

SACRAMENTO FIRE WEATHER



2007

ANNUAL SUMMARY

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NWS Sacramento began high season fire weather operations on April 30th. We began early this year due to the dry conditions in Southern California and in coordination with other California offices. During high season, WFO STO issues fire weather planning forecasts twice a day, as well as NFDRS trend forecasts every afternoon by 3:30 PM. During low season one fire weather planning forecast is issued each afternoon. Trend forecasts are not issued during low season operations.

WFO STO transitioned back to low season operations on October 29th. By then, several forests had already dropped into their low season operational status. We gradually transitioned out of producing the trend forecasts for these forests by the end of October. This year in the low season we are doing things a bit differently. We run a cron job which automatically removes the 'tonight' portion of the previous day's afternoon forecast the following morning by 7:30 AM. This allows us to keep the ECC forecasts current on the web. Forecasters can then simply edit the discussion portion of the web based ECC forecasts. In this manner, we cater to those forests that only read the ECCDA forecast over the radio in the morning during low season. It turns out the half of our forests read them in the morning and the other half in the afternoon.

While the GACC resumed high season operations in late October due to the heightened fire danger in Southern California, WFO STO did not encounter the same sort of critical conditions. We were able to remain in low season operations after October 29th.

There were 364 spot forecasts issued this year, up from 324 in 2006 and 269 in 2005. The majority of these were prescribed burns (293 or 80%). 68 spots (19%) were issued for wildfires, down from over 100 in 2006. Nearly 20% (69) of our spot forecasts were issued between October 5th and October 21st 2007. Most of these were pile burns. October is typically a busy time of year for spot forecasts. It was interesting to note that in 2006, June had the heaviest spot forecast workload. A series of wildfires broke out the week of July 10th, after which spot forecast activity was relatively quiet. Spot forecast activity remained quiet during the hot weather we had from the middle of August into the first week of September. Only 11 spots were issued in September. Burn season seemed to stretch later this year as STO issued 24 spot forecasts during the month of December.

Our first red flag event occurred on May 31st as thunderstorms crept north from Arizona into the Sierra and northern California. June and July saw strong high pressure develop over the desert southwest states. Unseasonably strong low pressure systems induced a south to southeast flow aloft at times, especially during the first two weeks of July. WFO STO issued 14 red flag warnings for dry lightning during this period. 2007 saw a large reduction in the number of red flag warnings issued for gusty winds due to the prevailing position of the upper ridge. Our last red flag warning was issued on September 9th for gusty winds across the northern zones. This was unusual, since September and October are the months which average the highest number of red flag warnings for the forecast area.

WFO STO conducted extensive outreach visits to the national forests and CAL-FIRE units in 2007. Our outreach trips in March, April and June allowed us to visit all of our major customers

this year. Forester and dispatch feedback was collected.

Instructional workload continued to be one of the busiest of any office in the NWS. S-190, 290, 390, 490 and 590 classes totaled 17 for the year of 2007.

RED FLAG WARNING VERIFICATION FOR 2007

Sacramento fire weather issued a total of 29 individual pre-event zone red flag warnings during 2007. This was a significant decrease from 65 in 2006. 2007 did not experience the extreme heat wave seen in July of 2006. The summer of 2007 recorded near normal temperatures. There were periods when moisture crept north along the mountains, triggering showers and thunderstorms. It was common for these storms to begin dry and then transition to wet after several hours. 14 red flag warnings were issued for dry lightning, primarily for our mountain zones, by July 10th.

Thunderstorm activity decreased by mid July as unseasonably strong low pressure systems moved into the Pacific Northwest. Three red flag warnings were issued for gusty winds and low humidity for the Burney Basin and Sierra zones on July 16th. Similar low pressure systems prompted the issuance of more red flag warnings for the Burney Basin August 4th and 11th. Verification of these events became a topic of some debate as there are few sensors across northeast Shasta County. These low pressure systems dropped rare measurable summer precipitation across the area at times. More low pressure systems prompted the issuance of red flag warnings for gusty winds and low humidity August 16th and September 9th. These resulted in a strong onshore flow in the valleys and gusty winds in the mountains. Temperatures across our CWA were below normal for September and October.

Despite very dry fuel conditions heading into this season, wildfire activity was relatively quiet across the Sacramento CWA in 2007. Thunderstorms did spark some fires in the mountains, but the larger fires generally remained east of the Sierra crest or south of the Sacramento CWA.

Improvements in our verification statistics in 2007 from 2006 include...Red flag warning lead time increased from 15 hours to almost 22 hours for wind events. POD for dry lightning increased from 70 to 88. CSI for dry lightning red flag warnings increased from 50 to 60. Lead time for all red flag warnings increased from 17.4 hours in 2006 to 21.7 hours in 2007.

POD's for synoptic wind events dropped from 94 to 83 this year, probably because there were so many less wind events. Lead time for dry lightning events was almost unchanged this year. Our ratio of watches to verified red flag warnings improved for wind events, but fell slightly for dry thunderstorms.

The Red Flag and Fire Weather Watch verification statistics for the 2007 fire season follow below:

Red Flag Warnings

	Synoptic Scale	Dry Thunderstorms	Total or Average
Number of Red Flag Warnings	15	14	29
Number of Correct Warnings	12	7	19
Number of Incorrect Warnings	3	7	10
Number of Events Not Warned	3	2	5
POD for Red Flag warnings	83.0%	88.0%	85.0%
CSI for Red Flag warnings	71.4%	60.1%	67.4%
FAR for Red Flag warnings	16.7%	33.3%	25.6%
Red Flag warning Lead Times	21.6 Hours	21.7 hours	21.7 Hours

Fire Weather Watches

	Synoptic	Dry Thunderstorms	Total or Average
Number of Fire Weather Watches	11	14	25
Number of Watches Verified	9	7	16
Lead time of verified Watches	21 hours	25 hours	23 Hours

SPOT FORECASTS ISSUED FOR THE YEAR 2007

Sacramento fire weather issued a total of 364 written spot forecasts in 2007. This represents an increase of 40 spots from 2006 and 95 spots from 2005.

Most of our spots continue to be prescribed burns, the majority of which come from the USFS. The first three weeks of May saw an active period of prescribed burns and test projects. We issued 82 spots during the months of May and June. Dry lightning sparked a series of wildfires the week of July 10th. Spot forecasts tapered off in July as the month was dominated unseasonably strong low pressure systems brushing northern California. August saw a hot period develop toward the end of the month that persisted into early September. Spot forecast requests dropped off during this time. October was a cool month as persistent low pressure developed along the west coast. Spot forecast requests surged, with 90 requests from mid October to early November. Pile burns, which seem to be accounting for an increased number of our spots,

continued into December this year.

We had no wild land fire use spot requests in 2007. Most of these have been handled by the GACC. There were no Hazmat training event requests.

Agencies receiving written spot forecasts included the USFS, CAL-FIRE, NPS and USFWS.

The breakdown of written spot forecasts for 2007 follows:

For Wildfires (USFS)	44
For Wildfires (CAL-FIRE)	24
For Burns (USFS)	195
For Burns (CDF)	52
For Burns (USFWS)	40
For Burns (NPS)	9
Misc Wildfires	0
Misc Burns	0
Wildland Use Fires	0
OES Hazmat Training	0
Total Written Spot forecasts	<u>364</u>

INCIDENT METEOROLOGIST DISPATCHES FOR 2007

Sacramento fire weather participated in 5 IMET dispatches in 2007. IMET Mike Smith responded to 4 incidents and Jason Clapp had a training fire. One of these incidents was within WFO Sacramento's CW, a second was in southern California, and the rest were out-of-state. Total IMET dispatch days from WFO STO totaled 34 days. This was more than last year (31) and 2005 (9 days). The number of IMET dispatches was limited by only having one certified IMET.

A breakdown of WFO STO IMET dispatches including incident name, dates dispatched and fire weather district the incident was in follows:

<u>Incident Name</u>	<u>IMET</u>	<u>Dispatch Dates</u>	<u>Fire Weather District</u>
Black Rock Gulch Fire	Mike Smith	07/07/07 – 07/14/07	Las Vegas
Middle Fork Complex	Jason Clapp	07/27/07- 7/31/07	Boise
Colby Fire	Mike Smith	08/11/07 – 08/14/07	Sacramento
BBD Fire	Mike Smith	08/20/07 – 08/24/07	Missoula
Poomacha Fire	Mike Smith	10/24/07 – 11/4/07	Oxnard

Number of days on Incidents

Jason Clapp	5
Mike Smith	29
Total Days of IMET support from WFO Sacramento	<u>34</u>

FIRE WEATHER TRAINING ASSIGNMENTS IN 2007

Sacramento fire weather participated in 17 teaching assignments in 2007. Most of these were for the weather portion of the “Basic Fire Behavior” S-290 course. Mike Smith also taught an S-490 course, an S-390 course, an S-190 course and an S-590 course. The 17 courses taught in 2007 represented a decrease from 24 taught in 2006. However, WFO Sacramento continues to be a big help to state and local agencies that must comply with the S-290 wildland fire fighting course. Special thanks go to Mike Smith, who has shouldered a large teaching workload this year.

The courses taught, locations, agency served and instructors follow:

<u>Course Name</u>	<u>Location</u>	<u>Date</u>	<u>Agency Served</u>	<u>Instructor</u>
Basic Fire Behavior S-290	McClellan	1/16	NPS	Mike Smith
Basic Fire Behavior S-290	McClellan	1/22	USFS	Mike Smith
Basic Fire Behavior S-290	McClellan	1/29	Various	Mike Smith
Basic Fire Behavior S-290	McClellan	2/26	Various	Mike Smith
Basic Fire Behavior S-490	McClellan	3/6	Various	Mike Smith
Basic Fire Behavior S-290	McClellan	4/3	Various	Mike Smith
Basic Fire Behavior S-290	Calaveras Co	4/6	CDF	Mike Smith
Basic Fire Behavior S-290	Vacaville	4/16	Various	Mike Smith
Basic Fire Behavior S-290	Vallejo	4/23	Various	Mike Smith
Basic Fire Behavior S-290	McClellan	4/27	USFS	Mike Smith
Basic Fire Behavior S-290	Folsom	5/1	Various	Mike Smith

Basic Fire Behavior S-390	Vandenberg	5/8	USFS	Mike Smith
Basic Fire Behavior S-290	Ione	6/5	CDF	Mike Smith
Basic Fire Behavior S-290	Sonora	6/8	USFS	Mike Smith
Basic Fire Behavior S-190	Placerville	6/11	USFS	Mike Smith
Basic Fire Behavior S-290	Ione	10/22	CDF	Mike Smith
S-590 prep course	Tucson	12/4	CDF	Mike Smith