UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE
PHOENIX, ARIZONA

Fire Weather Annual Report
2007

Prepared by:
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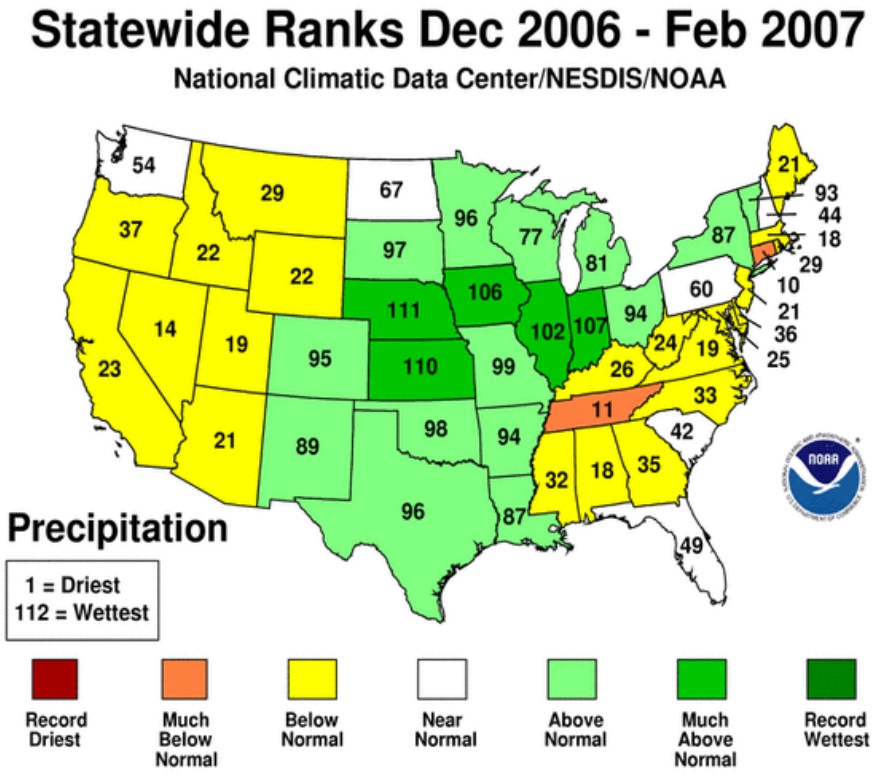
A. Fire Weather Overview

Summary of Seasonal Weather Highlights:

JANUARY-MARCH:

A dry winter exacerbated the drought conditions across the Southwest and Arizona did not receive much snow or rain during the 2006 winter months. As a result, precipitation remained well below average and there was little development in the seasonal snow pack. The Basin Outlook Report prepared by the Natural Resources Conservation Services (NRCS) the first week of January 2007 indicated that basins across the state measured only 32% to 52% of the 30-year average snow pack. Cumulative precipitation was also below average, with basins ranging 47% to 64% of normal as the state entered its 12th year of drought.

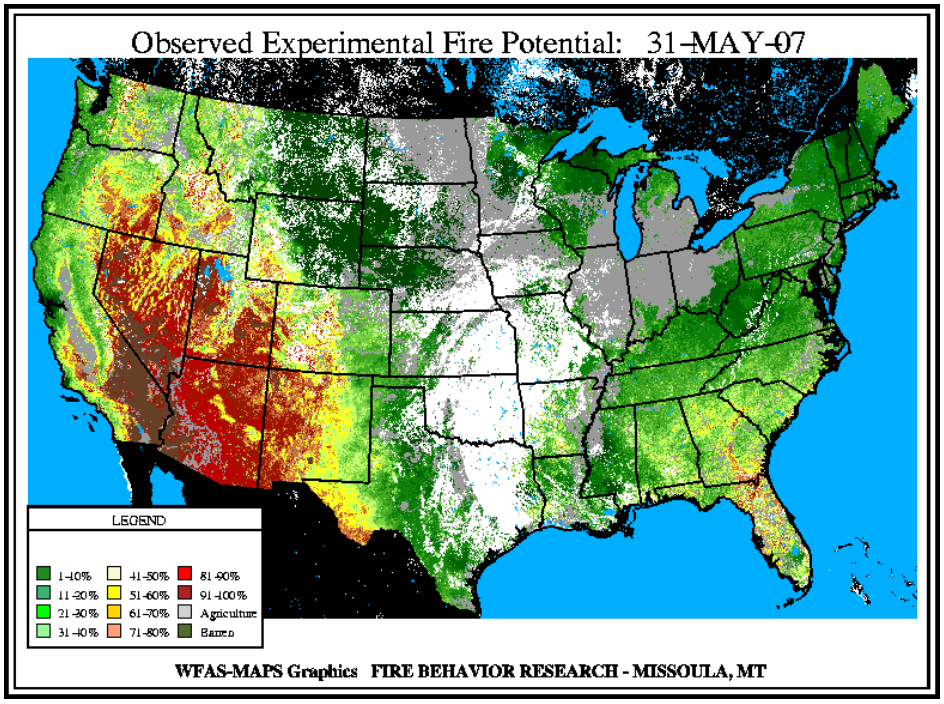
After several winter storms in January, the NRCS mid-winter report indicated some improvement in snowpack levels across the western United States, however Arizona still lagged behind the 30-year average. Even though some storms delivered significant precipitation amounts to central California and parts of Nevada, overall the southwestern United States received little or no precipitation and remained below average through February.



Unusually strong high pressure developed over the desert Southwest in March and allowed daytime temperatures soar into the upper 90s over the lower deserts, with many locales setting near-record and record breaking temperatures. Fuel moisture levels, primarily in the 10-hour and 100-hour fuels remained unusually low across the southwestern United States through March. The precipitation that fell earlier in the season did contribute to a meager green-up in grass and brush fuels and mitigated the onset of the fire season to some degree in far east-central Arizona. The reprieve was short-lived for other parts of the region as anonymously warm temperatures spiked wildland fire activity in southern California and helped the *241* and *Sierra* fires consume abundant frost-killed and dry fuels. Arizona heralded the first fires of the season in March with the *Palace Fire* south of Prescott, and the *Elgin Fire* near Nogales.

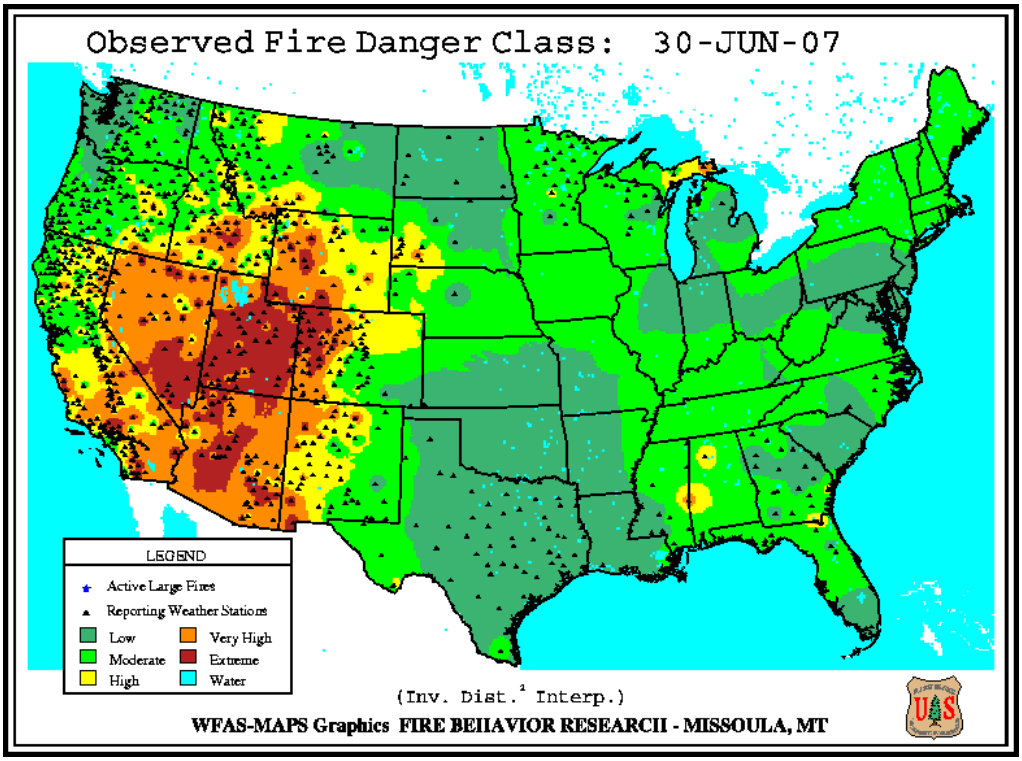
APRIL-JUNE:

Fine fuels continued to dry and cure with the advent of warmer temperatures despite the weak weather systems that moved through Arizona in April. Even though fire activity was minimal during April, small fires such as the *San Rafael* still burned in southeast Arizona along the international border. By the end of May, an anomalously high fire potential existed across the Southwest, as conditions were quite dry and temperatures climbed above normal, facilitating the start of many fires in the state.



The *Vincent* and *Red Basin* fires flared near Prescott, the *Paris* and *Monkey* fires burned in Northern Arizona, and the *Promontory*, *Ponderosa*, *Shadow Pines* and *Green* fires charred several thousand acres along the Mogollon Rim east of Payson. The *Sutherland*, *Yaqui*, *San Antonio* and *Lucky 3* fires also started in southeastern portions of the state. Even as far west as the southern California coast, the *Catalina Island Fire* flared-up on the small island west of Long Beach, California.

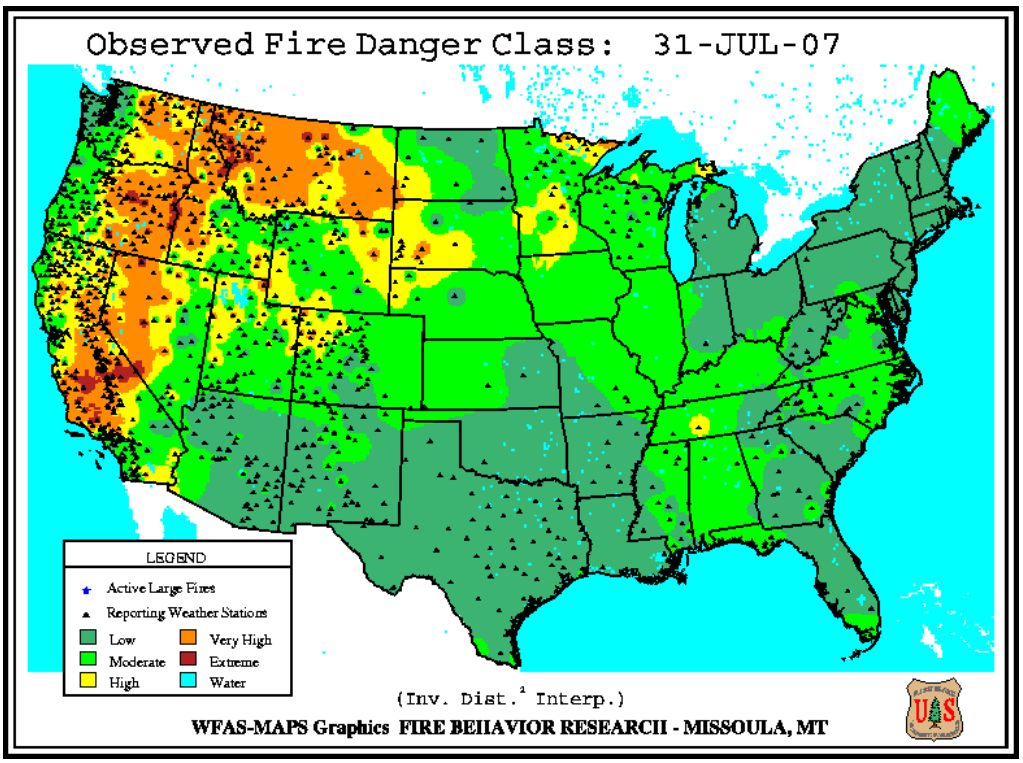
June fires such as the *Alhambre*, *Mansfield*, *Manzora Three* and *Curly Horse* were mainly confined to Southeast Arizona. Many of these starts were attributed to lightning from storms that formed over the area as moisture gradually pushed northward from Mexico. The *Chitty Fire* burned in the Apache-Sitgreaves National Forest south of Alpine along the Arizona-New Mexico border, consuming pine fire and spruce. The *Birdie* and *Slide* fires were geographical exceptions and scarred acreage in Northern Arizona. Unusually dry conditions and severe to extreme drought persisted for several more weeks and the fire danger remained elevated.



JULY-SEPTEMBER:

The monsoon appeared in July effectively shutting down the fire season across Arizona with the seasonal influx of moisture and precipitation. The seasonal storms displayed a good deal of variability, delivering average to above-average precipitation to southeast and north-central Arizona and southwestern New Mexico, while the deserts of southwest Arizona and southeast California received considerably less rainfall.

As fires sparked and the number of starts increased across the northern Rocky Mountains in July and August, a high fire danger still remained throughout most of California as illustrated in the following graphic. The Drought Monitor for the western United States indicated very dry conditions and extreme drought persisted over southern California into September. California wildfires such as the *Zaca*, *North* and *Angel* fires burned thousands of acres and impacted the region with smoke.



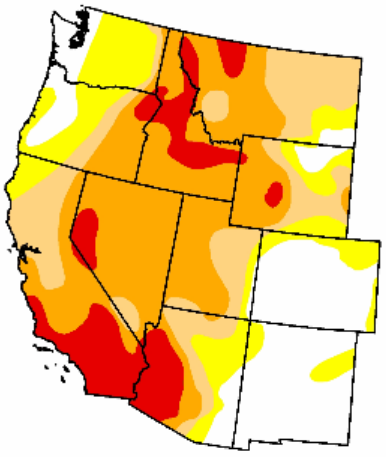
U.S. Drought Monitor

West

October 2, 2007
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	22.0	78.0	62.3	44.7	12.4	0.0
Last Week (09/25/2007 map)	20.3	79.7	63.0	45.4	12.4	0.0
3 Months Ago (07/10/2007 map)	24.9	75.1	57.6	31.8	9.4	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 (10/03/2006 map)	43.5	56.5	33.5	16.9	5.2	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

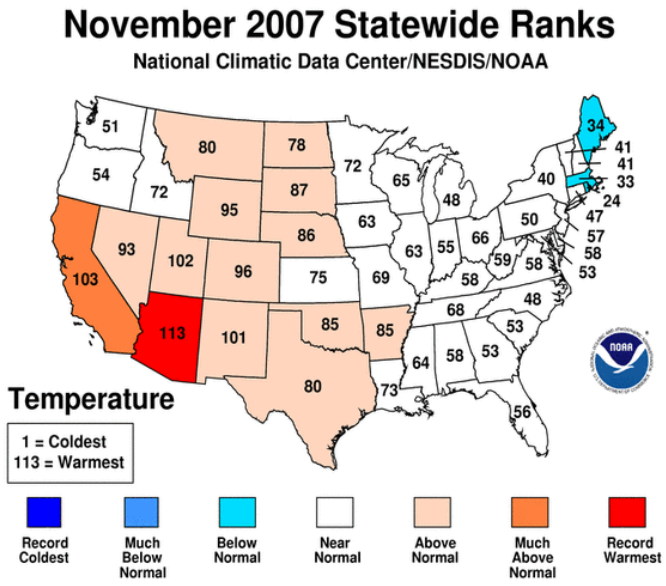
http://drought.unl.edu/dm

Released Thursday, October 4, 2007

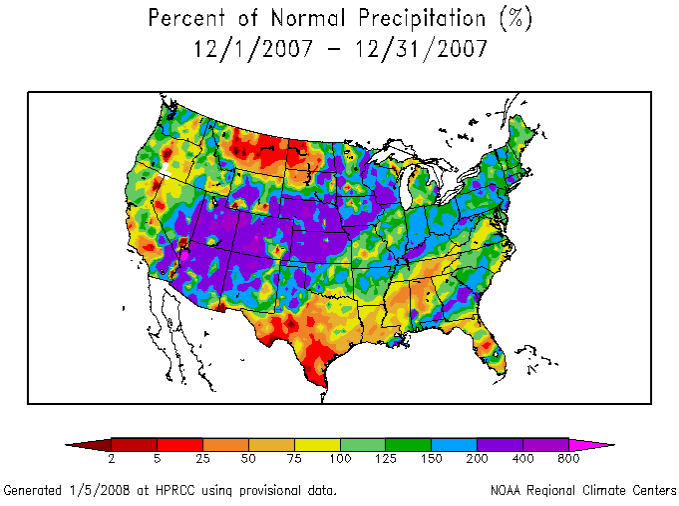
Author: J. Lawrimore/L. Love-Brotak, NOAA/NESDIS/NCDC

OCTOBER-DECEMBER:

Long-term moisture deficits and strong Santa Ana winds set the stage for devastating wildfires in Southern California during the month of October. Over thirteen fires burned and consumed approximately 900,000 acres within a couple of weeks. Fire activity eventually diminished over California and throughout most of the western United States by early November, even though temperatures ran much warmer than average and Arizona set a new record high average temperature that month.



In contrast to a dry and warm year, Arizona received above normal precipitation and below normal temperatures during the month of December after a series of intense winter storms tracked through the state and the Four Corners region. This wetter and cooler pattern continued over the Southwest through the end of the year and offered a reprieve to the long-term drought, especially over the White Mountains and the eastern Mogollon Rim in Arizona, and the mountains of western New Mexico.



B. Red Flag Warning Verification

The National Weather Service in Phoenix issued a total of **63** Red Flag Warnings (RFW) all due to strong winds and low relative humidity. NWS Phoenix does not issue a watch or warning for dry thunderstorms in Arizona per the Region 3 AOP. Per the Region 5 AOP, the criteria for a dry lightning RFW apply only to fire weather zones 230 and 232 in southeast California. There were **no** Red Flag Warnings issued for dry thunderstorm events covering these zones in 2007.**

- Number of RFWs Issued (by zone)
- Probability of Detection (POD) (Highest Skill = 1.0)
- Far Alarm Ratio (FAR) (Highest Skill = 0.0)
- Critical Success Index (CSI) (Highest Skill = 1.0)
- Average Lead Time of the Warning

Zone	# Issued	POD	FAR	CSI	Avg. Lead Time
131/232	17	1.00	0.24	0.76	14.72 hours
132	15	1.00	0.00	1.00	13.73 hours
133	7	1.00	0.43	0.57	12.50 hours
230	10**	1.00	0.70	0.30	15.75 hours
232	14**	1.00	0.29	0.71	14.51 hours
Total	**63**	**1.00**	**0.29**	**0.71**	**13.94 hours**

C. Fire Weather Watch Verification

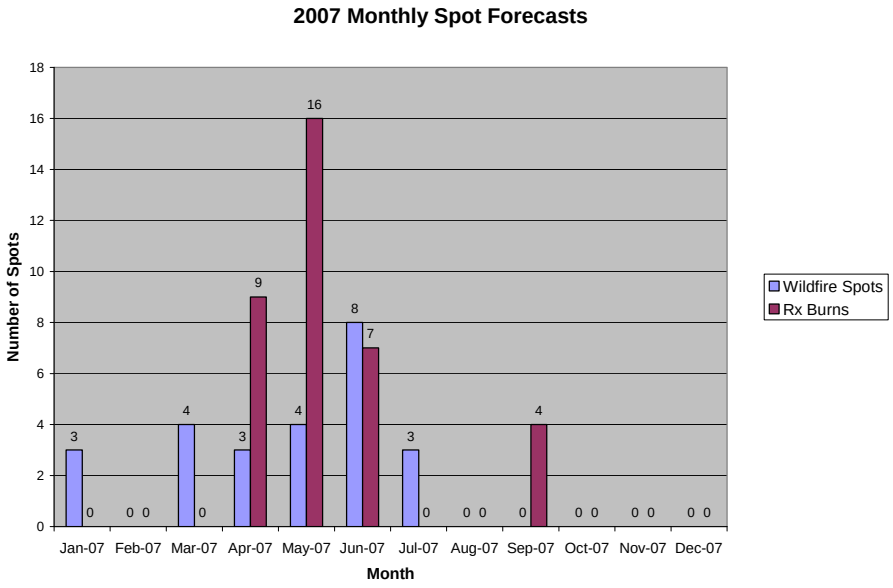
The National Weather Service in Phoenix issued a total of **41** Fire Weather Watches during 2007, all due to strong winds and low relative humidity.

Zone	# Issued	Upgraded to RFW	Verified	Avg. Lead Time
131/231	10	9	7	35.42 hours
132	9	8	8	35.07 hours
133	6	5	2	37.00 hours
230	7	7	2	33.50 hours
232	9	9	6	32.58 hours
Total	**41**	**38**	**25**	**33.10 hours**

D. Spot Forecasts

The National Weather Service in Phoenix issued a total of **61** spot forecasts during the 2007 calendar year. This year, there were no spot forecasts issued for the Lower Colorado River Valley (131/231), the Southeast California deserts (232), or in Joshua Tree National Park (230). The chart below breaks down the number and type of spot forecast issued per month.

RX BURNS	WILDFIRES	OTHER	TOTAL
36	25	0	61



E. Incident Meteorologist (IMET) Dispatches

The National Weather Service in Phoenix participated in **six** (6) dispatches in 2007. During those six dispatches, IMET Valerie L. Meyers was dispatched out to fires for a total of **34** days.

WFO PHOENIX:

Incident Name	Location	Dispatch Days	Dispatch Dates
1) Zaca II Fire	Santa Barbara, CA	6 Days	7/19 – 7/24/07
2) Cascade Complex	Cascade, ID	9 Days	8/14 – 8/22/07
3) North Fire	Santa Clarita, CA	6 Days	9/4 – 9/9/07
4) Angel Fire	Julian, CA	4 Days	9/16 – 9/19/07
5) Grass Valley Fire	Lake Arrowhead, CA	4 Days	10/23 – 10/26/07
6) Slide Fire	Running Springs, CA	5 Days	10/27 – 10/31/07

F. Fire Weather Training and Outreach Activities

The National Weather Service in Phoenix continued to be active with fire weather training assignments and/or outreach activities in 2007.

Dates	Activity	Agency	Location
February 13-14	Region 3 Preseason Meeting	NWS and Local Agencies	Phoenix, AZ
February 28	Preseason Meeting	Arizona Forestry Division	Phoenix, AZ
April 12	State Wildland Fire Exercise	ADEM and Arizona State Lands	Phoenix, AZ
November 13-14	Region 5 Fire Weather Meeting	NWS and CA Agencies	Santa Ana, CA