



Natural Resources Conservation Service
P.O. Box 2890
Washington, D.C. 20013

Weekly Report - Snowpack / Drought Monitor Update **Date:** **November 8, 2007**

SNOTEL SNOWPACK AND PRECIPITATION SUMMARY

Snow: Although very early into this year's snowfall season, the majority of higher SNOTEL sites over Wyoming and Montana have lost most of the early season snow cover (Fig 1). The remainder of the West is essentially without snow cover except for the highest peaks.

Temperature: During the past seven days, temperatures were above normal across the West with the exception of cooler temperature departures over western Oregon and Washington (Fig.2 and 2a).

Precipitation: For the past week, a practically non-existent rain or snow pattern dominated the West (Fig. 3).

WESTERN DROUGHT STATUS

The West: Continued warm and dry weather lead to expansion of D0 in eastern Arizona and central New Mexico. D3 persisted over western Arizona and southern California.

Author: [Douglas Le Comte, Climate Prediction Center, NOAA/NWS](#)

A comprehensive narrative describing drought conditions for the nation can be found at the end of this document.

DROUGHT IMPACTS DEFINITIONS (<http://drought.unl.edu/dm/classify.htm>)

The possible impacts associated with **D4 (H, A)** drought include widespread crop/pasture losses and shortages of water in reservoirs, streams, and wells creating water emergencies. The possible impacts associated with **D3 (H, A)** drought include major crop/pasture losses and widespread water shortages or restrictions. Possible impacts from **D2 (H, A)** drought are focused on water shortages common and water restrictions imposed and crop or pasture losses likely. The possible impacts associated with **D1 (H, A)** drought are focused on water shortages developing in streams, reservoirs, or wells, and some damage to crops and pastures (Figs.4, 4a, and 4b).

SOIL MOISTURE

Soil moisture (Fig.5), is simulated by the [VIC macroscale hydrologic model](#). The detailed, physically-based VIC model is driven by observed daily precipitation and temperature maxima and minima from approximately 2130 stations, selected for reporting reliably in real-time and for having records of longer than 45 years (and various other criteria).

OBSERVED FIRE DANGER CLASS

The National Interagency Coordination Center provides a variety of products that describe the current wildfire status for the U.S. - <http://www.nifc.gov/information.html>. The latest Observed Fire Danger Class is shown in Figs. 6 and 6a shows the current active wildfires across the West - <http://geomac.usgs.gov/>.

Weekly Snowpack and Drought Monitor Update Report

U.S. HISTORICAL STREAMFLOW

This map, (Fig. 7) shows the 7-day average streamflow conditions in hydrologic units of the United States and Puerto Rico for the day of year. The colors represent 7-day average streamflow percentiles based on historical streamflow for the day of the year. Thus, the map shows conditions adjusted for this time of the year. Only stations having at least 30 years of record are used. Sub-regions shaded gray indicate that insufficient data were available to compute a reliable 7-day average streamflow value. During winter months, this situation frequently arises due to ice effects. The data used to produce this map are provisional and have not been reviewed or edited. They may be subject to significant change.

http://water.usgs.gov/cgi-bin/waterwatch?state=us&map_type=dryw&web_type=map.

VEGETATION HEALTH

The images (Fig. 8) are color-coded maps of vegetation condition (health) estimated by the Vegetation and Temperature Condition Index (VT). The VT is a numerical index, which changes from 0 to 100 characterizing change in vegetation conditions from extremely poor (0) to excellent (100). Fair conditions are coded by green color (50), which changes to brown and red when conditions deteriorate and to blue when they improve.

<http://www.orbit.nesdis.noaa.gov/smcd/emb/vci/usa.html>.

STATE ACTIVITIES

State government drought activities can be tracked at the following URL:

<http://drought.unl.edu/mitigate/mitigate.htm>. NRCS SS/WSF State Office personnel are participating in state drought committee meetings and providing the committees and media with appropriate SS/WSF information - <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>. Additional information describing the products available from the Drought Monitor can be found at the following URL: <http://drought.unl.edu/dm/>

FOR MORE INFORMATION

The National Water and Climate Center Homepage provide the latest available snowpack and water supply information. Please visit us at <http://www.wcc.nrcs.usda.gov>. This document is available from the following location on the NWCC homepage -

<http://www.wcc.nrcs.usda.gov/water/drought/wdr.pl>

This report uses data and products provided by the Interagency Drought Monitor Consortium members and the National Interagency Fire Center.

/s/ NOLLER HERBERT

Director, Conservation Engineering Division

Weekly Snowpack and Drought Monitor Update Report

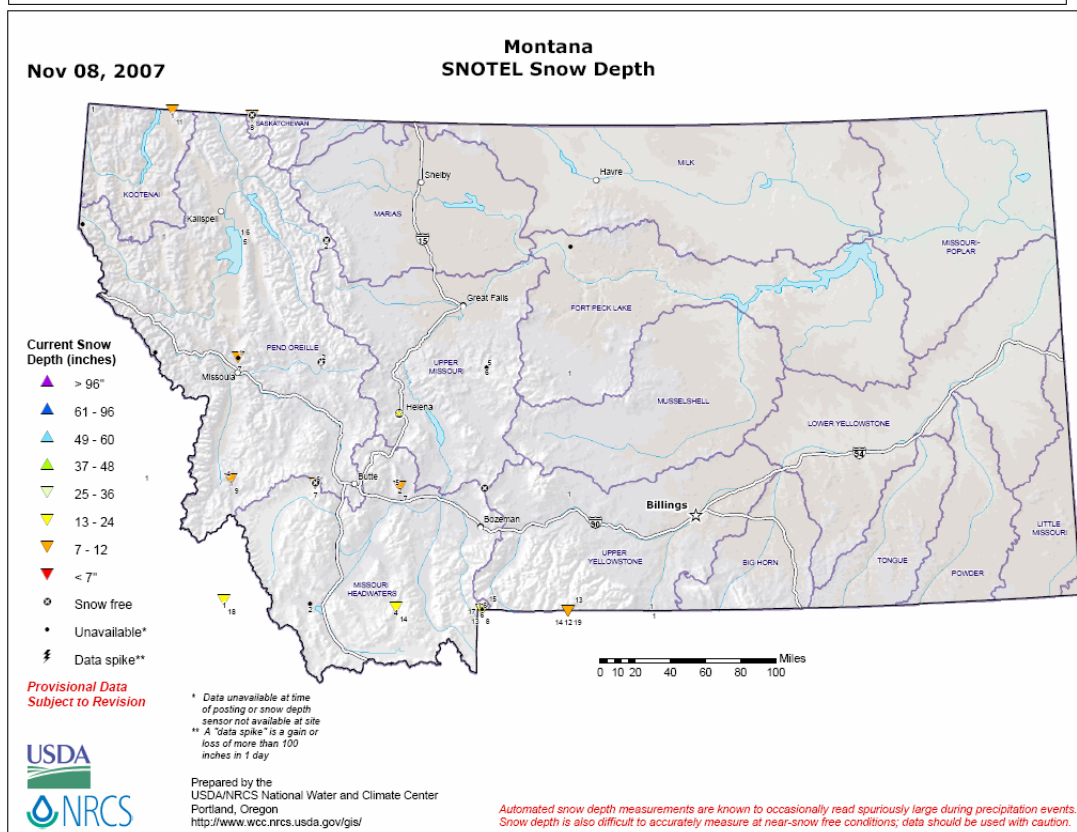
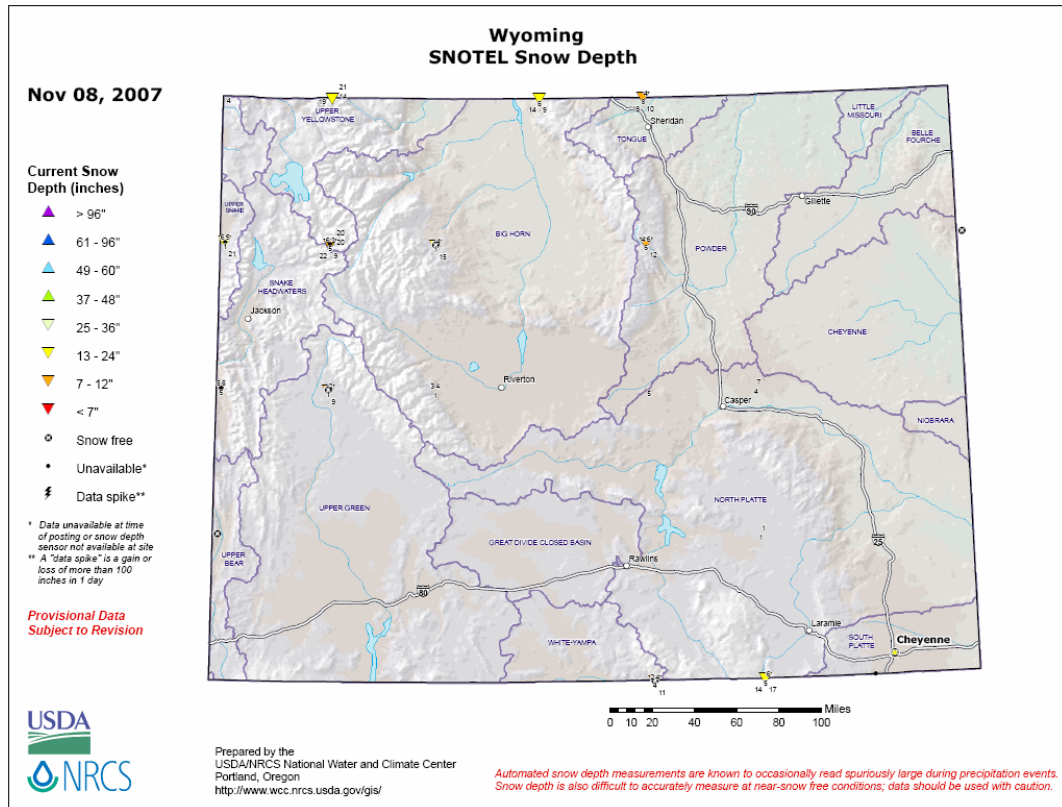


Fig 1. Very early season snow depths for Wyoming and Montana as of 8 November reveals very little snow.

Weekly Snowpack and Drought Monitor Update Report

Nov 08, 2007

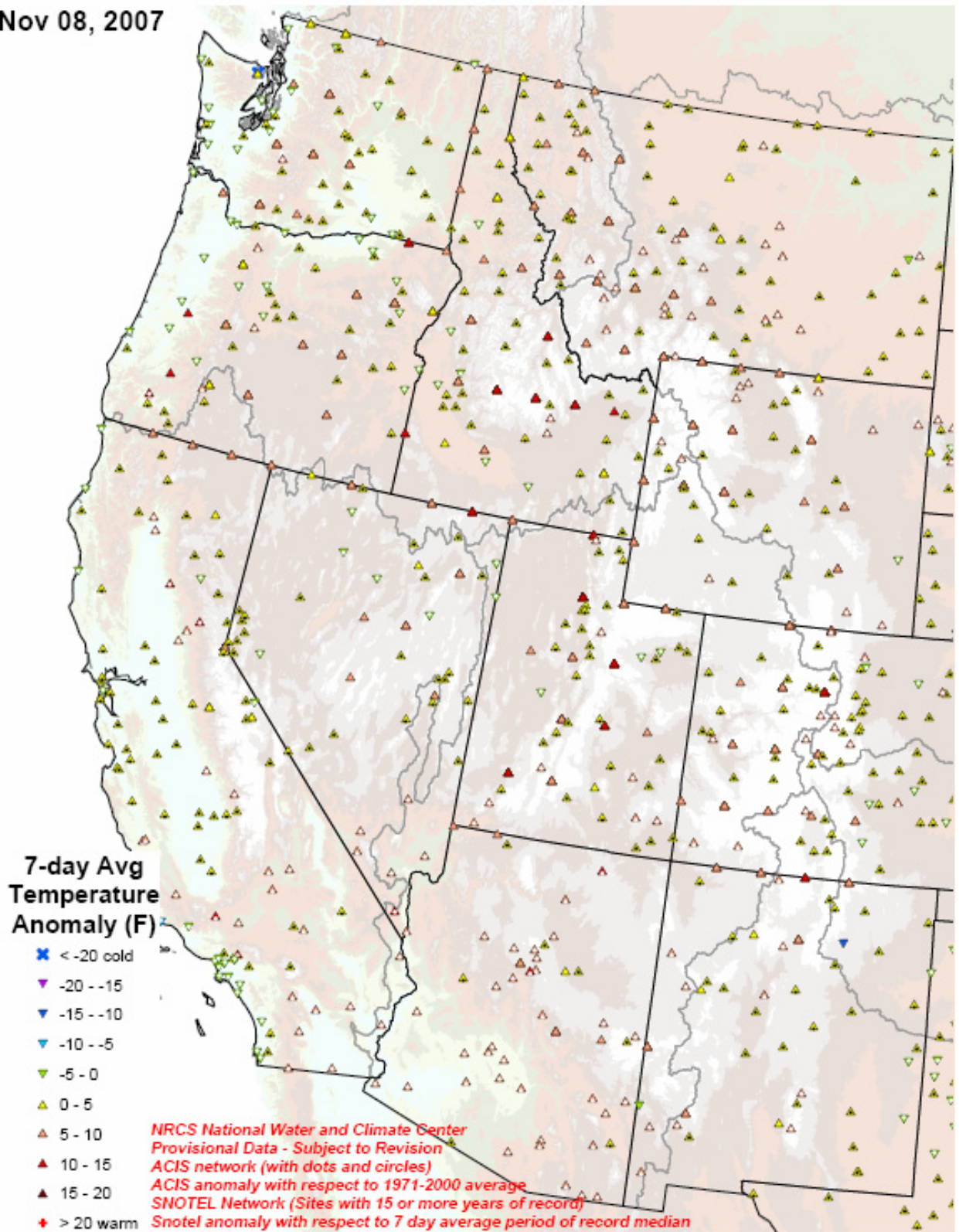
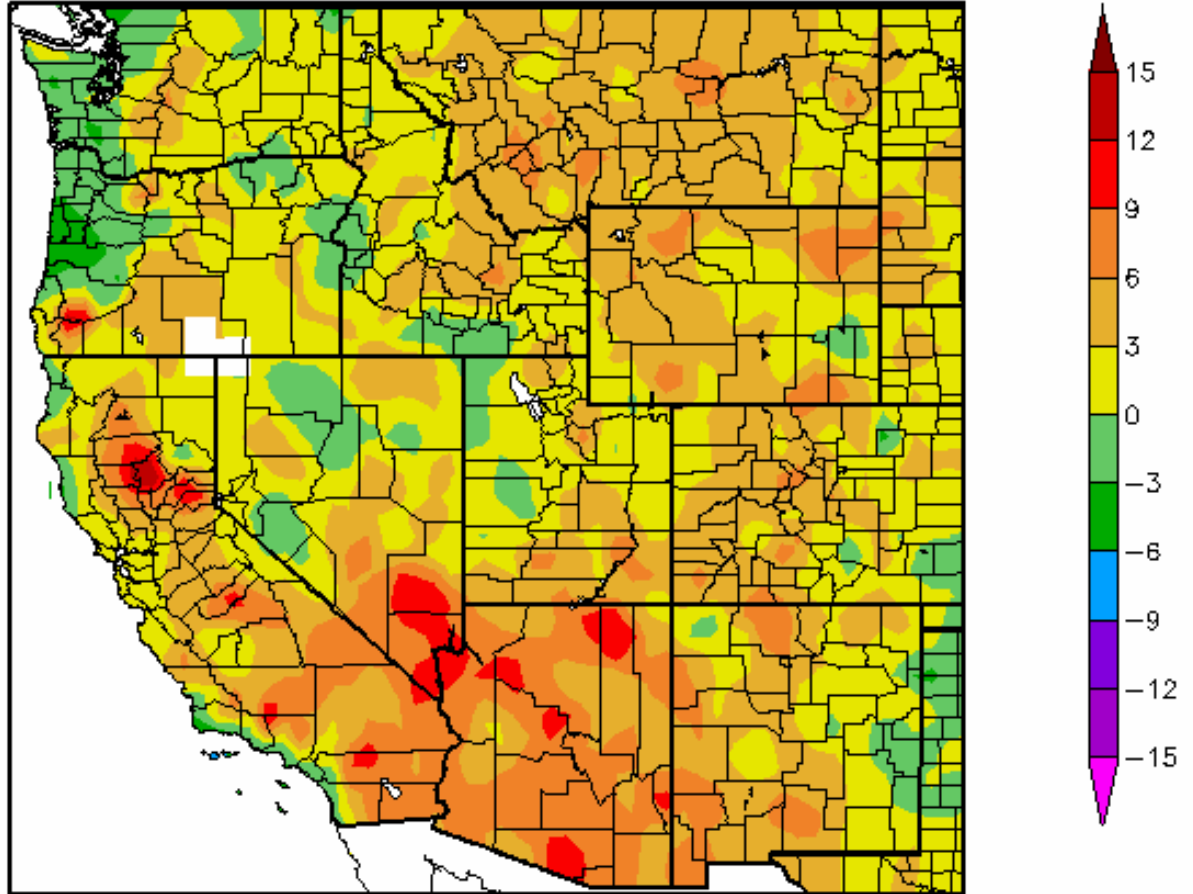


Fig.2. SNOTEL and ACIS 7-day average temperature anomaly.

Ref: <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/WestwideTavg7dAnomalyAcis.pdf>

Departure from Normal Temperature (F)
11/1/2007 – 11/7/2007



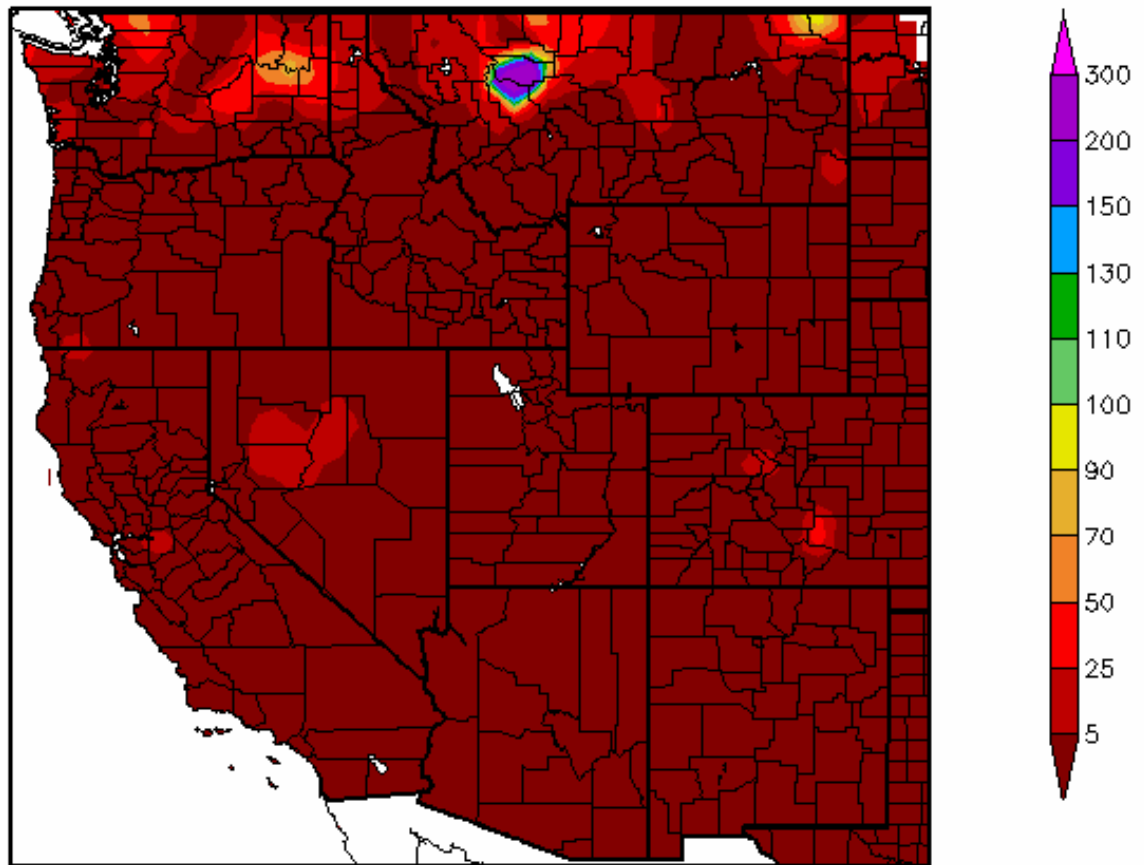
Generated 11/8/2007 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 2a. During the week of November 1-7 2007, temperature departure from normal show warmer than normal temperatures over most of the Southwest, Northern Plains, and Rocky Mountains.

Ref: http://www.hprcc.unl.edu/maps/index.php?action=update_region®ion=WRCC

Percent of Normal Precipitation (%)
11/1/2007 – 11/7/2007



Generated 11/8/2007 at HPRCC using provisional data.

NOAA Regional Climate Centers

Fig. 3. Preliminary precipitation totals for the 7-day period ending 7 November 2007 shows hardly any precipitation across the West.

Ref: http://www.hprcc.unl.edu/maps/index.php?action=update_product&product=PNorm

U.S. Drought Monitor

November 6, 2007
Valid 7 a.m. EST

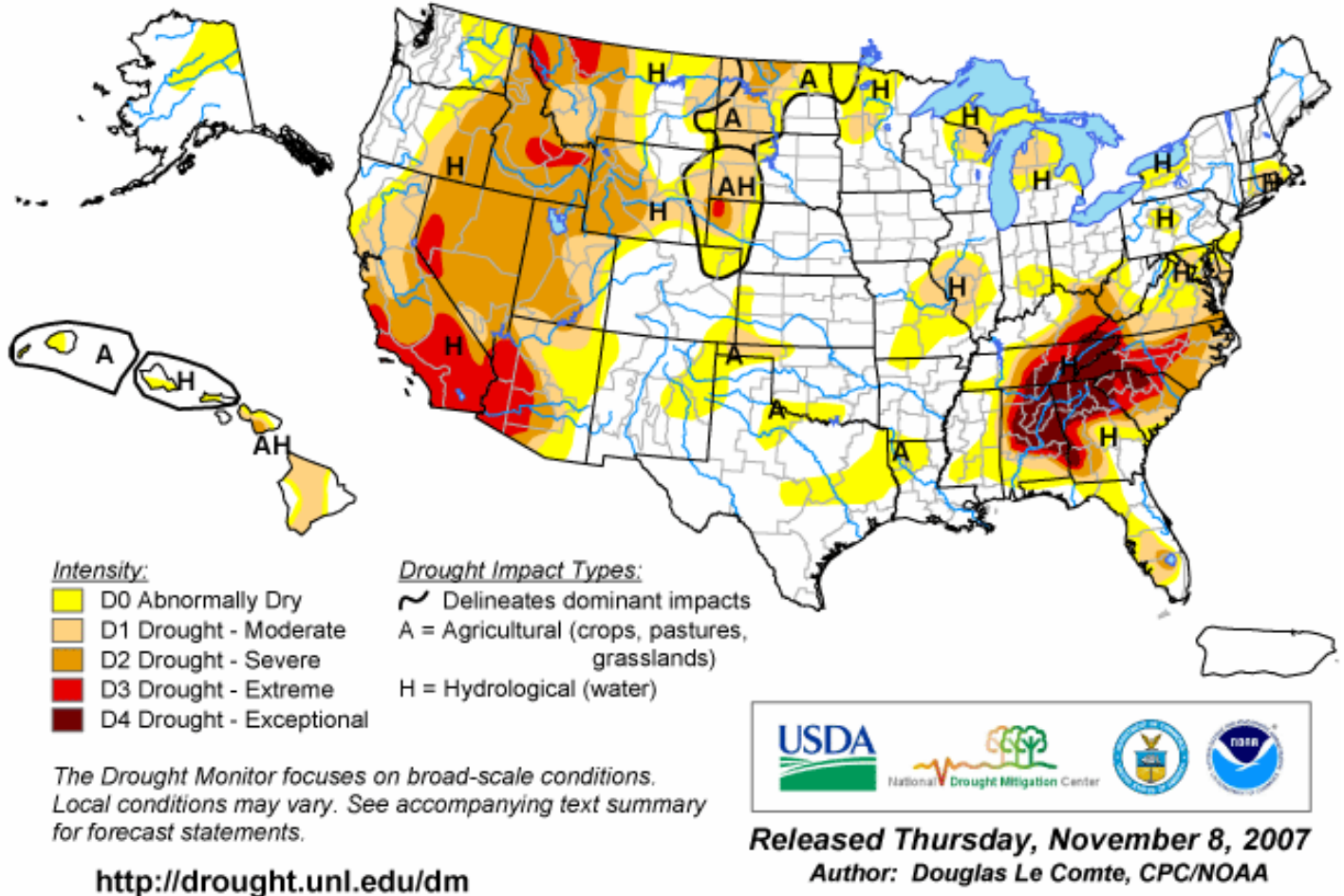


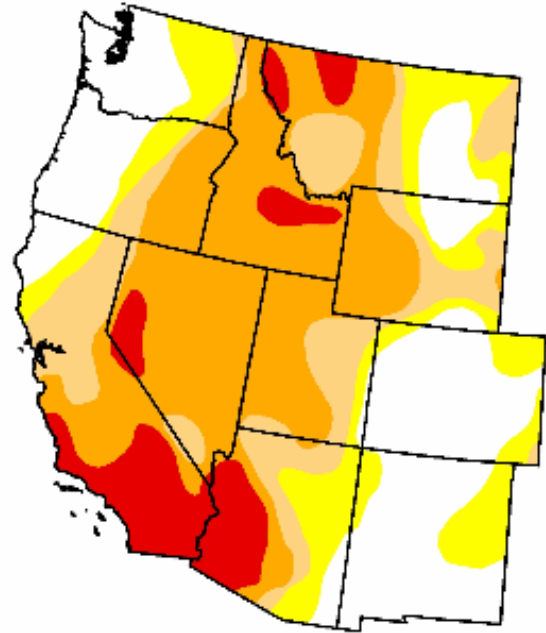
Fig. 4. Current Drought Monitor weekly summary and classification changes over several time periods. Ref: National Drought Mitigation Center (NDMC) - <http://www.drought.unl.edu/dm/monitor.html>

U.S. Drought Monitor West

November 6, 2007
Valid 7 a.m. EST

| Drought Conditions (Percent Area) | | | | | | |
|---|------|-------|-------|-------|-------|-----|
| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
| Current | 27.3 | 72.7 | 57.5 | 41.5 | 10.0 | 0.0 |
| Last Week (10/30/2007 map) | 28.4 | 71.6 | 57.4 | 41.5 | 10.0 | 0.0 |
| 3 Months Ago (08/14/2007 map) | 20.0 | 80.0 | 63.0 | 49.6 | 11.6 | 0.0 |
| Start of Calendar Year (01/02/2007 map) | 51.2 | 48.8 | 25.8 | 9.4 | 4.0 | 0.0 |
| Start of Water Year (10/02/2007 map) | 22.0 | 78.0 | 62.3 | 44.7 | 12.4 | 0.0 |
| One Year Ago (11/07/2006 map) | 58.8 | 41.2 | 24.9 | 11.6 | 4.8 | 0.0 |

Intensity:



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, November 8, 2007

Author: Douglas Le Comte, CPC/NOAA

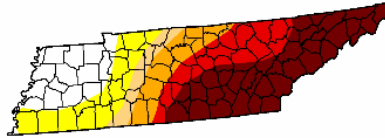
Fig. 4a. Drought Monitor for the Western States with statistics over various time periods. Note no improvement since last week's map. Ref: http://www.drought.unl.edu/dm/DM_west.htm

Weekly Snowpack and Drought Monitor Update Report

U.S. Drought Monitor Tennessee

November 6, 2007
Valid 7 a.m. EST

| Drought Conditions (Percent Area) | | | | | | |
|---|-------|-------|-------|-------|-------|------|
| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
| Current | 17.7 | 82.3 | 66.3 | 61.2 | 50.3 | 35.1 |
| Last Week (10/30/2007 map) | 17.7 | 82.3 | 66.3 | 61.2 | 50.4 | 29.6 |
| 3 Months Ago (08/14/2007 map) | 0.0 | 100.0 | 100.0 | 100.0 | 91.1 | 38.7 |
| Start of Calendar Year (01/02/2007 map) | 37.7 | 62.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Start of Water Year (10/02/2007 map) | 0.0 | 100.0 | 100.0 | 100.0 | 85.7 | 61.3 |
| One Year Ago (11/07/2006 map) | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



Intensity:

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

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

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

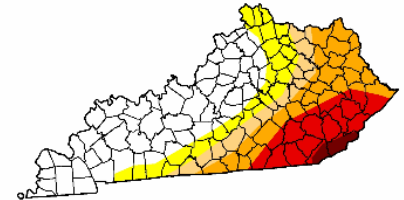


Released Thursday, November 8, 2007
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U.S. Drought Monitor Kentucky

November 6, 2007
Valid 7 a.m. EST

| Drought Conditions (Percent Area) | | | | | | |
|---|-------|-------|-------|-------|-------|------|
| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
| Current | 43.6 | 56.4 | 41.8 | 33.1 | 15.5 | 1.7 |
| Last Week (10/30/2007 map) | 43.6 | 56.4 | 41.8 | 33.1 | 15.4 | 1.7 |
| 3 Months Ago (08/14/2007 map) | 0.0 | 100.0 | 100.0 | 98.0 | 6.1 | 0.0 |
| Start of Calendar Year (01/02/2007 map) | 51.5 | 48.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Start of Water Year (10/02/2007 map) | 0.0 | 100.0 | 100.0 | 100.0 | 88.7 | 14.7 |
| One Year Ago (11/07/2006 map) | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



Intensity:

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

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

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

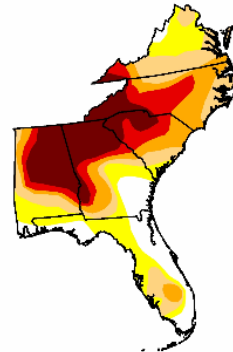


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U.S. Drought Monitor Southeast

November 6, 2007
Valid 7 a.m. EST

| Drought Conditions (Percent Area) | | | | | | |
|---|------|-------|-------|-------|-------|------|
| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
| Current | 13.8 | 86.2 | 67.7 | 48.6 | 32.7 | 20.4 |
| Last Week (10/30/2007 map) | 14.8 | 85.2 | 66.7 | 46.3 | 31.3 | 18.5 |
| 3 Months Ago (08/14/2007 map) | 2.4 | 97.6 | 84.7 | 55.2 | 31.3 | 18.8 |
| Start of Calendar Year (01/02/2007 map) | 52.2 | 47.8 | 10.2 | 1.5 | 0.0 | 0.0 |
| Start of Water Year (10/02/2007 map) | 10.1 | 89.9 | 77.9 | 63.8 | 45.2 | 24.0 |
| One Year Ago (11/07/2006 map) | 53.6 | 46.4 | 20.0 | 0.0 | 0.0 | 0.0 |



Intensity:

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

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

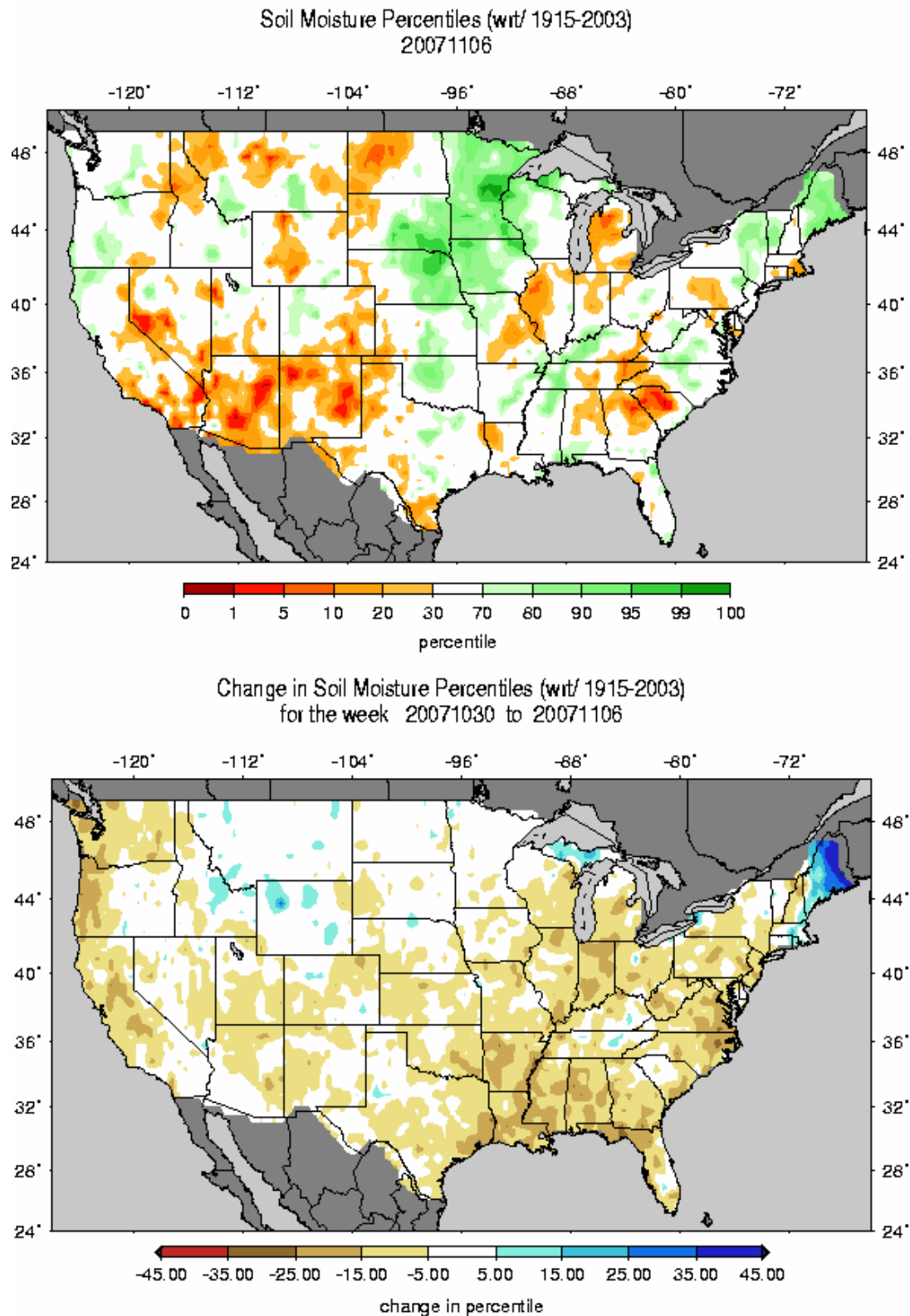
<http://drought.unl.edu/dm>



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Fig. 4b. Drought Monitor for Tennessee, Kentucky, and the Southeastern States with statistics over various time periods shows some of the severest drought conditions in the US. Note some worsening over Tennessee during the past week. The Southeast has also seen no improvement in the most intense drought regions.

Weekly Snowpack and Drought Monitor Update Report



Figs. 5 and 5a: Soil Moisture Ranking Percentile based on 1915-2003 climatology. Note significant deterioration over much of the U.S. since last week. Ref:
http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_qnt.gif &
http://www.hydro.washington.edu/forecast/monitor/curr/CONUS.sm_qnt.1wk.gif.

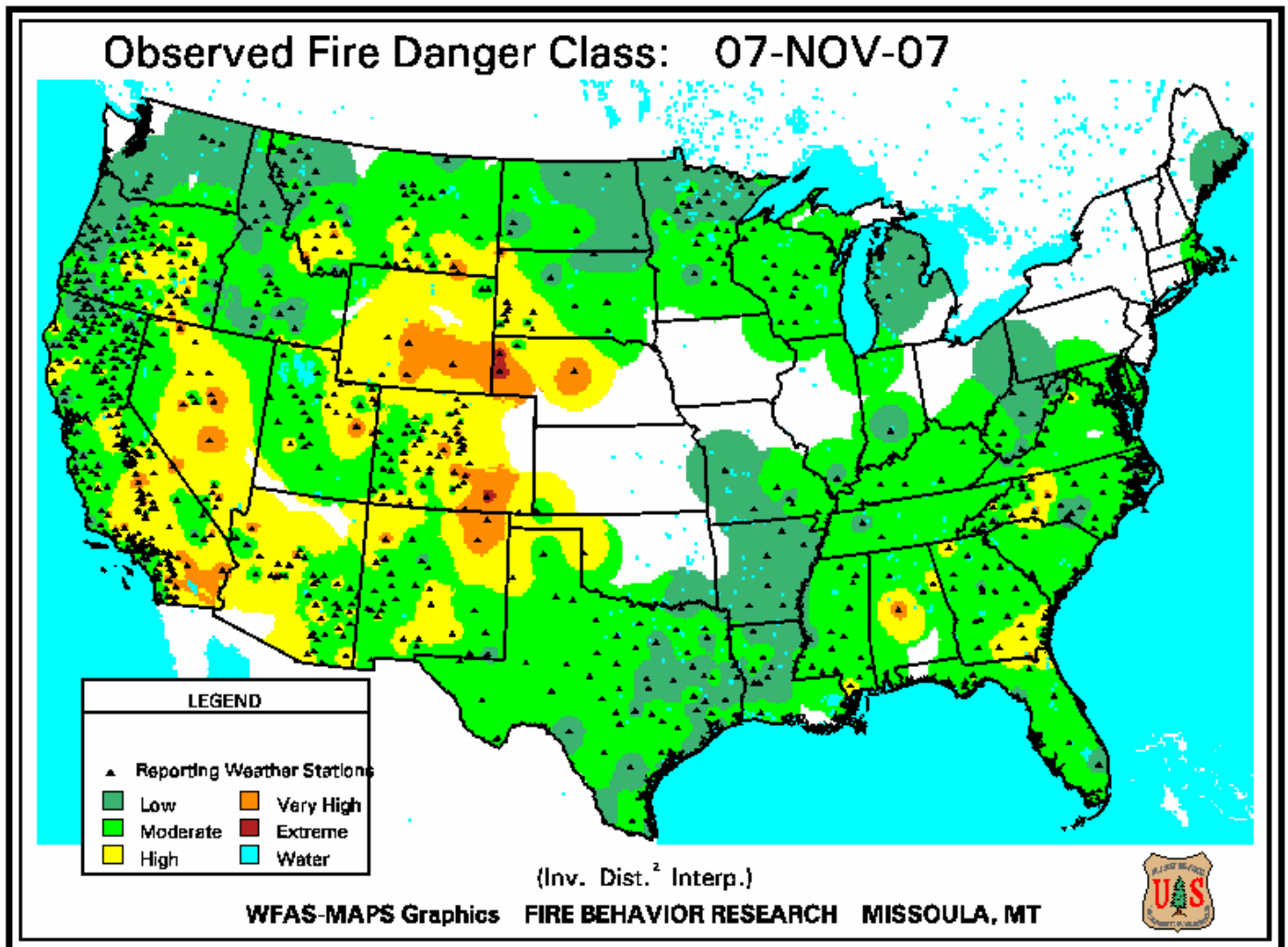


Fig.6. Observed Fire Danger Class. Conditions have worsened somewhat over southern California, Arizona, Nevada, Wyoming, Colorado, Nebraska, and western Texas since last week. Source: Forest Service Fire Behavior Research – Missoula, MT. Ref: http://www.fs.fed.us/land/wfas/fd_class.gif

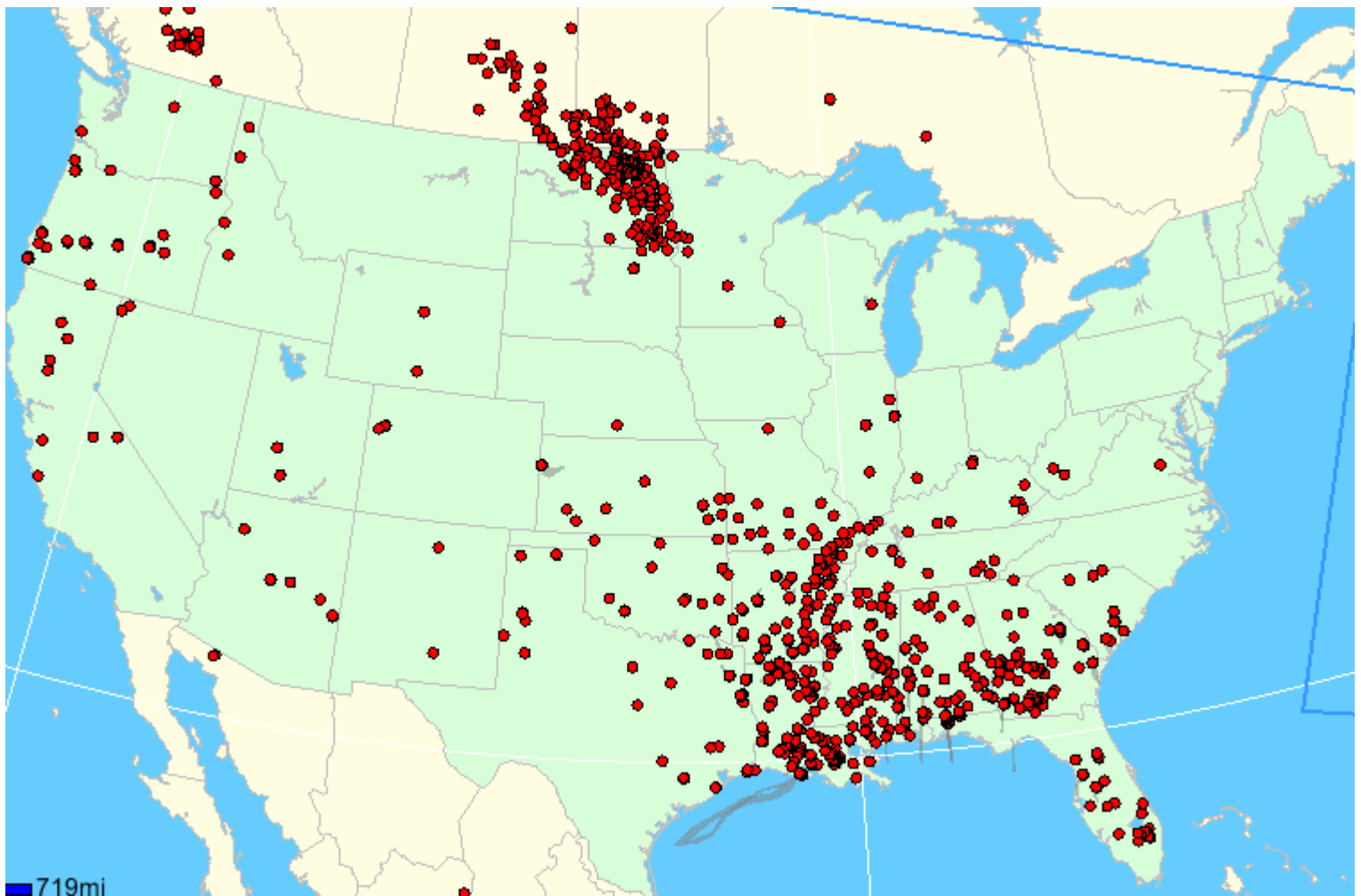
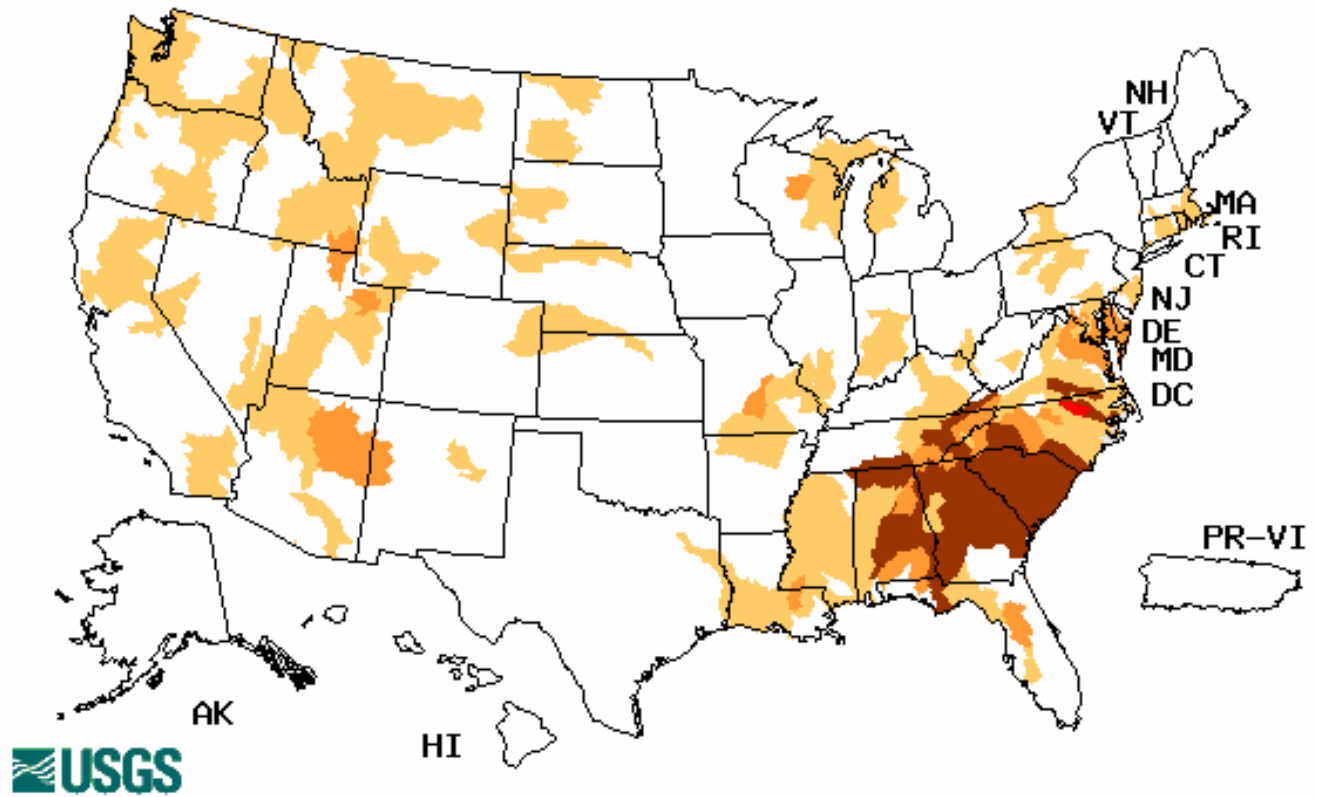


Fig. 6a. Location of active wildfires as detected from satellite across the U.S. as of 8 November 2007. Gray areas depict smoke and blue areas depict fire potential.

Ref: <http://www.firedetect.noaa.gov/viewer.htm>

Weekly Snowpack and Drought Monitor Update Report

Wednesday, November 07, 2007



| Explanation - Percentile classes | | | | |
|----------------------------------|---------------------------|-----------------------------|--------------|---|
| Low | <=5 | 6-9 | 10-24 | Insufficient data for a hydrologic region |
| Extreme hydrologic drought | Severe hydrologic drought | Moderate hydrologic drought | Below normal | |

Fig. 7. This week's map shows moderately lower stream flows over much the West but severe to extreme conditions over portions of the Southeastern have increased since last week.

Ref: USGS <http://water.usgs.gov/waterwatch/?m=dryw&w=map&r=us>

**Vegetation Health: Red - stressed. Green - fair.
Blue - favorable, White - Cold Surface**

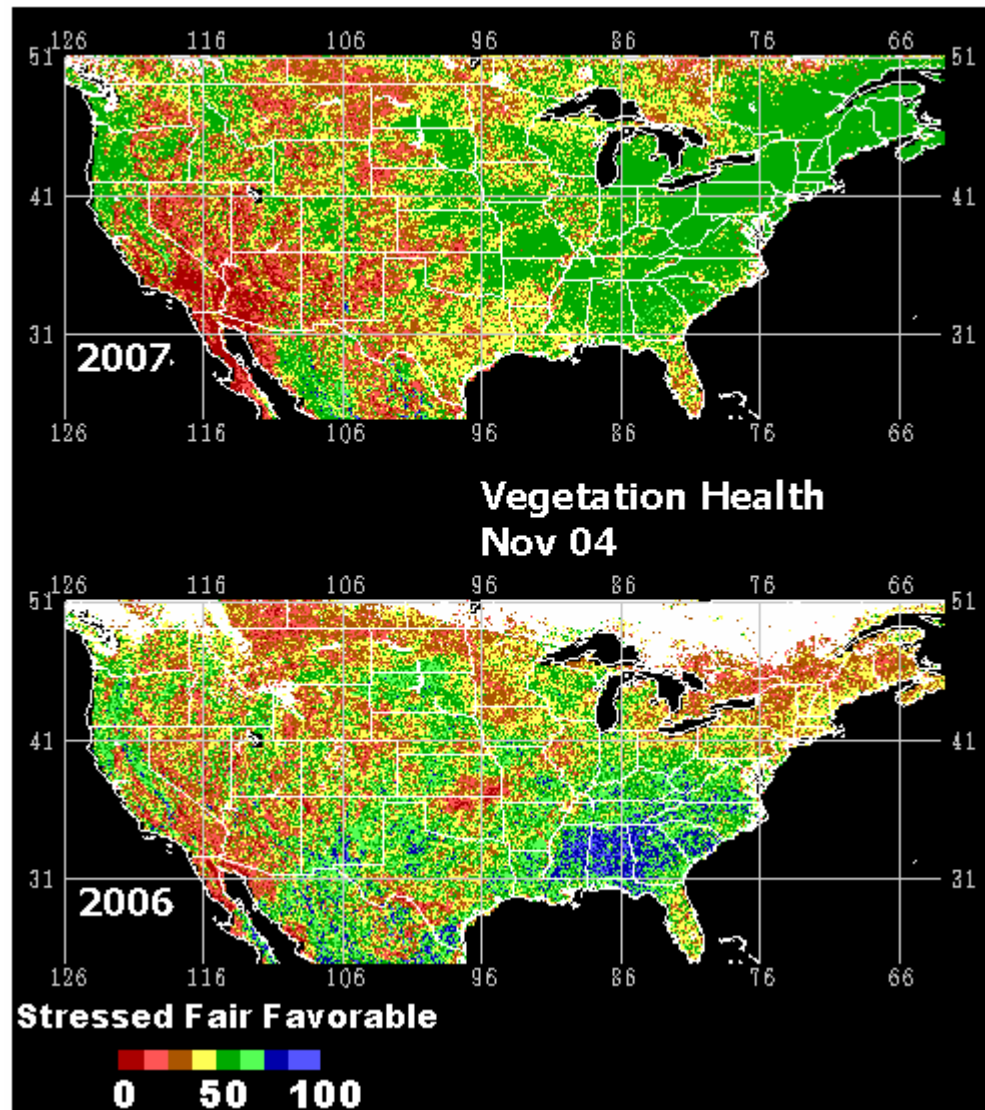


Fig. 8: This remote satellite AVHRR map shows stressed vegetation as compared to last year. Note worse conditions over the Interior West (especially over the Southwestern States) as compared to last November. Note: except for irrigated land, plants in the northern regions tend to show die-off as first freeze occurs. Ref: <http://www.orbit.nesdis.noaa.gov/smcd/emb/vci/usa.html>).

Weekly Snowpack and Drought Monitor Update Report

National Drought Summary -- November 6, 2007

The discussion in the Looking Ahead section is simply a description of what the official national guidance from the National Weather Service (NWS) National Centers for Environmental Prediction is depicting for current areas of dryness and drought. The NWS forecast products utilized include the HPC 5-day QPF and 5-day Mean Temperature progs, the 6-10 Day Outlooks of Temperature and Precipitation Probability, and the 8-14 Day Outlooks of Temperature and Precipitation Probability, valid as of late Wednesday afternoon of the USDM release week. The NWS forecast web page used for this section is:
<http://www.cpc.ncep.noaa.gov/products/forecasts/>.

The Southeast, Mid-Atlantic, Ohio and lower Missouri valleys: A cold front brought moderate to heavy showers to the Tennessee Valley on November 5-6, but this was otherwise a fairly dry week for the region. D4 (Exceptional Drought) continued from Alabama and northern Georgia into eastern Tennessee and the western Carolinas. Georgia, Alabama, and South Carolina recorded little rain this period. Adjustments to the drought areas based on the latest streamflow and other data led to a slight progression eastward of the D4 and D2 in North Carolina, D3/D2 in southwestern Virginia, and D2/D3/D4 in western Alabama. Tropical Storm Noel dropped over an inch of rain along the east coast of the Florida Peninsula, but the rains had little impact on the levels of Lake Okeechobee, which remained about 5 feet below normal. Continued dry weather led to expansion of the D0 in southern Missouri into northern Arkansas, as well as across southern Mississippi. Farther north, dry weather led to some expansion of D0 in Indiana, but rain and snow eliminated the D1 in the northern Lower Peninsula of Michigan.

The Northeast: The remnants of Tropical Storm Noel dropped heavy rains over eastern Massachusetts on November 3, resulting in the elimination of D1/D0 over the Cape Cod area. Two to 4 inches of rain pelted Barnstable County. Amounts were not enough to end the D1 drought farther west, affecting Rhode Island, Connecticut, and parts of Massachusetts. Light to moderate precipitation ended the D1 drought in western New York. Low streamflows led to the addition of D0 dryness over central Pennsylvania, where 60-day rainfall has been less than 60 percent of normal.

The Plains: With 60-day rainfall under 50 percent of normal, D1 drought expanded slightly across southwestern North Dakota and northwestern South Dakota. Short-term dry weather also led to development of D1 in the Oklahoma Panhandle and development of D0 in southern Oklahoma and the Lower Plains of Texas. D0 also expanded southwestward from northern Louisiana into central Texas. Farmers in parts of Texas need rain to improve grain and pasture conditions, and the dry weather has raised wildfire concerns.

The West: Continued warm and dry weather lead to expansion of D0 in eastern Arizona and central New Mexico. D3 persisted over western Arizona and southern California.

Alaska, Hawaii, and Puerto Rico: Flooding rains struck Oahu, with rainfall amounts exceeding 7 inches for the week ending November 6. The heaviest rains struck on November 2-4. Up to 10 inches deluged the southeastern part of the island. Heavy rains also struck Lanai and Molokai, but missed the other islands. Although the wetness eliminated D1 drought from Oahu, D0 continued across part of the island due to continued long-term rainfall deficits. Year-to-date rainfall in Honolulu is only 57 percent of normal, despite over 4 inches so far this month.

Weekly Snowpack and Drought Monitor Update Report

Looking Ahead: Weather that could affect dry or drought areas over the next 2 weeks includes: 1) above-normal rainfall during days 6-10 (November 13-17), and days 8-14 (November 15-21), from the Southeast northward along the Atlantic coast; 2) below-normal rainfall for the Southwest and southern Plains with above-normal temperatures in much of the West during the next 2 weeks; 3) above-normal rainfall for the Northwest from the coast to Idaho.

Author: [Douglas Le Comte, Climate Prediction Center, NOAA/NWS](#)

Dryness Categories

D0 ... Abnormally Dry ... used for areas showing dryness but not yet in drought, or for areas recovering from drought.

Drought Intensity Categories

D1 ... Moderate Drought

D2 ... Severe Drought

D3 ... Extreme Drought

D4 ... Exceptional Drought

Drought or Dryness Types

A ... Agricultural

H ... Hydrological

Updated November 7, 2007