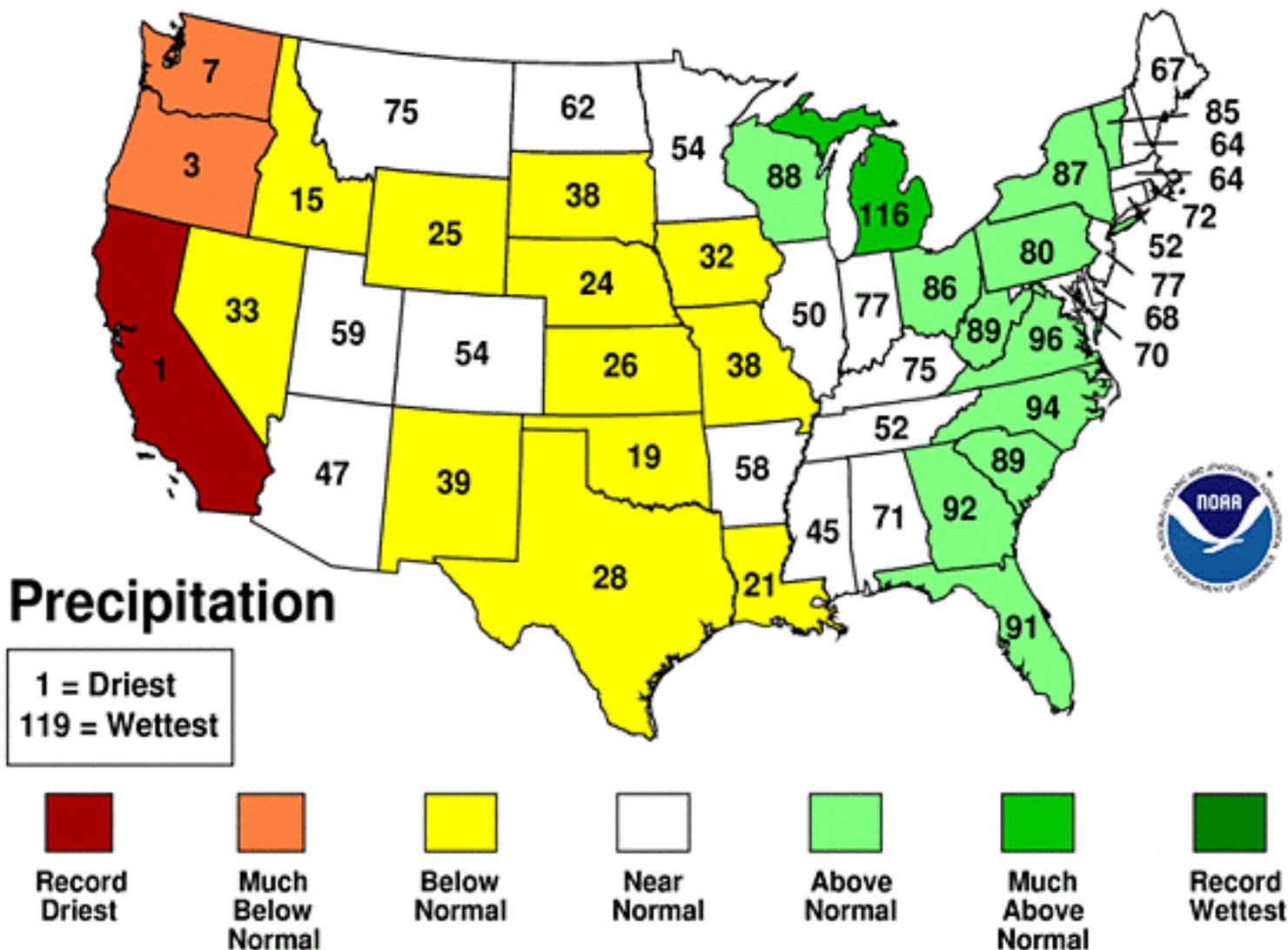
California, Precipitation, August-January

— 1901-2000
Avg: 12.83" —○— Precip

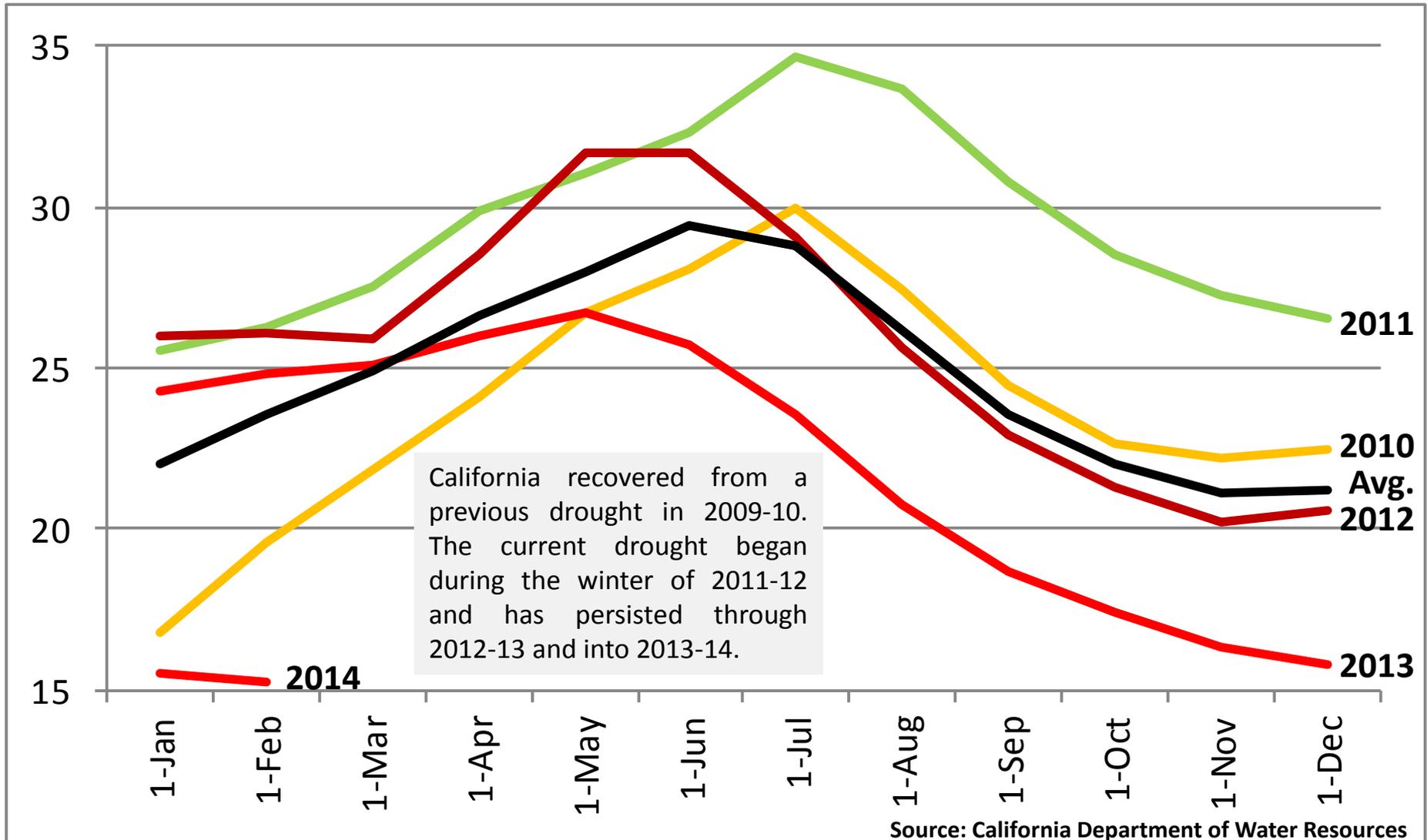


Nov 2013-Jan 2014 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA

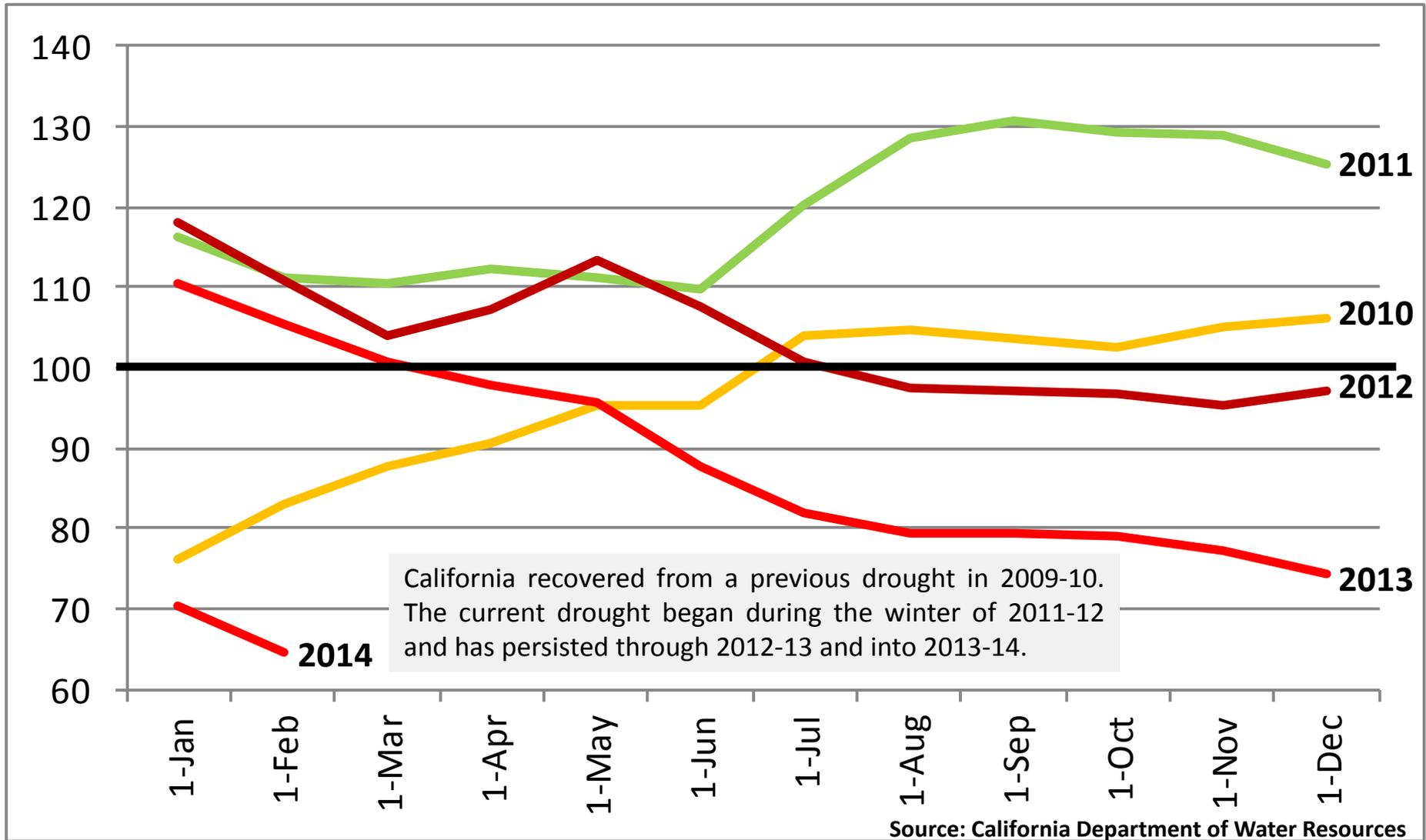


California Reservoir Storage, Million Acre-Feet, 2010-14



Note: One acre-foot is equal to 325,851 gallons, or the amount of water it takes to cover one acre to a depth of one foot. California's reservoir storage is down nearly 20 million acre-feet, or about 6.35 trillion gallons, since the summer of 2011.

California Reservoir Storage, Percent of Normal, 2010-14



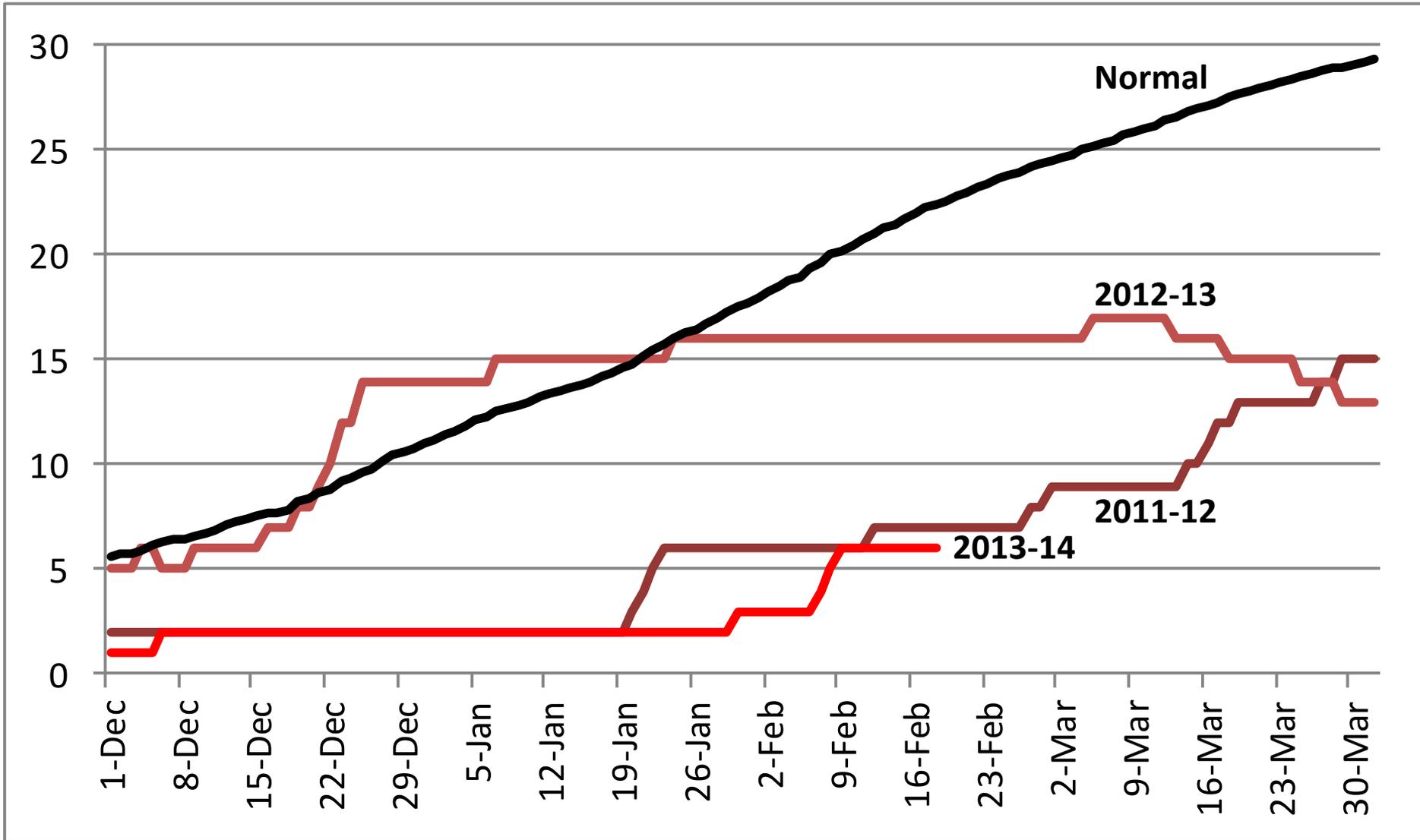
Source: California Department of Water Resources

California Reservoirs, Recharge and Withdrawal

Million Acre-Feet and Percent of Average

| | <u>Recharge</u> | | <u>Withdrawal</u> |
|----------------|-----------------|-------------|-------------------|
| 2010-11 | 12.5 (151%) | 2011 | 8.8 (107%) |
| 2011-12 | 5.8 (70%) | 2012 | 11.5 (140%) |
| 2012-13 | 6.5 (79%) | 2013 | 11.2 (136%) |
| 2013-14 | TBD | 2014 | TBD |
| Avg. | 8.2 | Avg. | 8.2 |

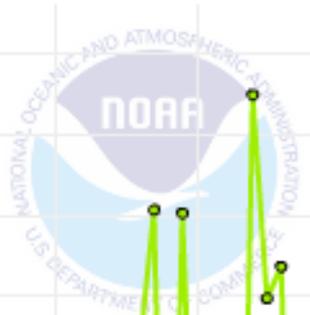
Daily Sierra Nevada Snowpack (Inches) vs. Normal



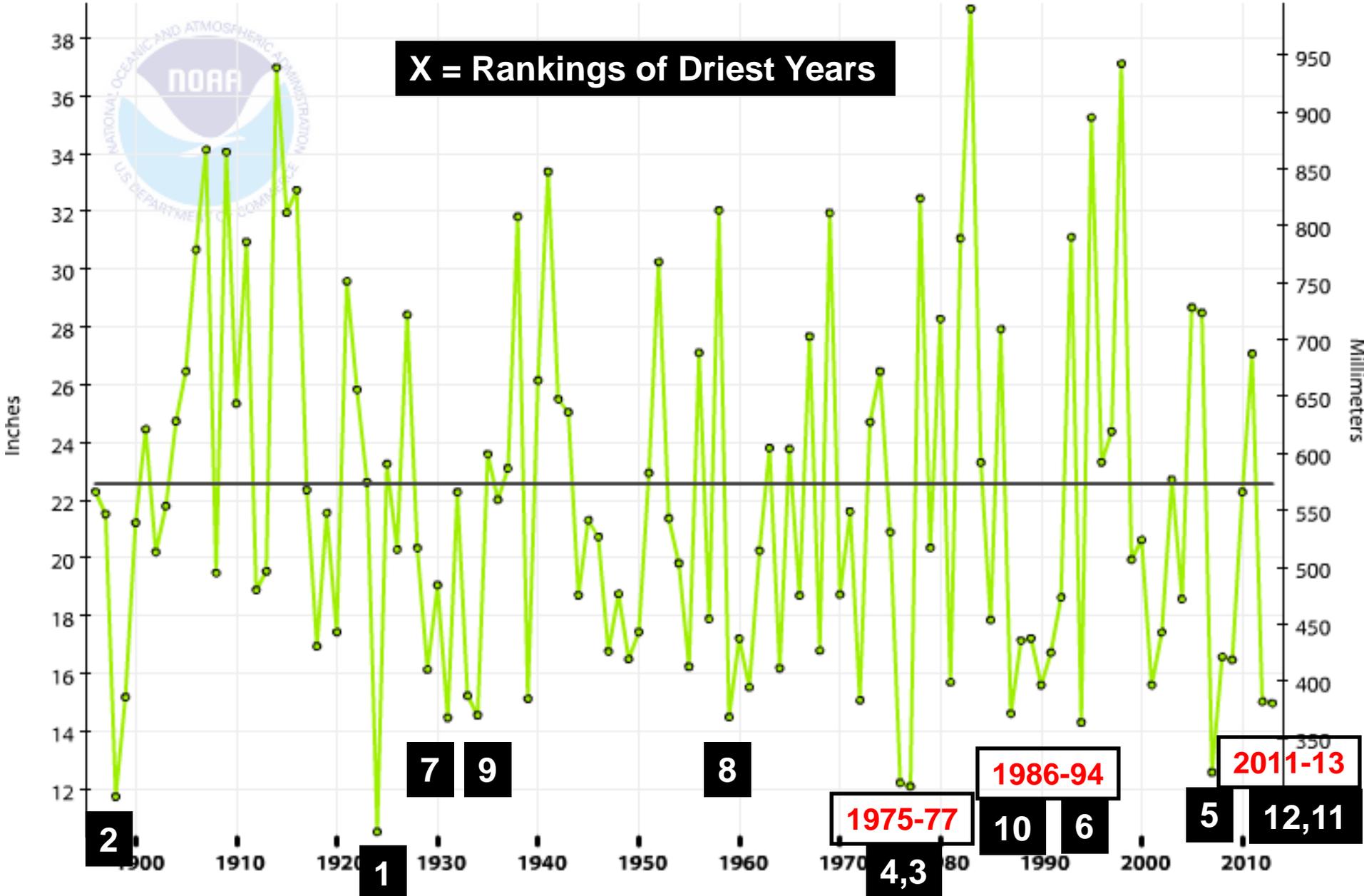
Source: California Department of Water Resources

California, Precipitation, July-June

— 1901-2000 Avg: 22.57" ●— Precip



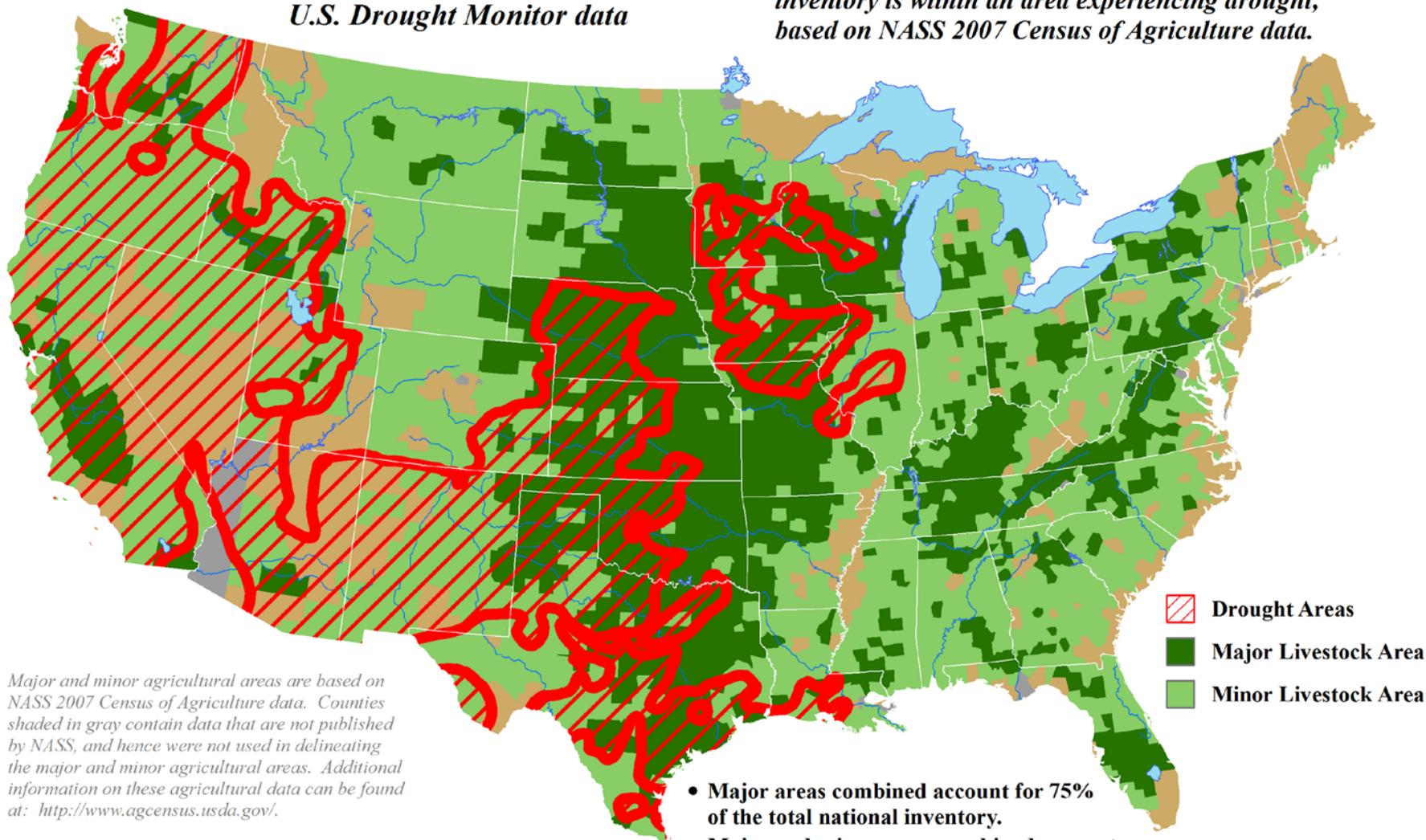
X = Rankings of Driest Years



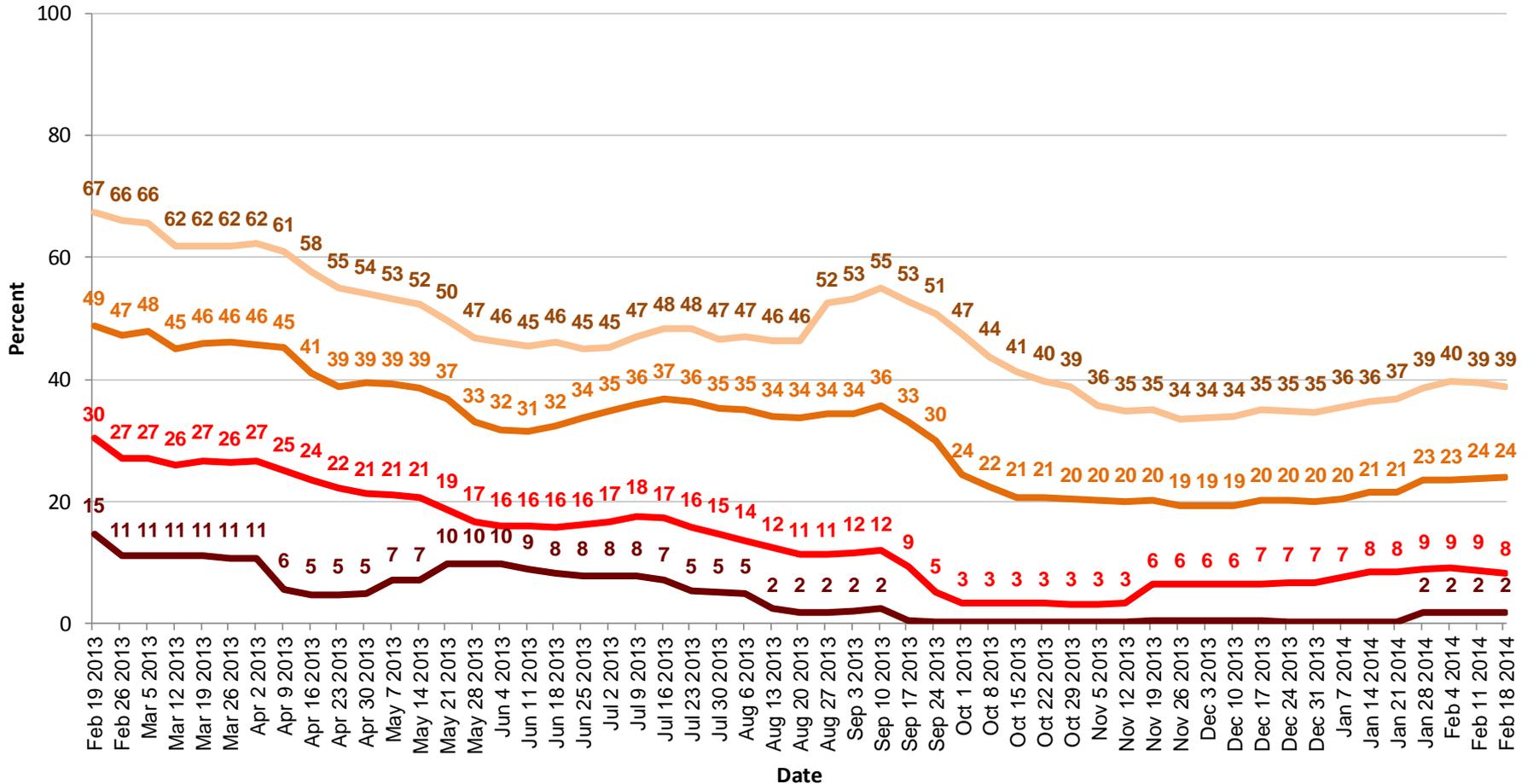
U.S. Cattle Areas Experiencing Drought

Reflects February 18, 2014
U.S. Drought Monitor data

Approximately 39% of the domestic cattle
inventory is within an area experiencing drought,
based on NASS 2007 Census of Agriculture data.



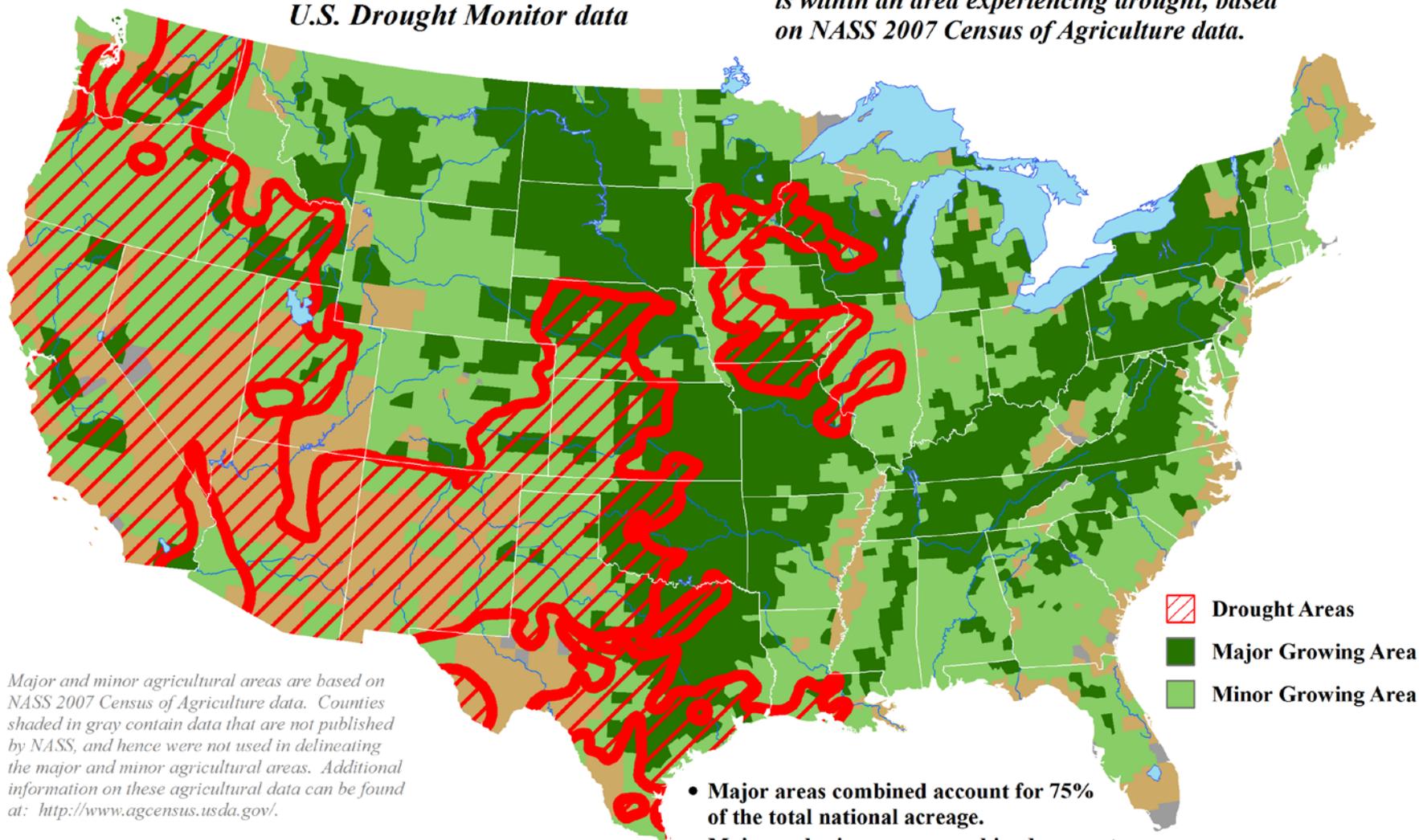
United States Cattle Areas Located in Drought



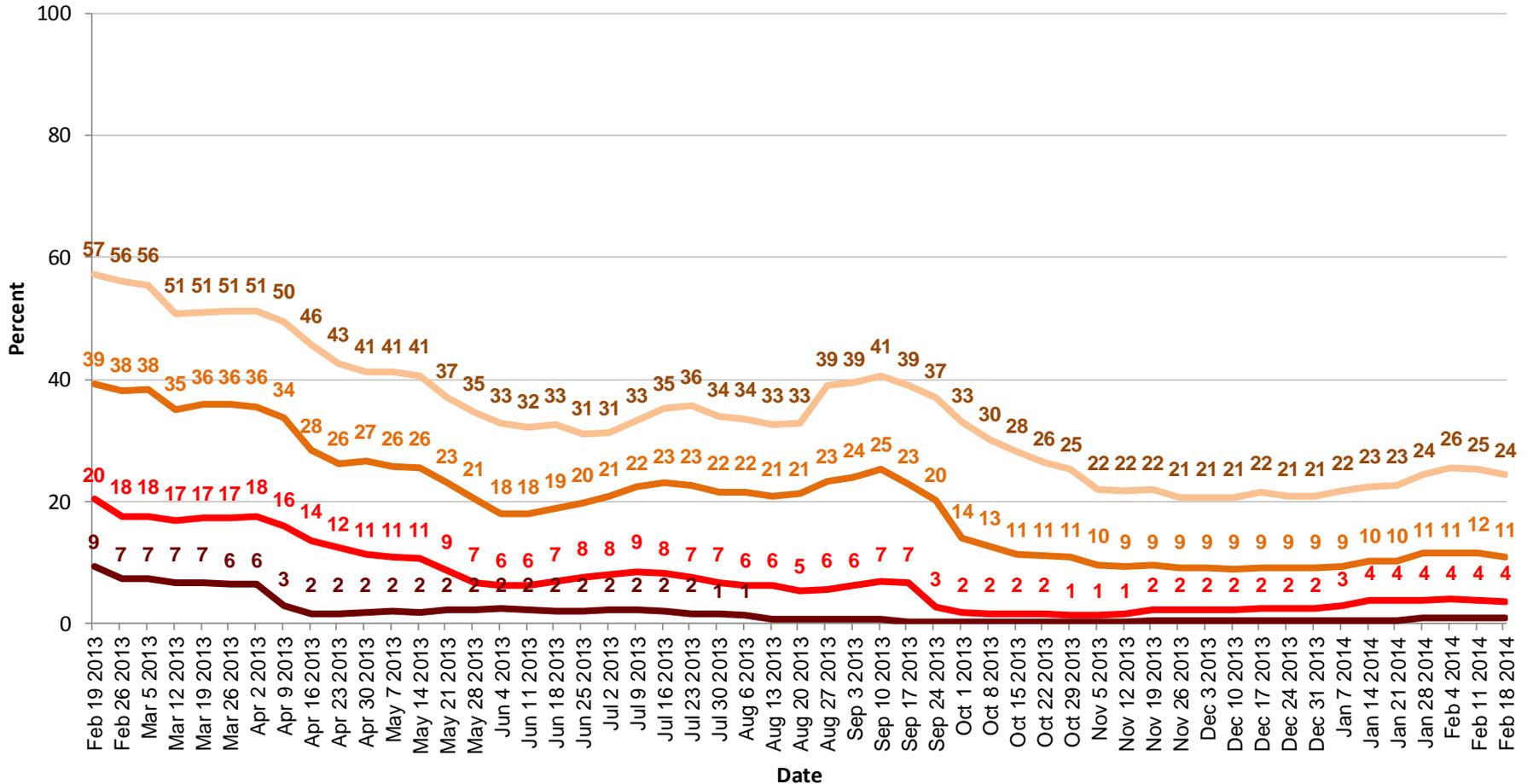
U.S. Hay Areas Experiencing Drought

Reflects February 18, 2014
U.S. Drought Monitor data

Approximately 24% of the domestic hay acreage
is within an area experiencing drought, based
on NASS 2007 Census of Agriculture data.



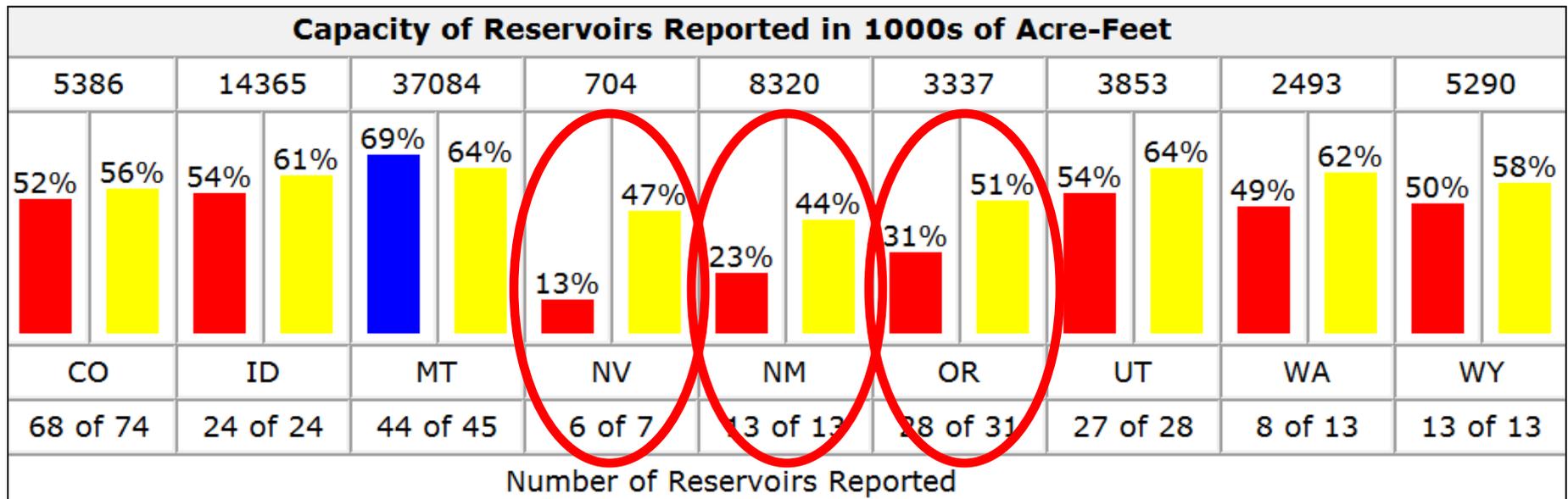
United States Hay Areas Located in Drought



Western Reservoir Situation

February 1, 2014

- Besides California, reservoir storage for this time of year is far below normal in Nevada, New Mexico, and Oregon.



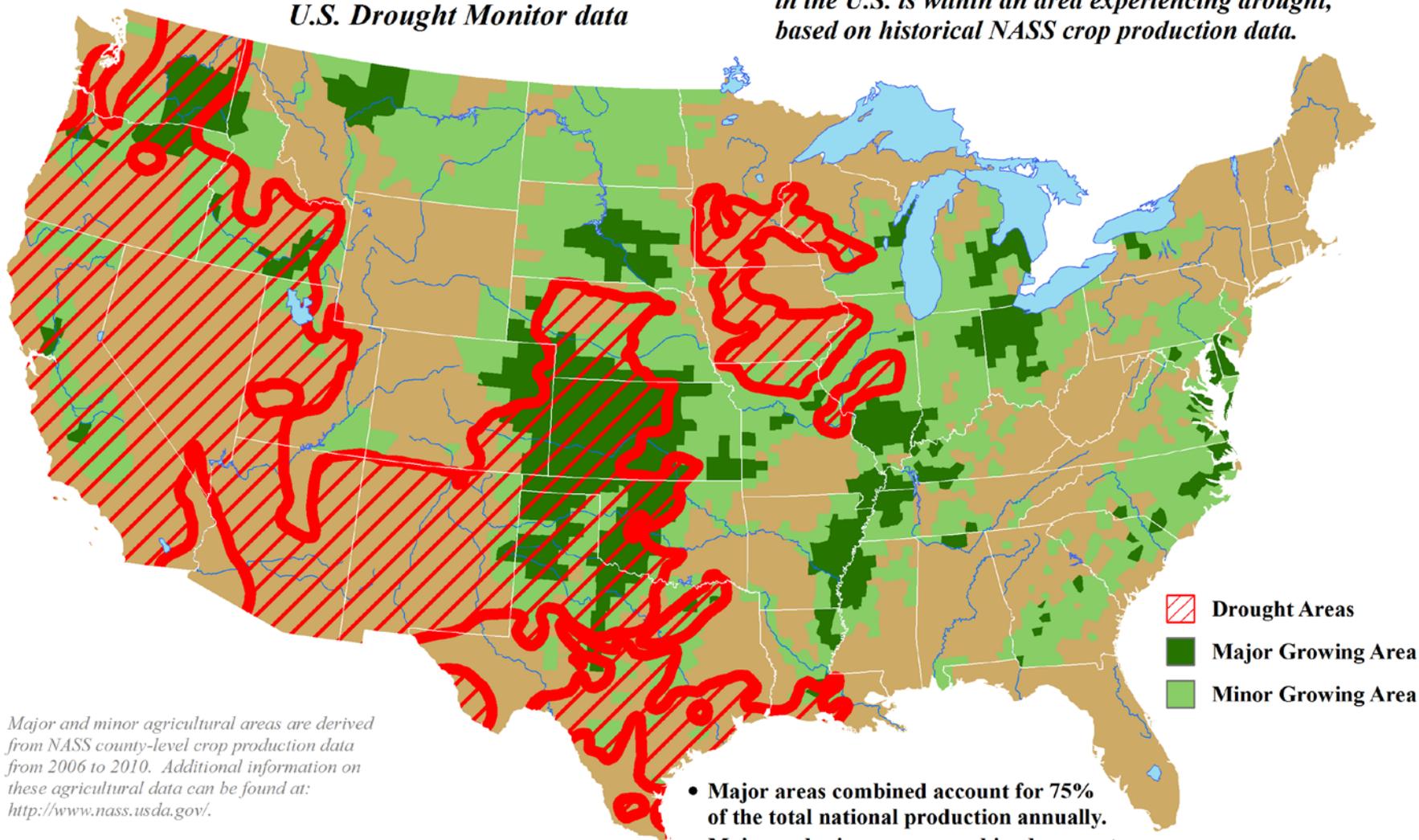
Potential U.S. Trouble Spots, 2014 Growing Season

- **California** (third year of drought; depleted soil moisture; diminishing water supplies)
- **Great Basin, Southwest** (see California)
- **Southern High Plains** (fourth year of drought?; drought-damaged rangeland; subsoil moisture shortages)
- **Corn Belt** (lingering drought in Upper Midwest; wetness issues farther east?)
- **Western Gulf Coast** (trending dry)

U.S. Winter Wheat Areas Experiencing Drought

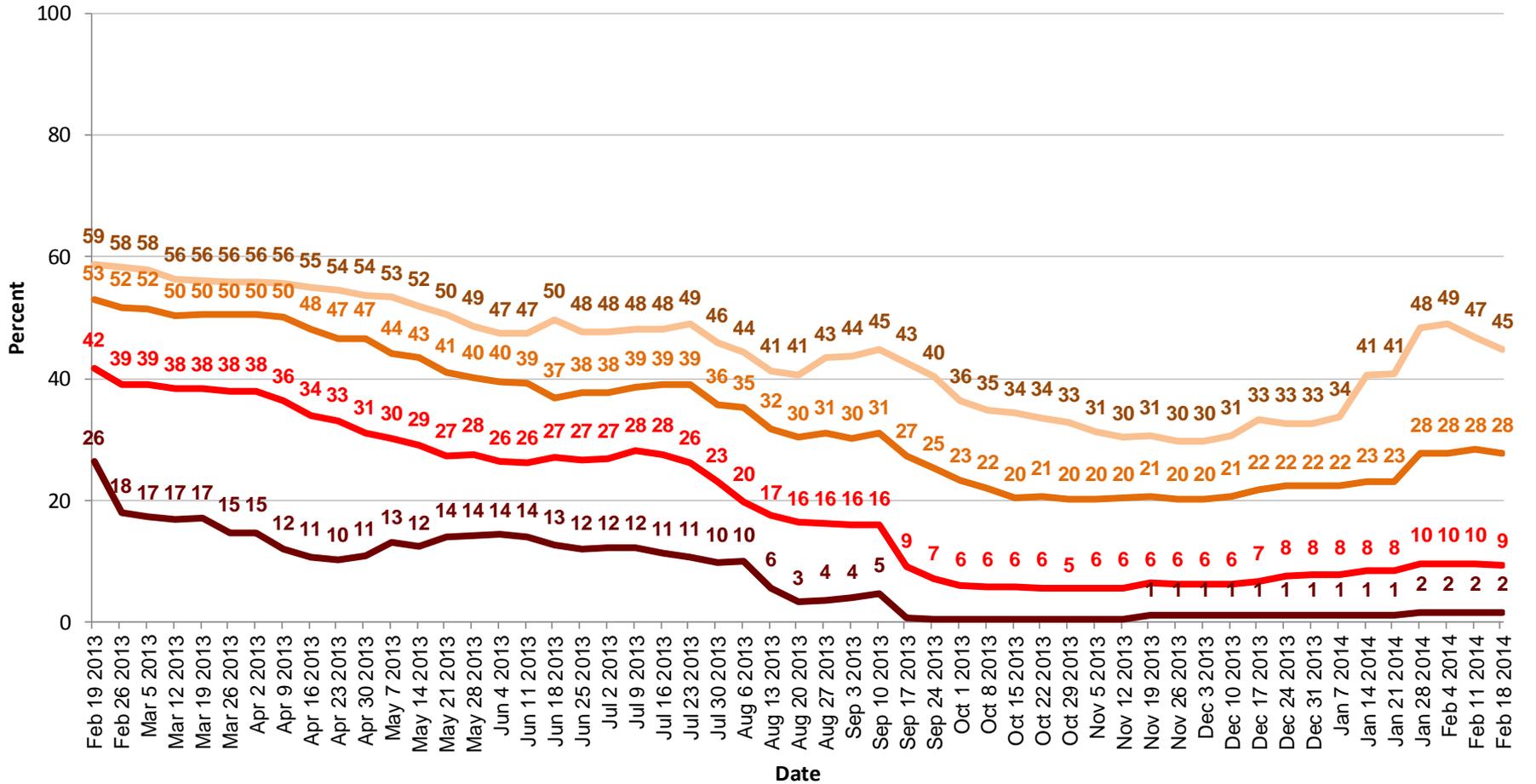
Reflects February 18, 2014
U.S. Drought Monitor data

Approximately 45% of the winter wheat grown
in the U.S. is within an area experiencing drought,
based on historical NASS crop production data.



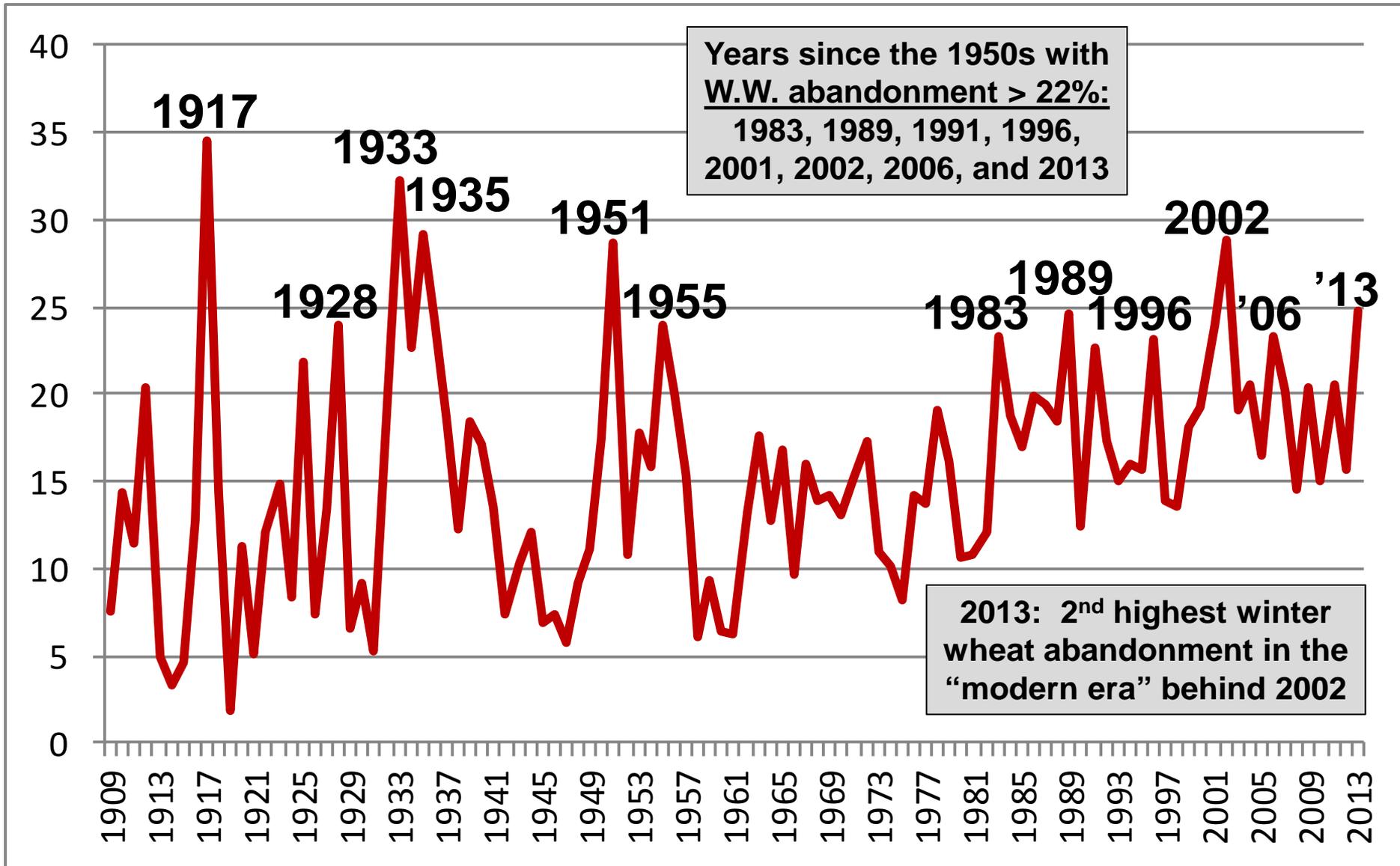
Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: <http://droughtmonitor.unl.edu/>.

United States Winter Wheat Areas Located in Drought



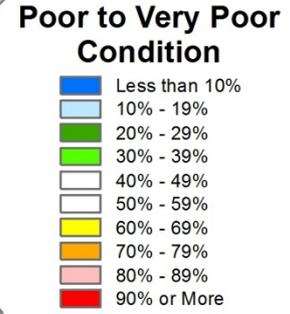
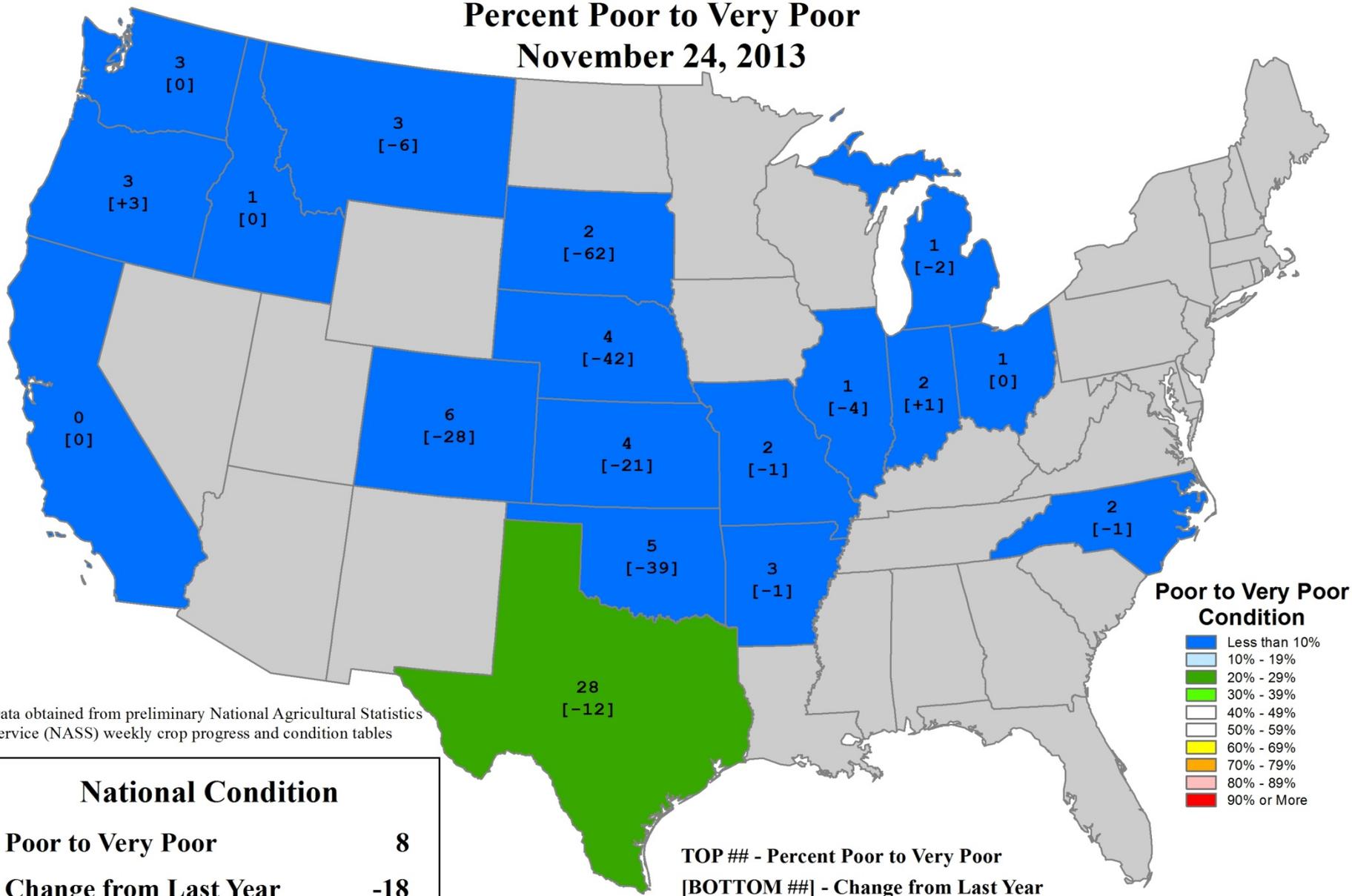
- Moderate or more intense drought (D1+)
- Severe or more intense drought (D2+)
- Extreme or more intense drought (D3+)
- Exceptional drought (D4)

Percent U.S. Winter Wheat Abandonment 1909-2013



U.S. Winter Wheat Conditions

Percent Poor to Very Poor
November 24, 2013

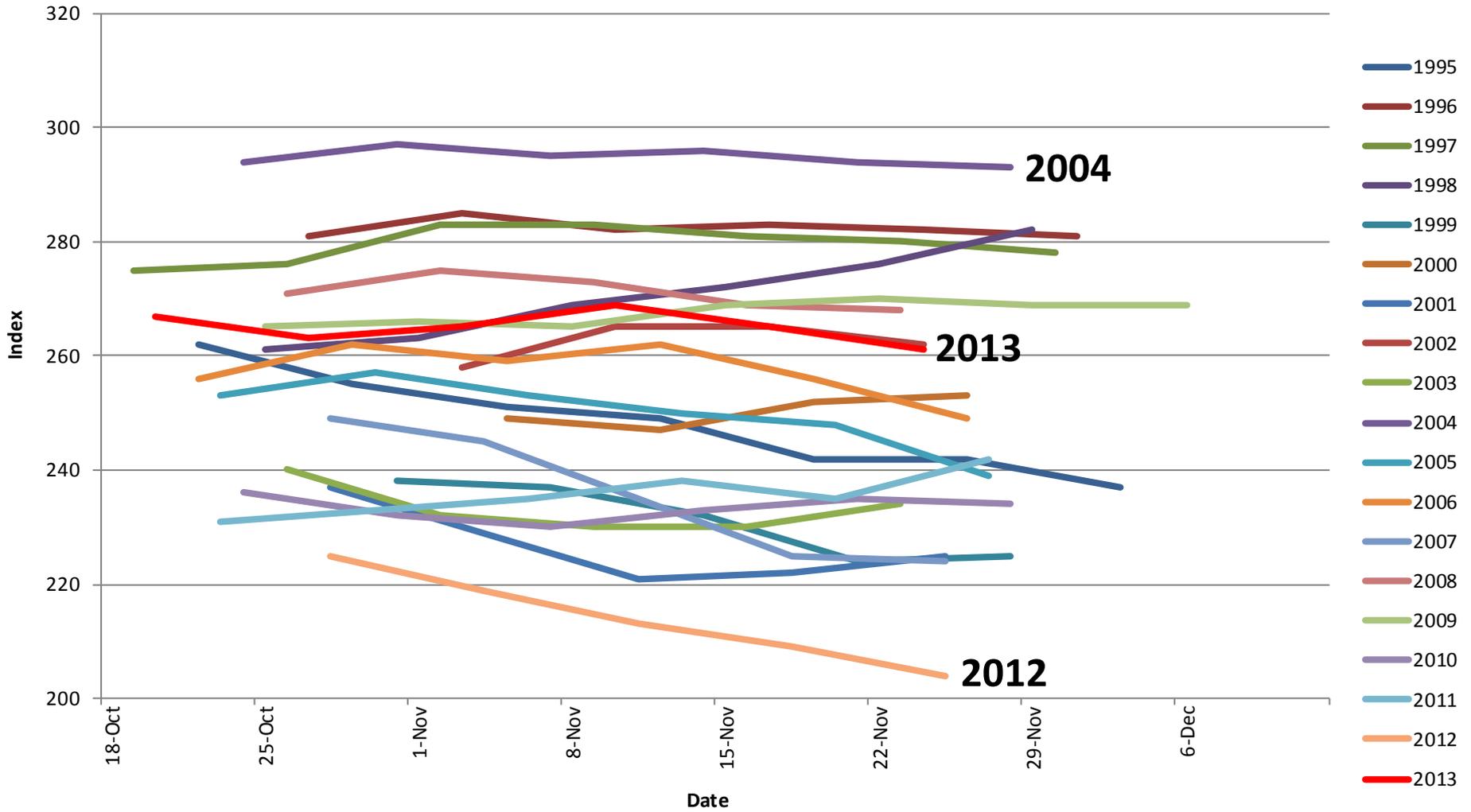


Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

| National Condition | |
|-----------------------|-----|
| Poor to Very Poor | 8 |
| Change from Last Year | -18 |

TOP ## - Percent Poor to Very Poor
BOTTOM ## - Change from Last Year

U.S. WINTER WHEAT Condition Index



Based on NASS crop progress data.

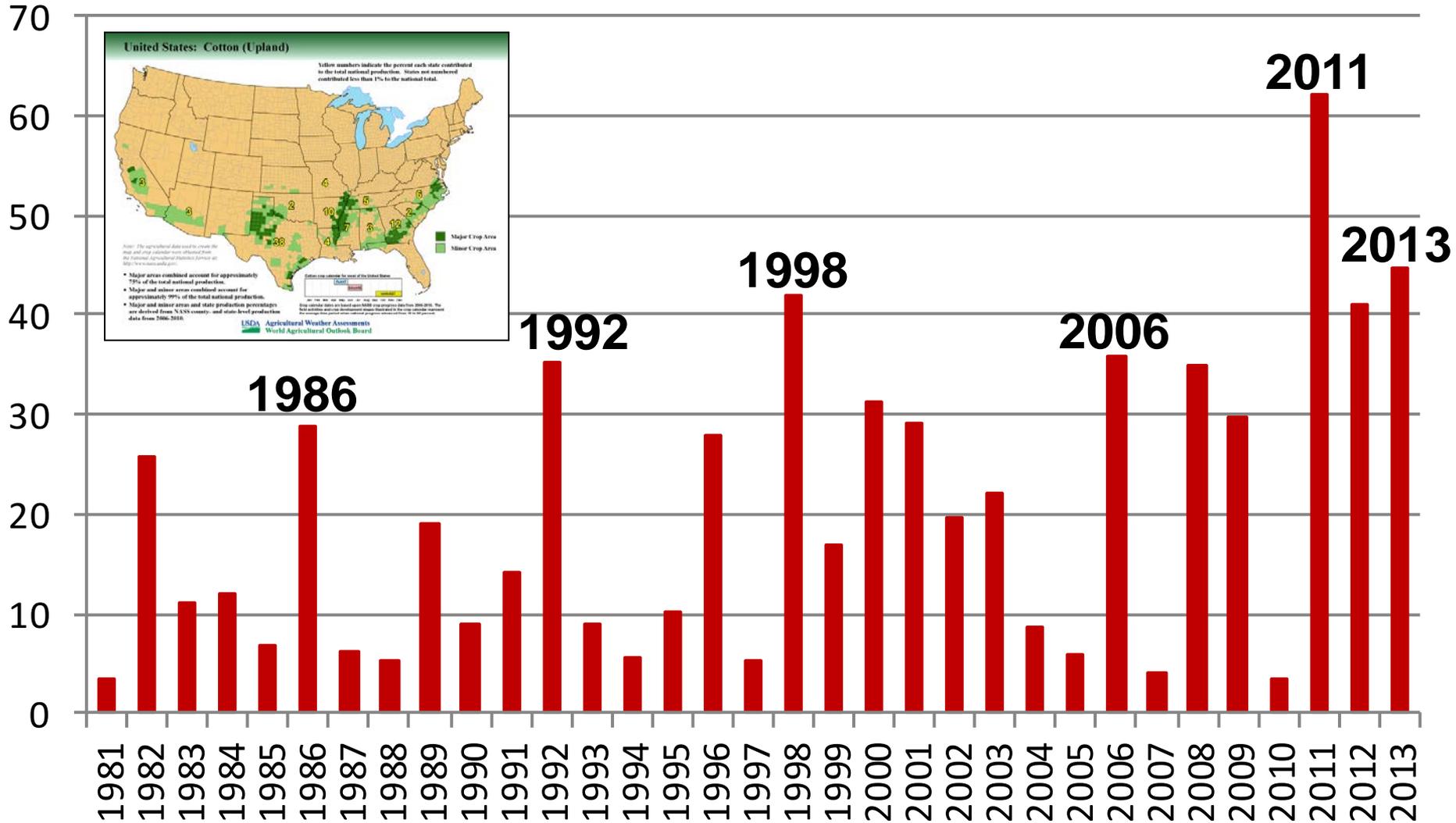
Index Weighting: Excellent = 4; Good = 3; Fair = 2; Poor = 1; Very Poor = 0

Winter Wheat Conditions

February 2, 2014

| <u>State</u> | <u>VP</u> | <u>P</u> | <u>F</u> | <u>G</u> | <u>EX</u> |
|-----------------|-----------|----------|-----------|-----------|-----------|
| Texas (2/2) | 14 | 27 | 40 | 17 | 2 |
| Oklahoma | 4 | 20 | 40 | 31 | 5 |
| Kansas | 3 | 17 | 45 | 33 | 2 |
| Nebraska | 3 | 15 | 36 | 40 | 6 |
| S. Dakota | 3 | 13 | 24 | 53 | 7 |
| Montana | 1 | 5 | 48 | 43 | 3 |
| <u>Illinois</u> | <u>1</u> | <u>3</u> | <u>40</u> | <u>53</u> | <u>3</u> |
| Texas (2/16) | 13 | 31 | 39 | 15 | 2 |

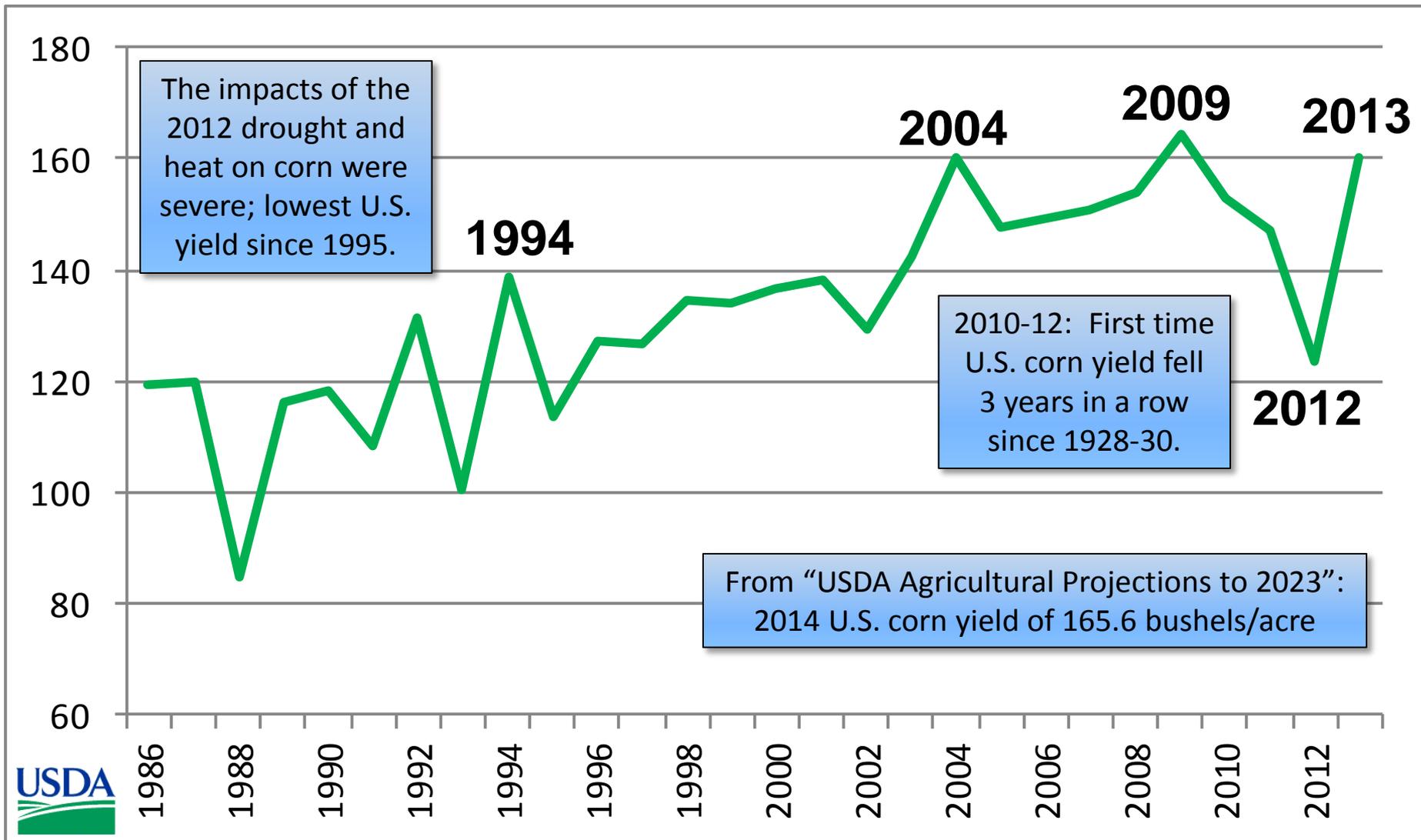
Percent Texas Cotton Abandonment 1980-2013



Potential U.S. Trouble Spots, 2014 Growing Season

- **California** (third year of drought; depleted soil moisture; diminishing water supplies)
- **Great Basin, Southwest** (see California)
- **Southern High Plains** (fourth year of drought?; drought-damaged rangeland; subsoil moisture shortages)
- **Corn Belt** (lingering drought in Upper Midwest; wetness issues farther east?)
- **Western Gulf Coast** (trending dry)

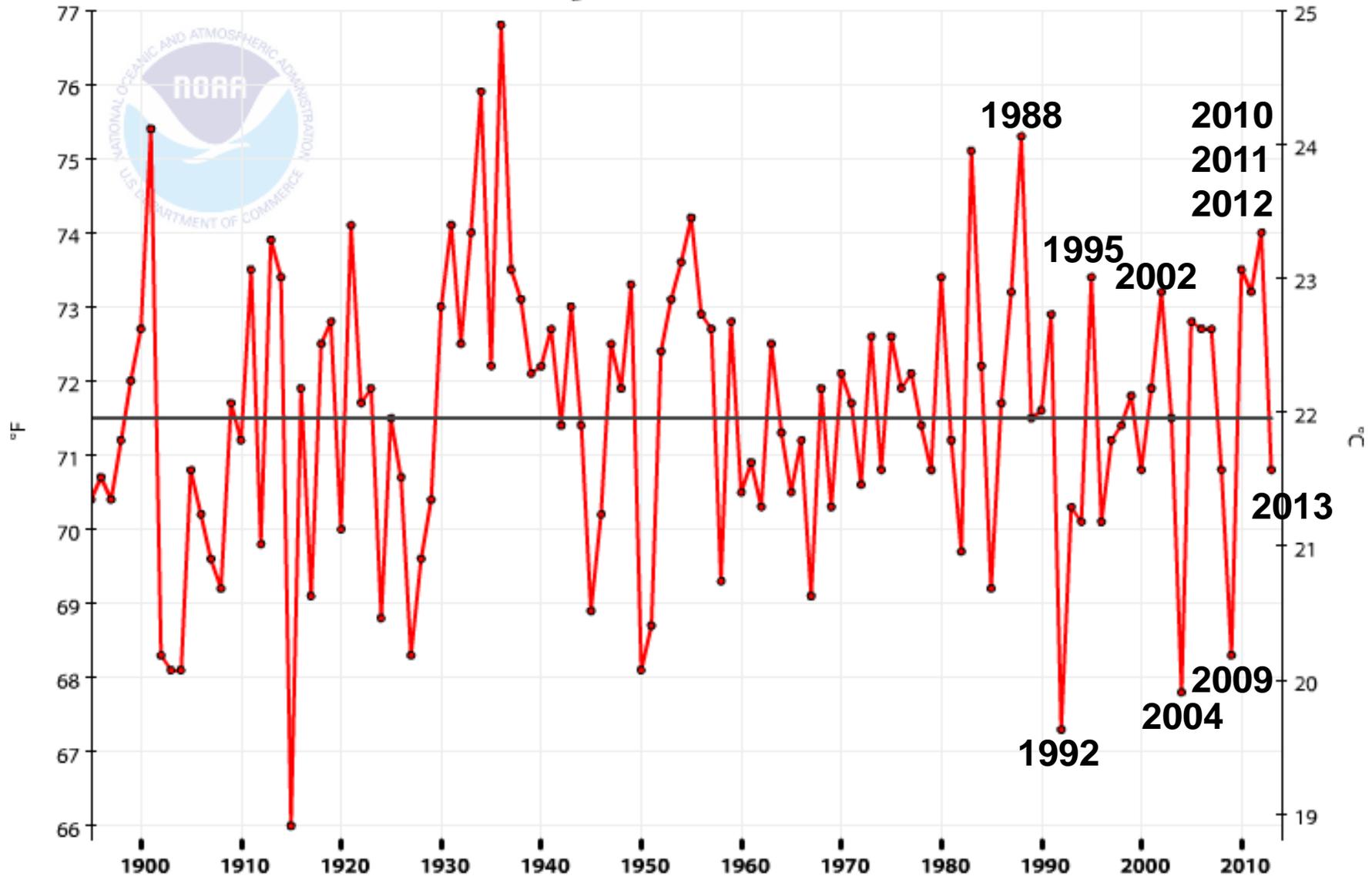
U.S. Corn Yield, Bushels Per Acre 1985-2013



Iowa, Summer Average Temperature (°F), 1895-2013

Iowa, Temperature, June-August

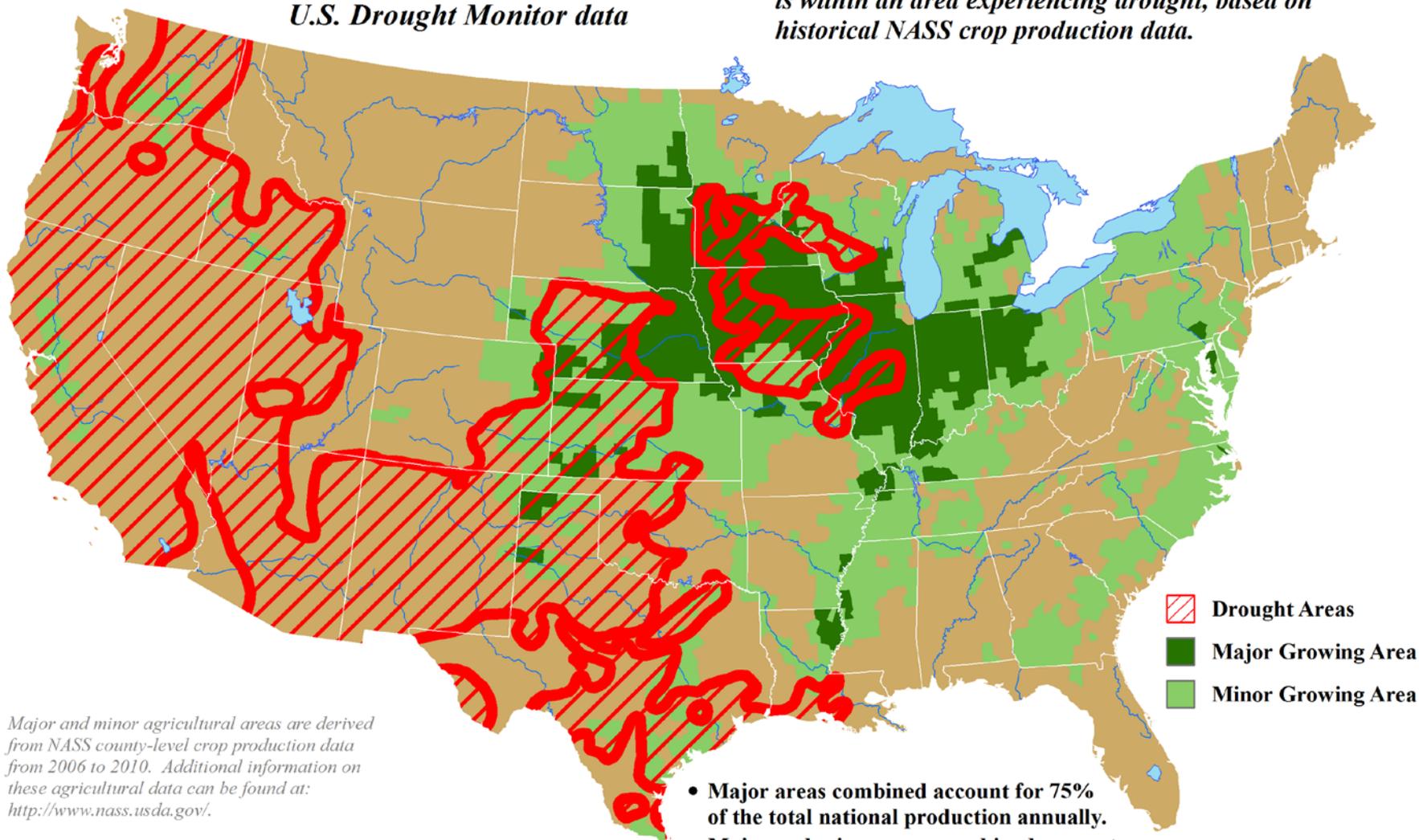
— 1901-2000 Avg: 71.5°F ●— Temperature



U.S. Corn Areas Experiencing Drought

Reflects February 18, 2014
U.S. Drought Monitor data

Approximately **29%** of the corn grown in the U.S.
is within an area experiencing drought, based on
historical NASS crop production data.

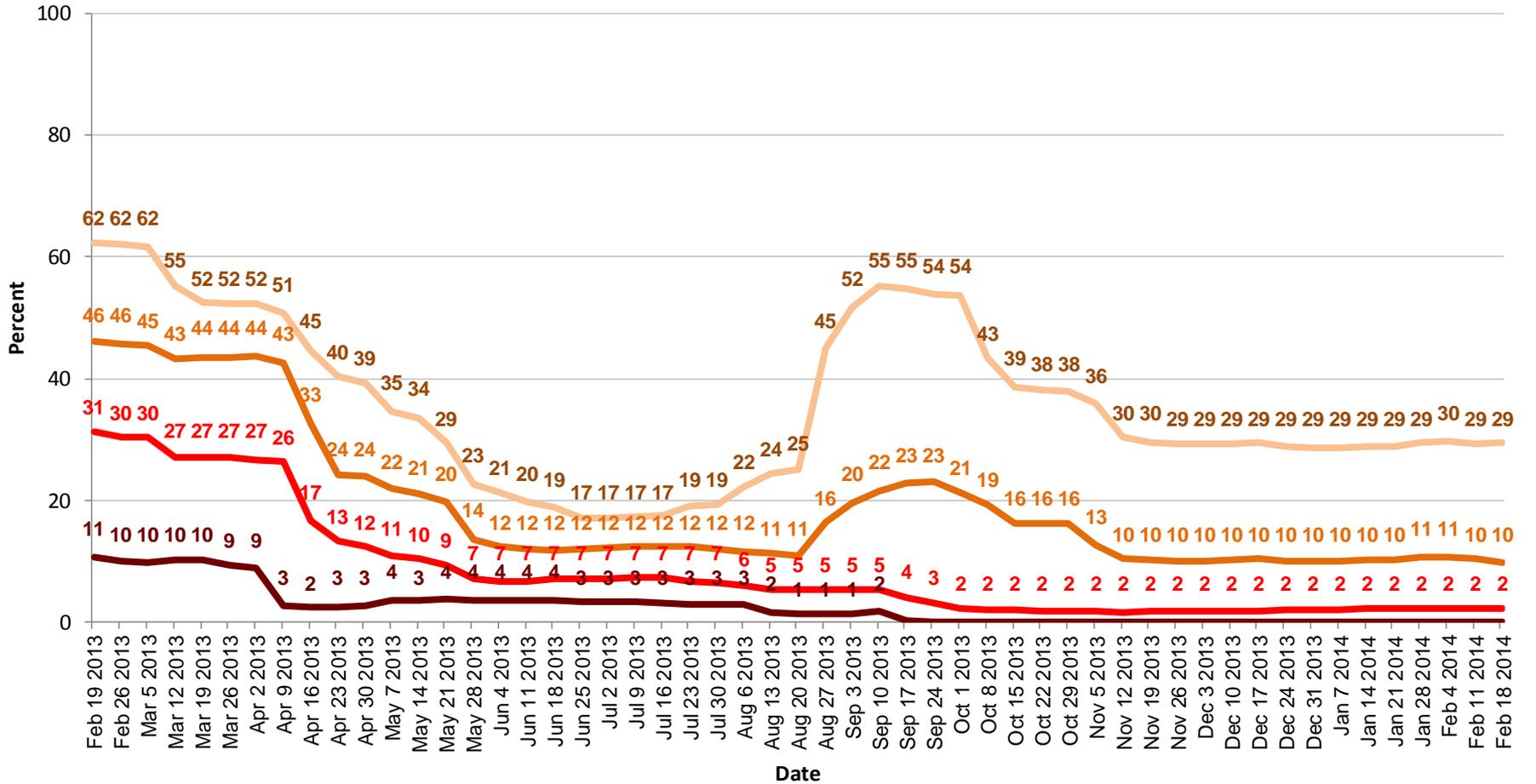


Major and minor agricultural areas are derived from NASS county-level crop production data from 2006 to 2010. Additional information on these agricultural data can be found at: <http://www.nass.usda.gov/>.

Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: <http://droughtmonitor.unl.edu/>.

- Major areas combined account for 75% of the total national production annually.
- Major and minor areas combined account for 99% of the total national production annually.

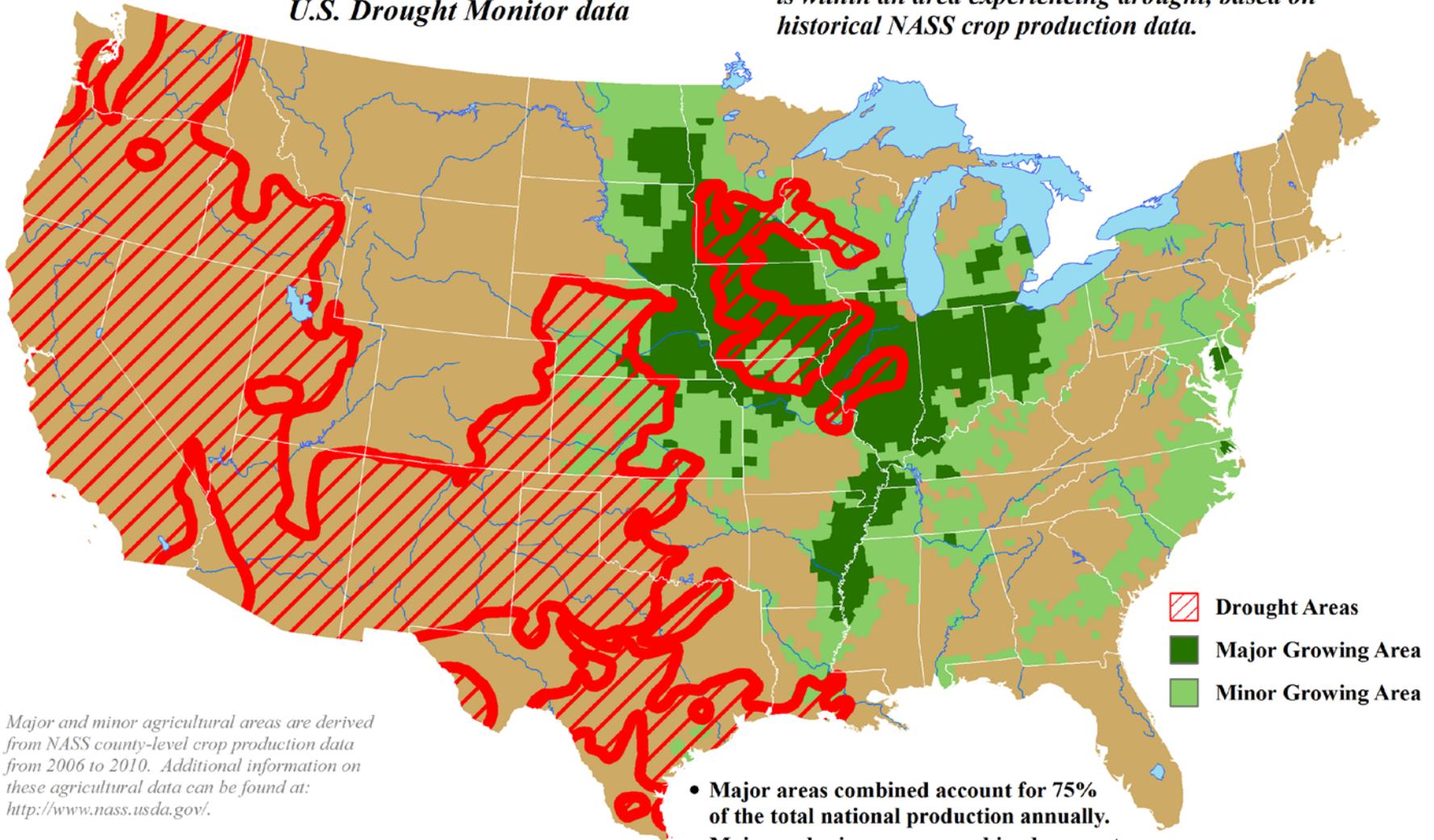
United States Corn Areas Located in Drought



U.S. Soybean Areas Experiencing Drought

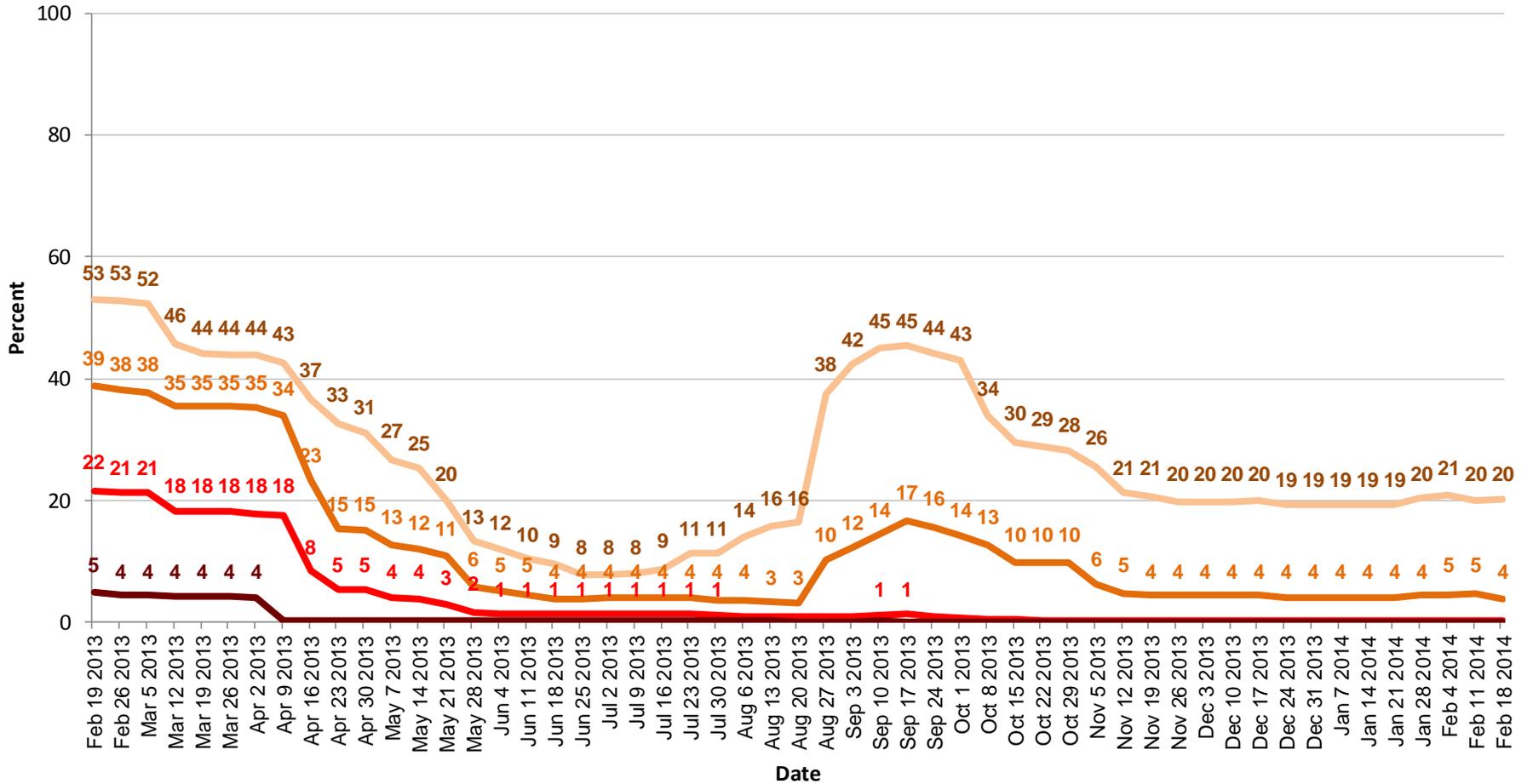
Reflects February 18, 2014
U.S. Drought Monitor data

Approximately 20% of the soybeans grown in the U.S.
is within an area experiencing drought, based on
historical NASS crop production data.



Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: <http://droughtmonitor.unl.edu/>.

United States Soybean Areas Located in Drought



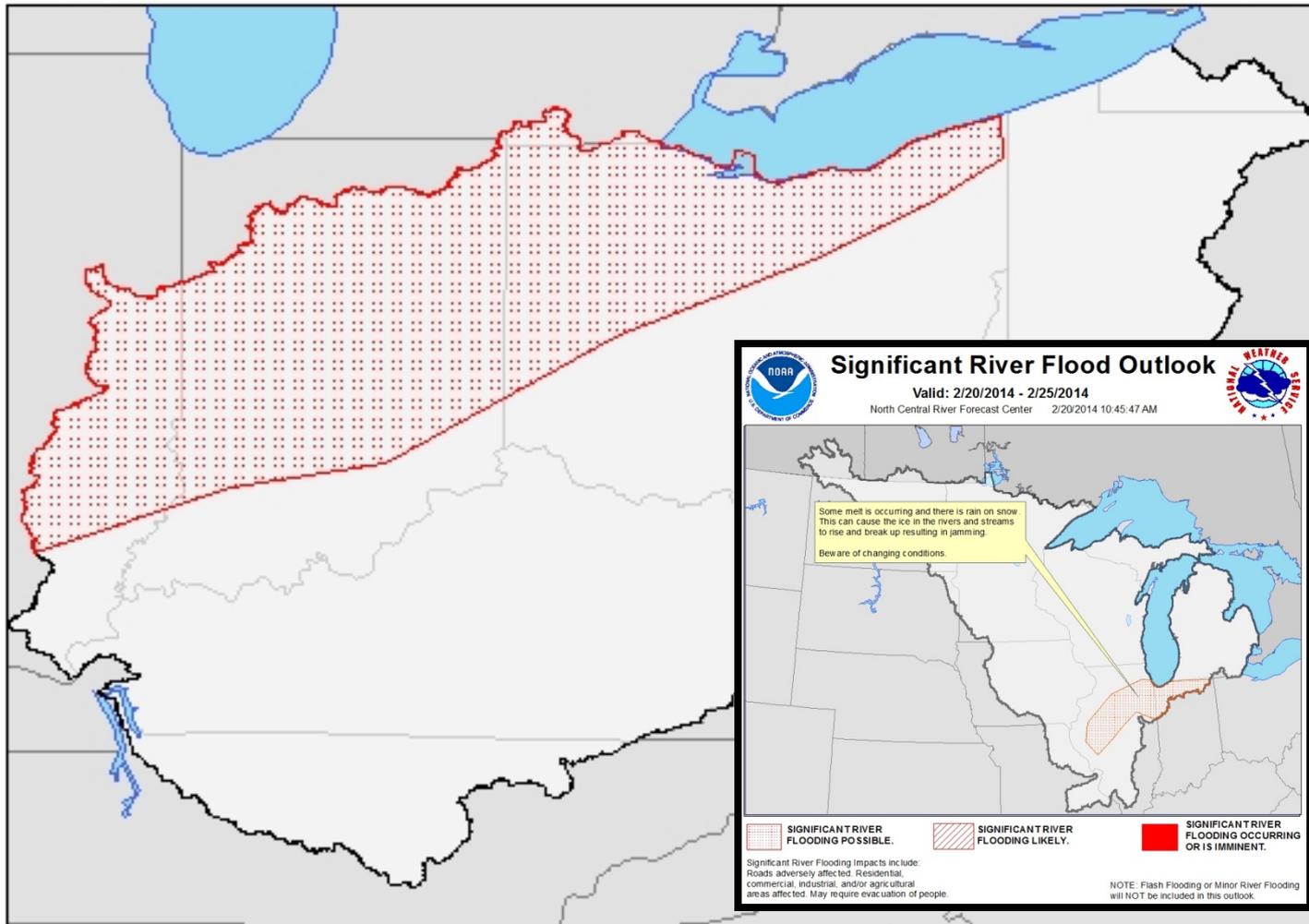


Significant River Flood Outlook



Valid: 2/20/2014 - 2/25/2014

Ohio River Forecast Center 2/20/2014 11:44:12 AM



SIGNIFICANT RIVER FLOODING POSSIBLE.

SIGNIFICANT RIVER FLOODING LIKELY.

SIGNIFICANT RIVER FLOODING OCCURRING OR IS IMMINENT.

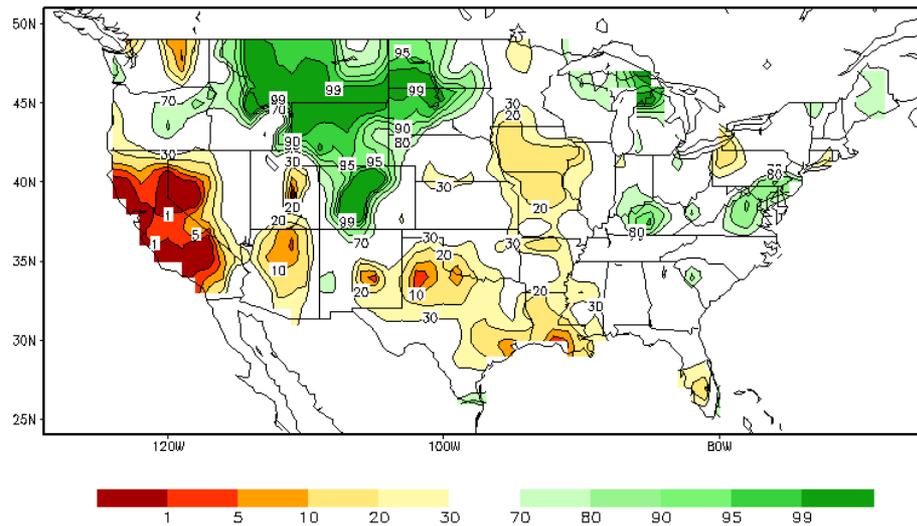
Significant River Flooding Impacts include:
Roads adversely affected. Residential, commercial, industrial, and/or agricultural areas affected. May require evacuation of people.

NOTE: Flash Flooding or Minor River Flooding will NOT be included in this outlook.

Current Soil Moisture (Modeled)

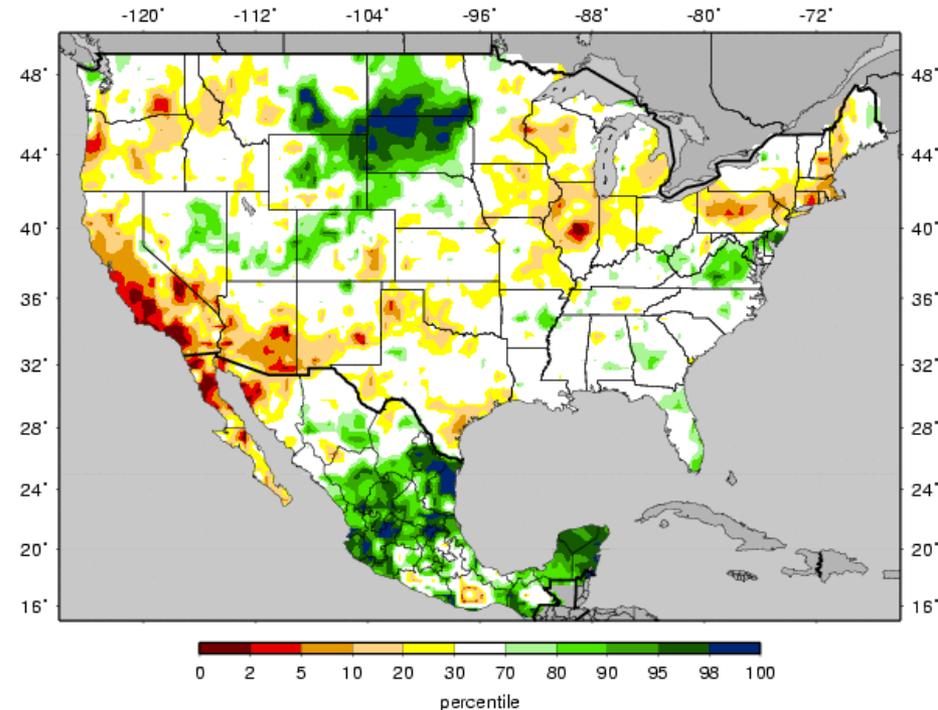
Climate Prediction Center

Calculated Soil Moisture Ranking Percentile
FEB 19, 2014



University of Washington

VIC Soil Moisture Percentiles (wrt/ 1916-2004)
20140218

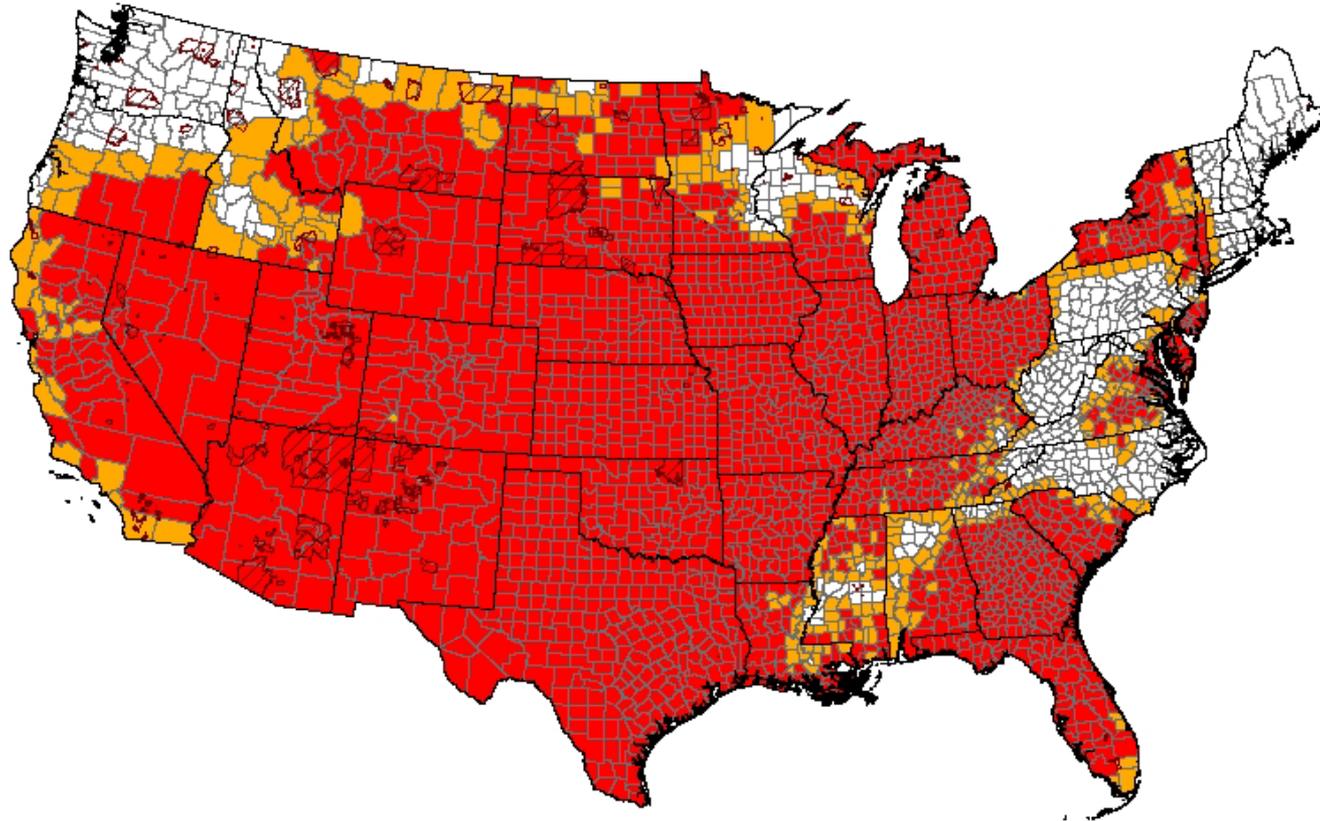


Even though some flooding is occurring now in the Lower Midwest, soil moisture models point toward the northern Plains as the region to watch for potential spring flooding and planting delays.

“Fast Track” Secretarial Disaster Designation Process

- Streamlines the USDA Secretarial designation process by eliminating steps from the current process;
- A reduced interest rate for emergency loans that effectively lowers the current rate from 3.75 percent to 2.25 percent;
- Preserves the ability of a state governor or Indian Tribal Council to request a Secretarial Disaster Designation;
- Removes the requirement that a request for a disaster designation be initiated only by a state governor or Indian Tribal Council;
- Further streamlines the disaster designation process for severe drought occurrences by utilizing the U.S. Drought Monitor as a tool to automatically trigger disaster areas with no further documentation;
- Does not impose any new requirements on producers or the public.
- **Led to drought disaster declarations in 2,254 counties in 39 states.**

2012 Secretarial Drought Designations - All Drought



All Drought Disaster Incidents as of 2/13/2013

-  State Boundary
-  County Boundary
-  Tribal Lands
-  Primary Counties: 2,254
-  Contiguous Counties: 374



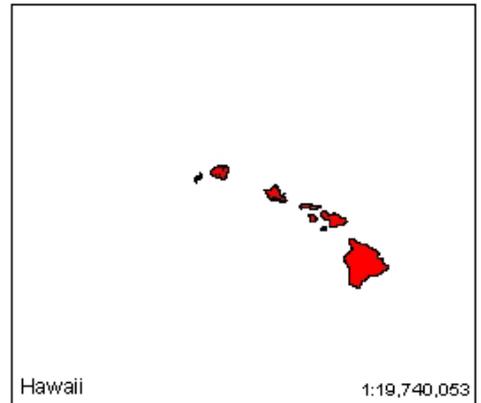
USDA Farm Service Agency
 Production, Emergencies and Compliance Division
 Washington, D.C.
 February 13, 2013

1:23,520,203



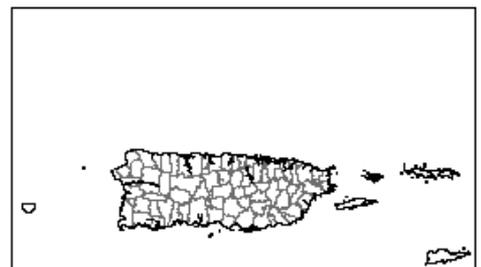
Alaska

1:58,102,399



Hawaii

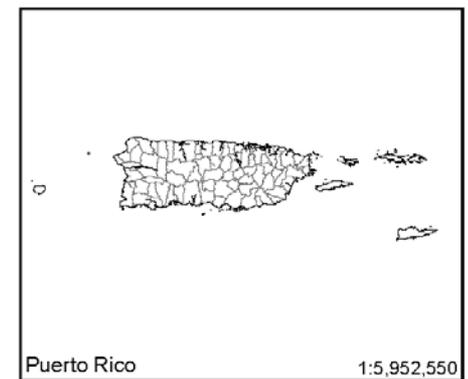
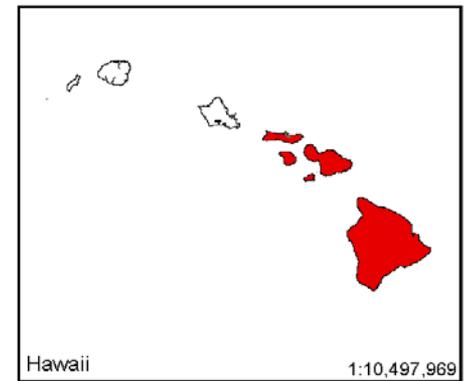
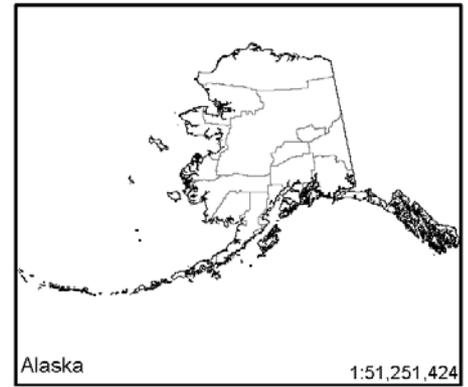
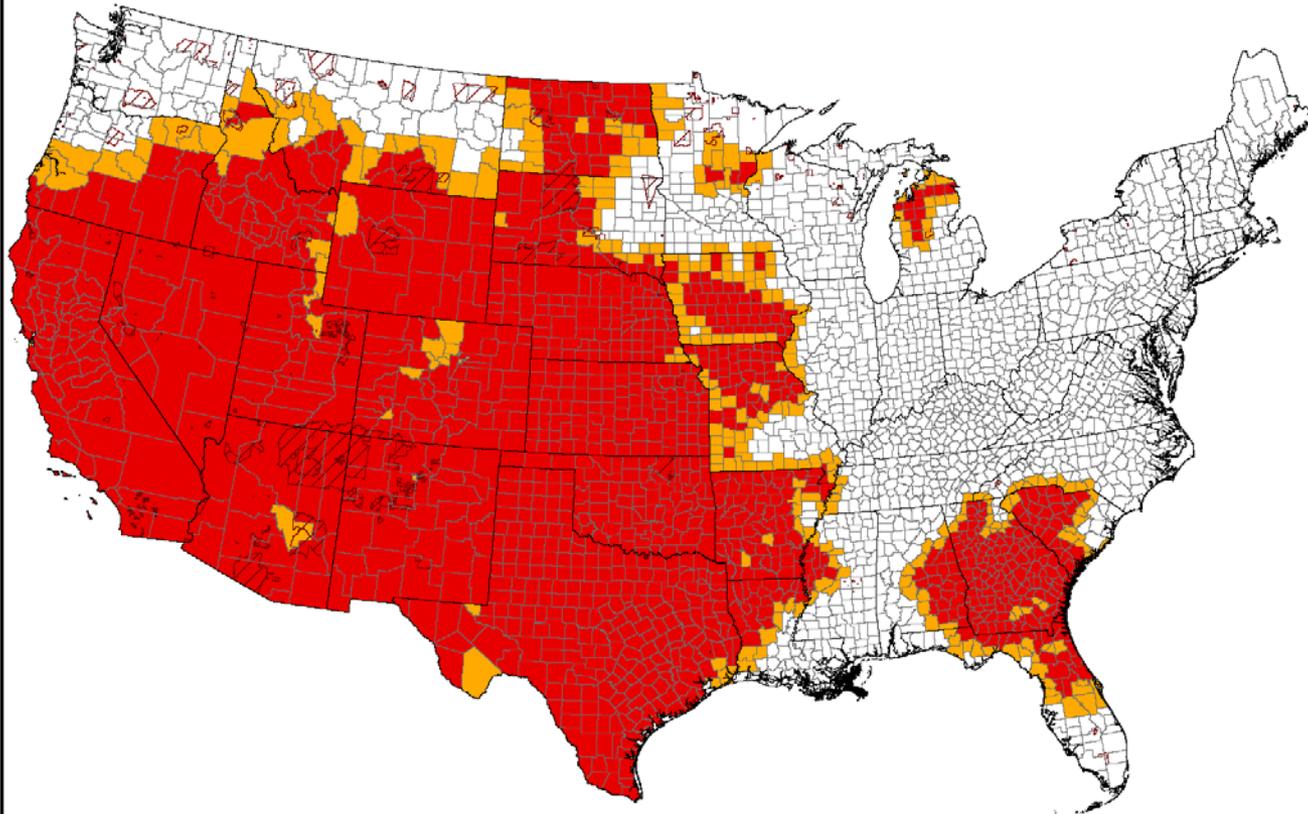
1:19,740,053



Puerto Rico

1:5,592,808

2013 Secretarial Drought Designations - All Drought



Secretarial Drought Designations for 2013

Disaster Incidents as of February 5, 2014

-  State Boundary
-  County Boundary
-  Tribal Lands
- February 5, 2014
-  Primary Counties: 1257
-  Contiguous Counties: 315

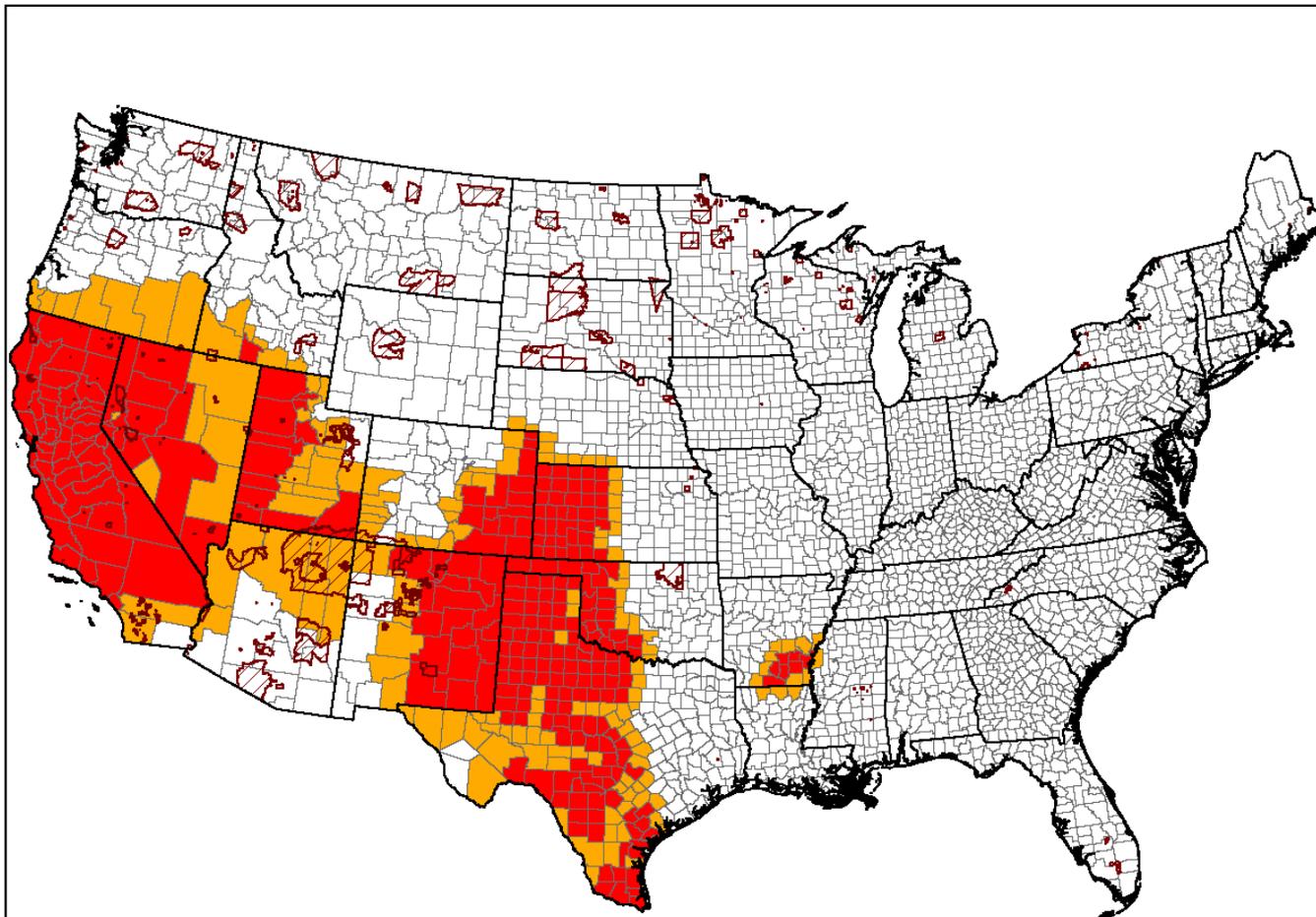


USDA Farm Service Agency
 Production, Emergencies and Compliance Division
 Washington, D.C.
 February 5, 2014

1:23,721,366

Secretarial Disaster Designations - CY 2014

Primary and Contiguous Counties Designated for 2014 Crop Disaster Losses



All Secretarial Designations as of February 19, 2014

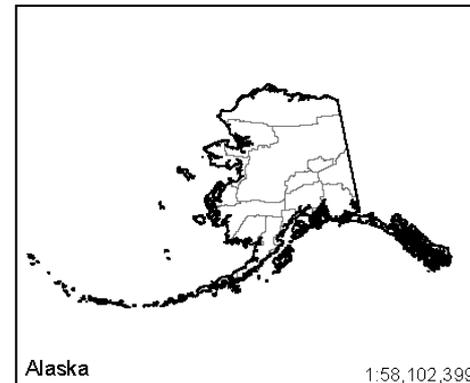
Total All Crop Approved Designations

-  State Boundary
-  County Boundary
-  Tribal Lands
- February 19, 2014
-  Primary Counties: 294
-  Contiguous Counties: 161



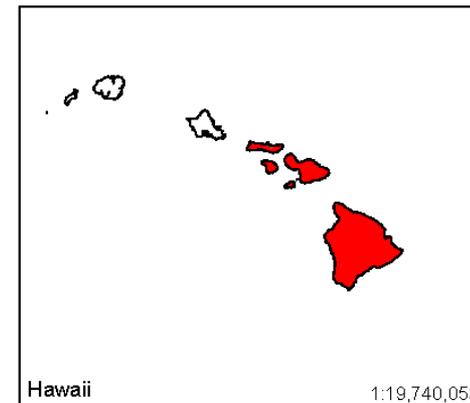
USDA Farm Service Agency
Production, Emergencies and Compliance Division
Washington, D.C.
February 19, 2014

1:23,520,203



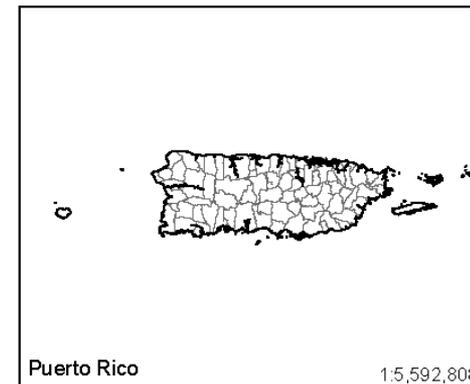
Alaska

1:58,102,399



Hawaii

1:19,740,053



Puerto Rico

1:5,592,808

- **U.S. Drought Monitor Usage by FSA**
- **Food, Conservation, and Energy Act of 2008 (“Farm Bill”) authorizes the Livestock Forage Disaster Program (LFP)**
 - **Grazing loss because of drought on owned or leased grazing land or pastureland that is physically located in a county experiencing:**
 - **D2 intensity for at least 8 consecutive weeks during normal grazing period will be eligible to receive an amount equal to 1 monthly payment**
 - **D3 intensity during the normal grazing period will be eligible to receive an amount equal to 2 monthly payments**
 - **D3 intensity for at least 4 weeks or a D4 intensity any time during the grazing period will be eligible to receive an amount equal to 3 monthly payments**

- **U.S. Drought Monitor Usage by FSA**

- **Agricultural Act of 2014 (“Farm Bill”) re-authorizes the Livestock Forage Disaster Program (LFP)**
 - **Grazing loss because of drought on owned or leased grazing land or pastureland that is physically located in a county experiencing:**
 - **D2 intensity for at least 8 consecutive weeks during normal grazing period will be eligible to receive an amount equal to 1 monthly payment**
 - **D3 intensity during the normal grazing period will be eligible to receive an amount equal to 3 monthly payments**
 - **D3 intensity for at least 4 weeks or a D4 intensity any time during the grazing period will be eligible to receive an amount equal to 4 monthly payments**
 - **D4 intensity for at least 4 weeks during the normal grazing period will be eligible to receive an amount equal to 5 monthly payments**

- 2008 “Farm Bill” Livestock Forage Disaster Program (LFP) Payouts (financial assistance to producers who suffered grazing losses due to drought or fire on or after January 1, 2008, and before October 1, 2011, during the calendar year in which the loss occurs):
 - 2008 calendar year: \$165,540,837
 - 2009 calendar year: \$ 98,739,950
 - 2010 calendar year: \$ 33,334,458
 - 2011 calendar year: \$180,950,088
 - 2012 calendar year: \$ 0
 - **LFP total, 2008-11: \$478,565,333**

Retroactive LFP Payouts

The 2014 Farm Bill contains permanent livestock disaster programs including the Livestock Forage Disaster Program, which will help producers in California and other areas recover from the drought. At President Obama's direction, USDA is making implementation of the disaster programs a top priority and plans to have the programs available for sign up in 60 days.

Producers will be able to sign up for the livestock disaster programs for losses not only for 2014 but for losses they experienced in 2012 and 2013. While these livestock programs took over a year to get assistance out the door under the last Farm Bill, USDA has committed to cut that time by more than 80 percent and begin sign-up in April. California alone could potentially receive up to \$100 million for 2014 losses and up to \$50 million for previous years.

Thank you!

- Contact info
 - e-mail: brippsey@oce.usda.gov
 - phone: (202) 720-2397



U.S. Billion-Dollar Disasters, 1980-2013

| | | | |
|-----|-------------------|------|---------|
| 1. | Hurricane Katrina | 2005 | \$148.8 |
| 2. | Drought | 1988 | \$ 78.8 |
| 3. | Superstorm Sandy | 2012 | \$ 65.7 |
| 4. | Drought | 1980 | \$ 56.4 |
| 5. | Hurricane Andrew | 1992 | \$ 44.8 |
| 6. | Flooding | 1993 | \$ 33.8 |
| 7. | Drought | 2012 | \$ 30.3 |
| 8. | Hurricane Ike | 2008 | \$ 29.2 |
| 9. | Hurricane Wilma | 2005 | \$ 19.0 |
| 10. | Hurricane Rita | 2005 | \$ 19.0 |

Source: National Climatic Data Center (<http://www.ncdc.noaa.gov/billions/>)