

***EUREKA FIRE WEATHER
ANNUAL REPORT 2005***

for

NORTHWEST CALIFORNIA



Geary Fire – Orleans, CA 9/4/05

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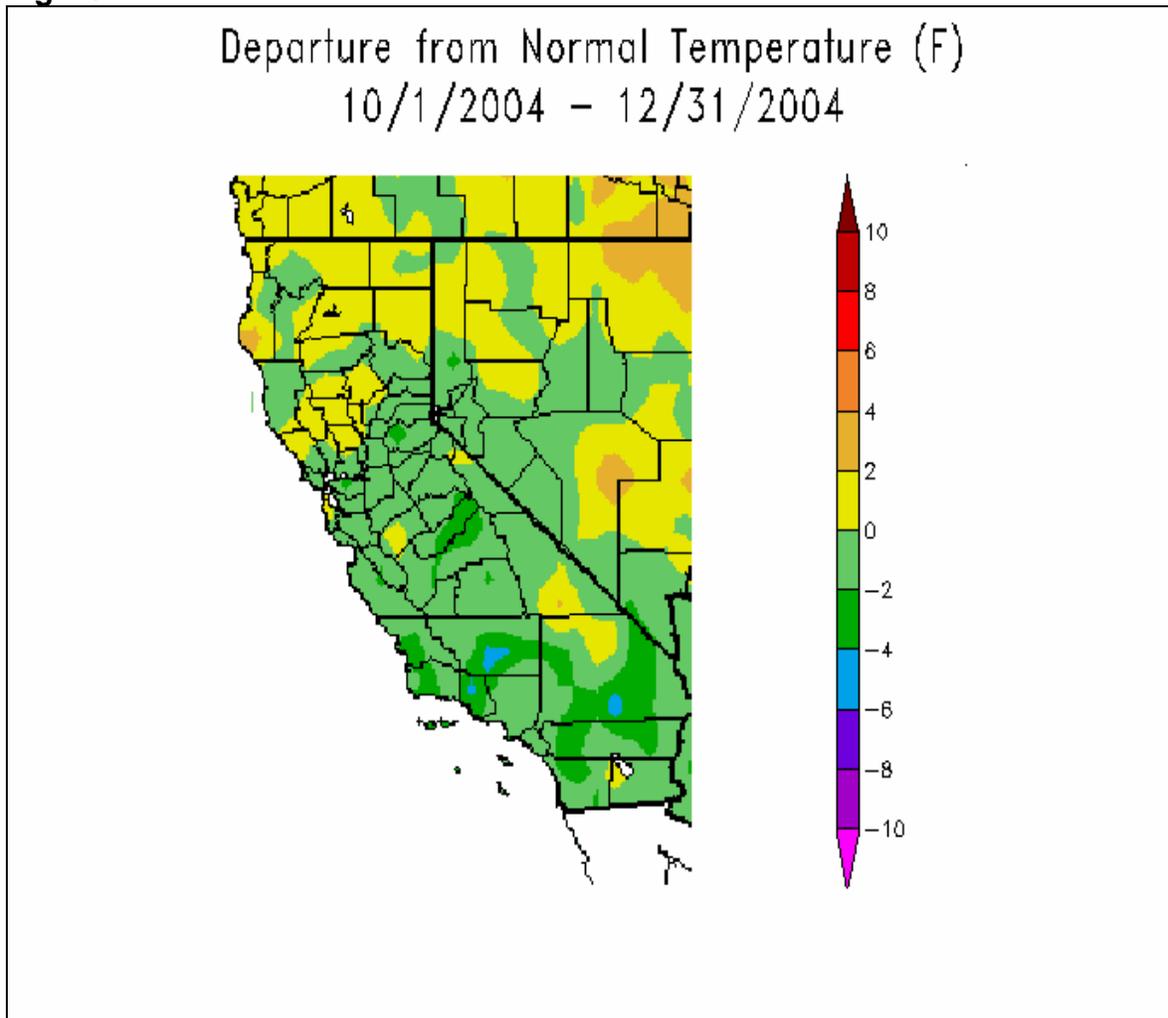
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I. WEATHER REVIEW

Fall & Winter 2004 (Oct – Dec)

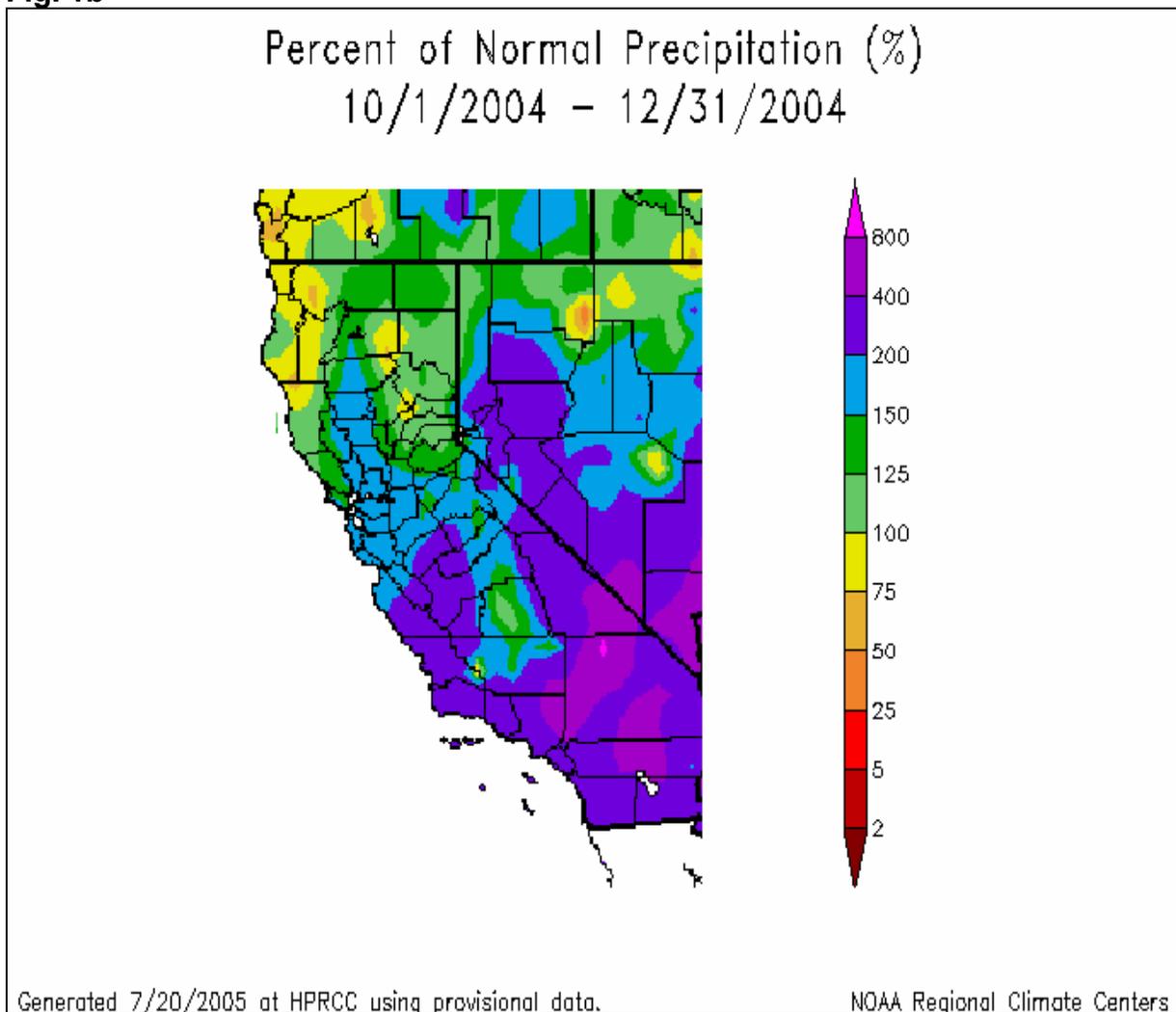
The wet season began slowly in October of 2004 as high pressure over northern California persisted into the middle of the month. By the third week of October the jet stream sagged south across the region and ushered in a series of Pacific storms which brought an abundance of rain to the northwest portion of the state. The weather pattern changed abruptly in November as a blocking ridge of high pressure built over much of California bringing dry conditions and very little storm activity to the state. Beginning in December a strong ridge of high pressure moved north over the Pacific Northwest and forced the storm track over the southwestern U.S. By late December a series of major Pacific storms brought extreme, and in some areas, record precipitation to southern California, portions of central California and the Desert Southwest.

Fig. 1a



The rain and snow triggered flooding and mudslides to our southern neighbors and brought over 3 inches of rain to the coastal areas of northern California during the last week of December. Despite the late December rains and the above normal rainfall during late October, the tri-monthly period showed below normal precipitation...especially across the interior portions of northwest California (Fig. 1b), while temperatures during the late fall and early winter were slightly above normal (Fig 1a).

Fig. 1b



Winter and Spring 2005 (Jan – Mar)

Storms continued to roll across northern California during the first week of January with nearly 10 feet of snow around the Tahoe Basin through January 3rd . Locally, nearly four inches of rain fell across the district coastal areas with an abundance of snow fall over the northwest interior mountains. High pressure returned to northern California through the remainder of January...persisting into February, preventing any significant precipitation from falling. The blocking ridge also brought many sunny days to the region which was reflected by a warmer than normal temperature trend (Fig. 1c). The storm track finally returned during the last two weeks of March when 5 to 6 inches of rain fell along the coast with plentiful snow added to an already abundant snow pack. Similar to the late fall and winter of 2004, the abundance of late spring precipitation was not enough reach normal precipitation values...thus (Fig. 1d) shows the tri-monthly period falling well below normal, however, the snow pack over the northwest California was slightly above normal (Fig. 1e).

Fig. 1c

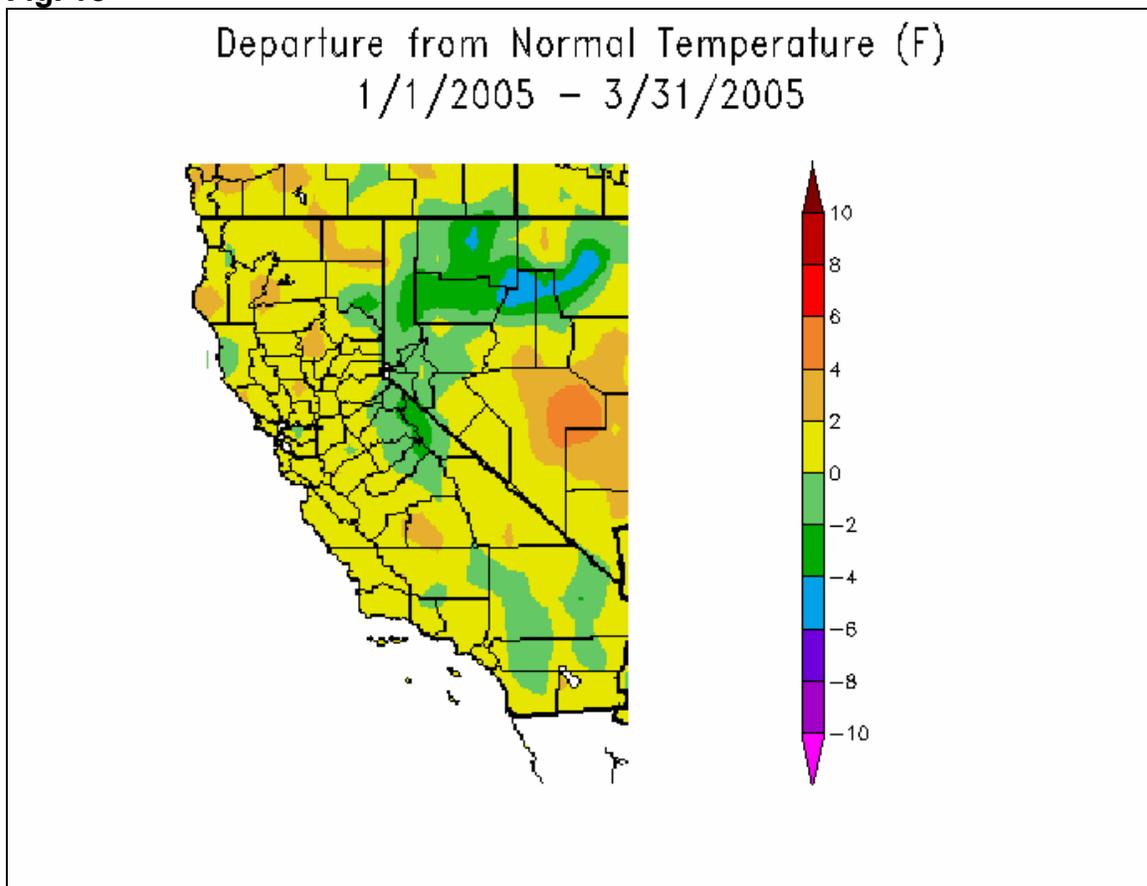


Fig. 1d

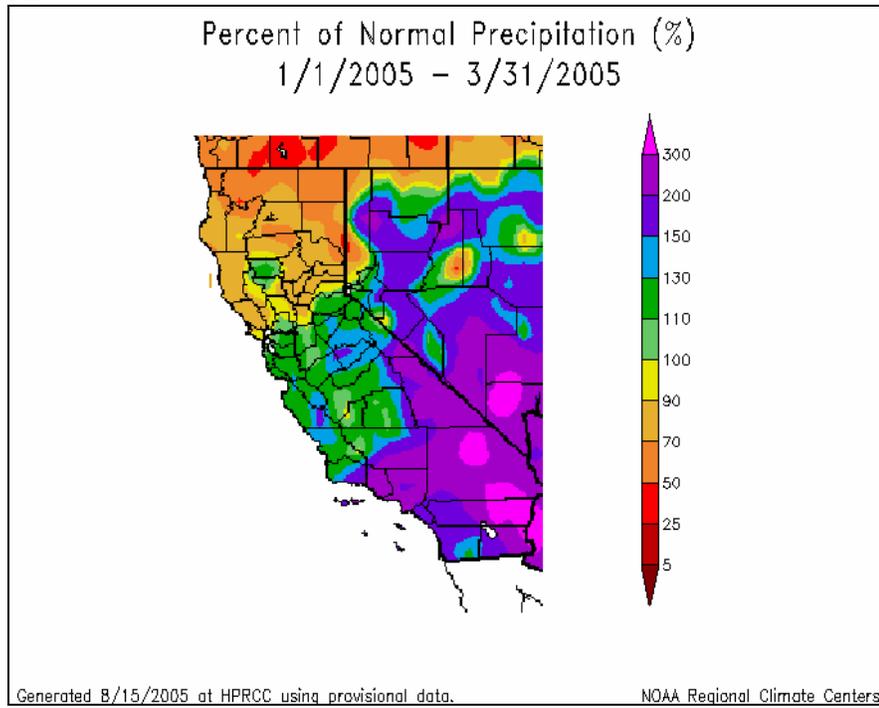
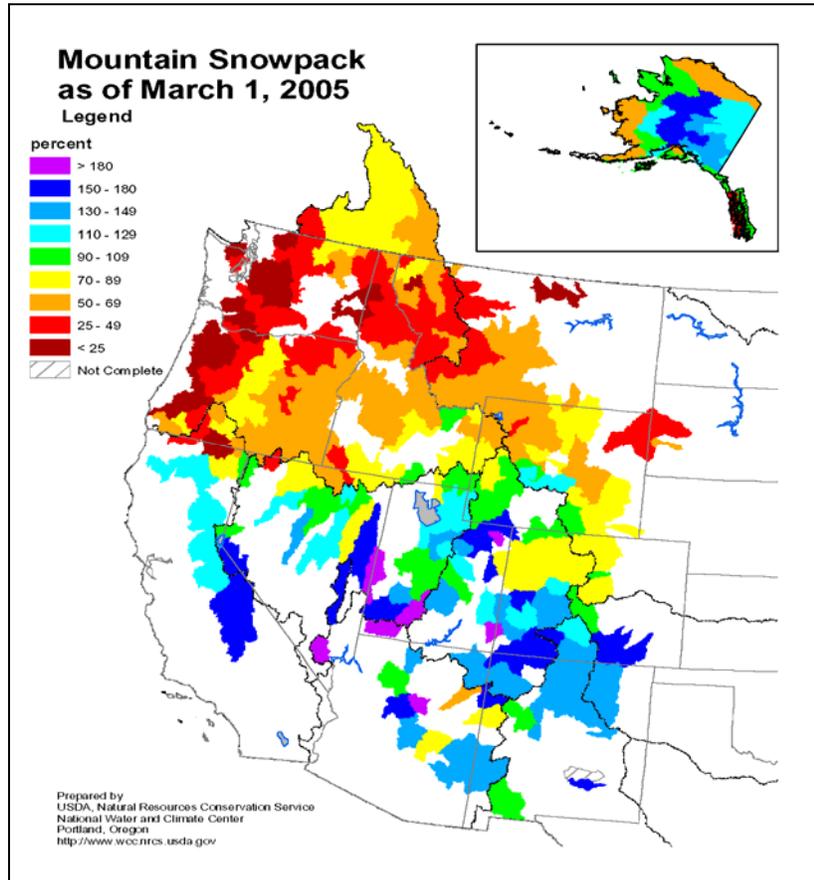


Fig. 1e



Spring and Early Summer 2005 (Apr-Jun)

The beginning of fire season, which is usually slated for mid May, was delayed as Mother Nature balanced the books with a very wet spring. Above normal rainfall (Fig. 1g) occurred during April, May and June as a progressive storm track supplied a succession of storms. The constant southerly flow along the coast, not only supplied plenty of rainfall but kept temperatures relatively warm as evidenced by the warmer than normal average for the tri-monthly period (Fig 1f). Across the interior the consistent cloud cover associated with the storms helped maintain cooler than normal temperatures. An unseasonable storm arrived in mid-June and offered nearly 3 inches or rain to the coast which helped continue the delay of fire season.

Fig. 1f

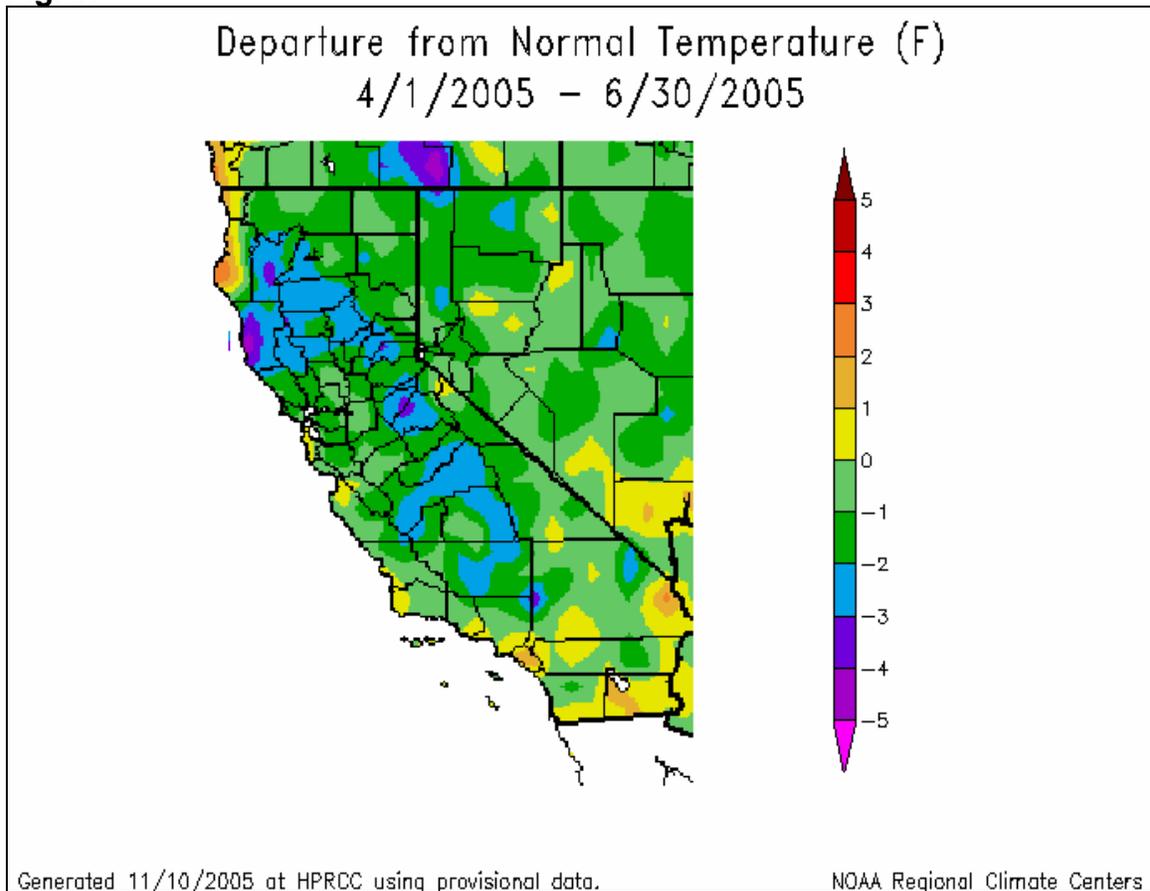
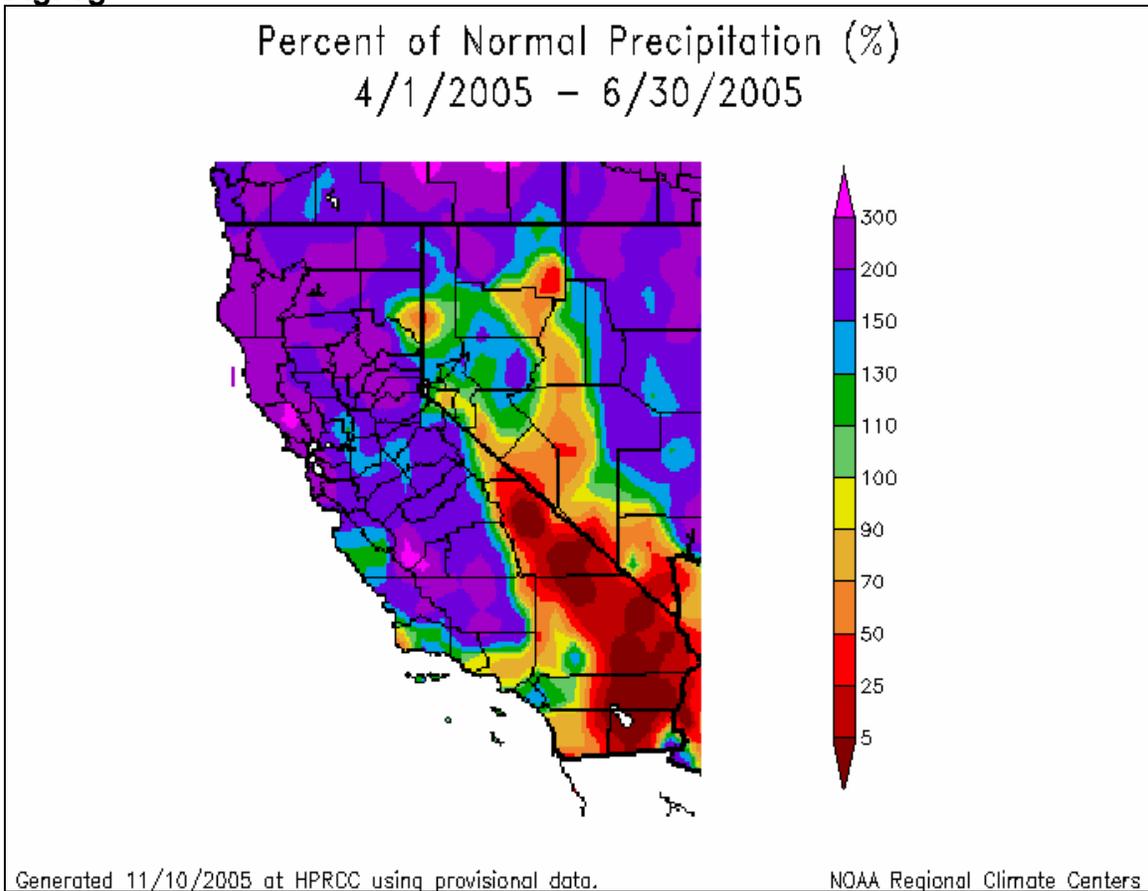


Fig. 1g



Summer 2005 (Jul – Oct)

A very wet spring and early summer was followed by a very dry summer (Fig. 1i) across Northwest California. The seasonal high pressure ridge established itself across the eastern Pacific resulting in little or no rain to the region. Monsoonal moisture was also absent much of the summer thus very few showers or thunderstorms were present while the only significant precipitation came from drizzle along the coast. Temperatures during the three month period were near to slightly below normal (Fig. 1h).

The summer also had very few strong offshore flow events. During mid and late August winds turned to the east and northeast however these events corresponded with low pressure aloft which helped afternoon temperatures to remain relatively cool and corresponding relative humidity values to remain below red flag criteria. The mild summer resulted in only one Red Flag Warning being issued during the last week of September. Another offshore event developed in mid October and warranted a fire weather watch but the required strong winds never materialized, thus not warranting the issuance of a red flag warning.

By late October rains associated with the first couple Pacific Storms brought an end to fire season.

Fig. 1h

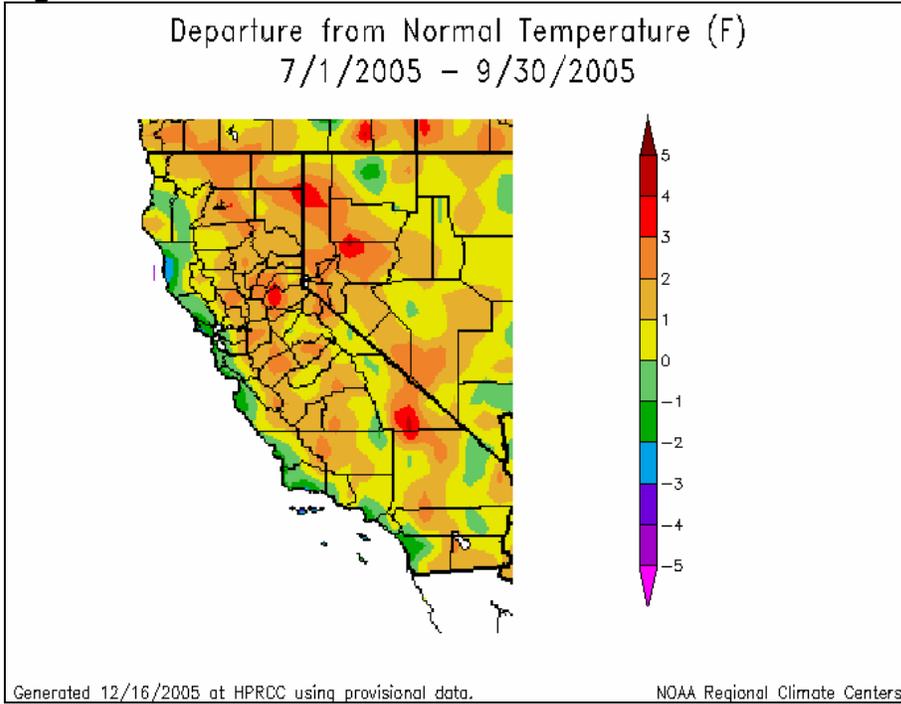
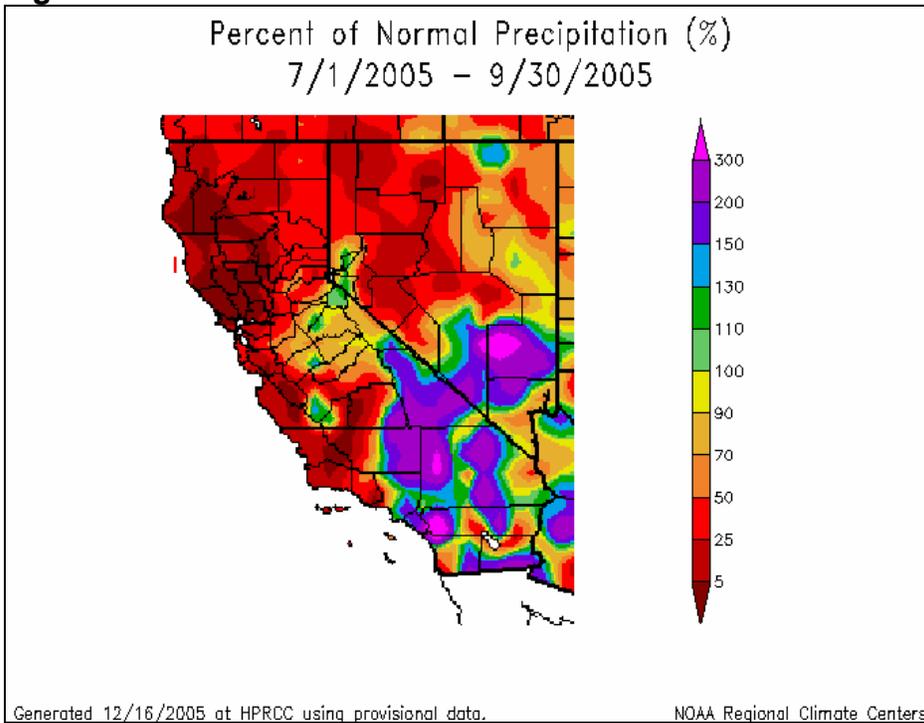


Fig. 1i



II. RED FLAG VERIFICATION

Eureka Fire Weather issued a total of 3 individual zone Red Flag Warnings during the 2005 fire season, all for wind and low humidity. The three warnings were issued within interior zones 203, 204 and 276. 3 of the 3 warnings verified, and all were preceded by a Fire Weather Watch. One Fire Weather Watch was Issued in October for Zone 276 but failed to reach Red Flag Warning criteria thus it was not considered an event.

Of the 3 verified Red Flag Warnings 3 were preceded by a Fire Weather Watch 3 of 3 or **100%**.

- Correct Warnings (Verified) = **3**
- Incorrect Warnings (not verified) = **0**
- Missed Events = **0**

POD (Probability of Detection)...**1.0** (Highest Accuracy = 1.0)
 CSI (Critical Success Index).....**1.0** (Highest Accuracy = 1.0)
 FAR (False Alarm Ratio).....**0.0** (Highest Accuracy = 0)

3 of 4 or **75%** of the Fire Weather Watches reached Red Flag Criteria.

The average lead time for all Red Flag Warnings issued was **9.0 hours**. The average lead time for the Fire Weather Watches issued was **14.5 hours**. **No warning or watches were issued for Dry Lightning during the 2005 season.**

2005 WARNING VERIFICATION								
ZONE	#RFW	Correct RFW	Incorrect RFW	Missed Event	POD	CSI	FAR	Watch
201	0.0	0.0	0.0	0.0				0.0
202	0.0	0.0	0.0	0.0				0.0
203	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0
204	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0
276	1.0	1.0	0.0	0.0	1.0	1.0	0.0	2.0
TOTALS	3.0	3.0	0.0	0.0	1.0	1.0	0.0	4.0

III. SPOT FORECASTS

The National Weather Service Office in Eureka issued a total of 56 site specific or spot forecasts during the year 2005. Of this total, 14 were for wildfires, 39 were for project burns and 1 was issued for a hazmet exercise. The total was up 3 from the previous year. Similar to last year, the majority of spot forecast requests came from the USFS and CDF, while 10 requests originated from National Park Service, an increase of 8 from last year. The remaining spots were distributed between the state parks and local city governments. (see Fig. 6.1).

The average spot forecast "Turn-Around Time" was 34 minutes for wildfires and 43 minutes for project burns. This was an improvement of 19 and 16 minutes respectively from the 2004 average. The significant decrease in turn-around time is likely attributed to two main factors: new and more efficient software and fore-caster insight on an anticipated request.

Turn-Around Time is defined as the elapsed time between a spot forecast request receipt (or notification) and forecast transmission. There were 14 instances where spot forecasts were requested a day or more in advance of ignition time. These cases were omitted from the average Turn-Around Time calculation.

Table 3.a

Spots For Wildfires.....	14
Spots For Project Burns.....	39
Spots For Hazmet.....	1
Misc. / Training Spots.....	2
Average Turnaround Time	
For Wildfire.....	34 minutes
For Project Burns.....	43 minutes
Total Spots	56

Fig. 3.b

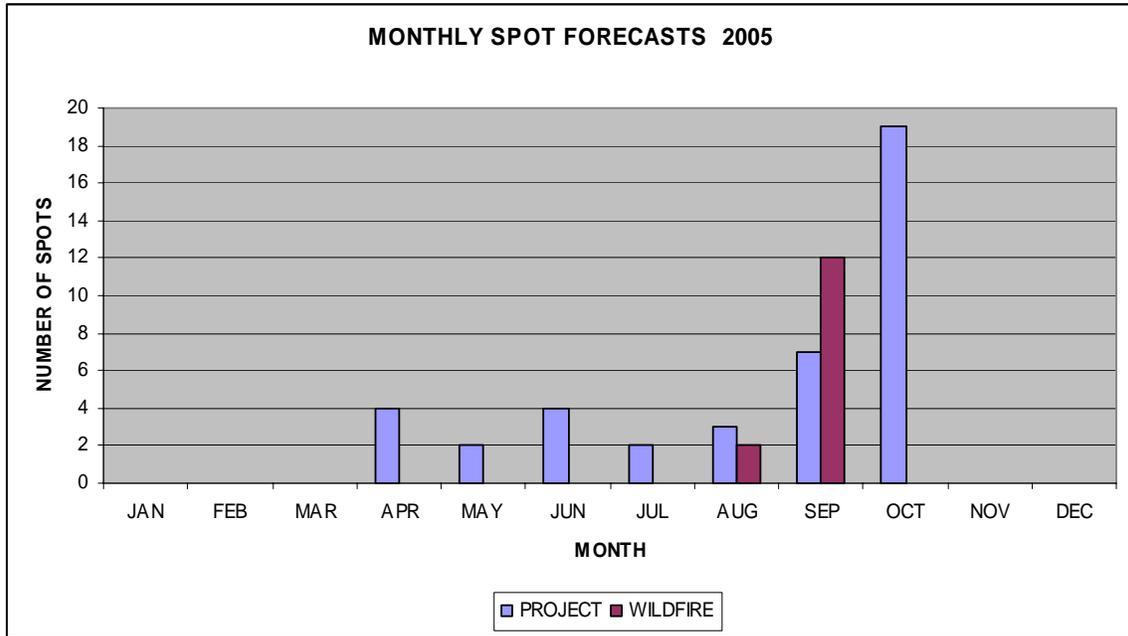
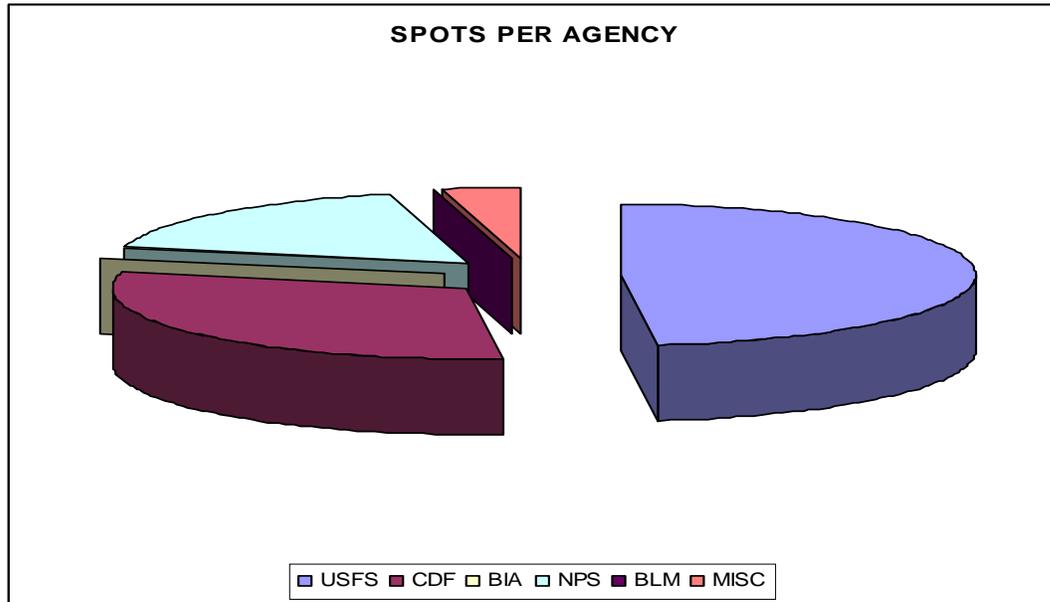
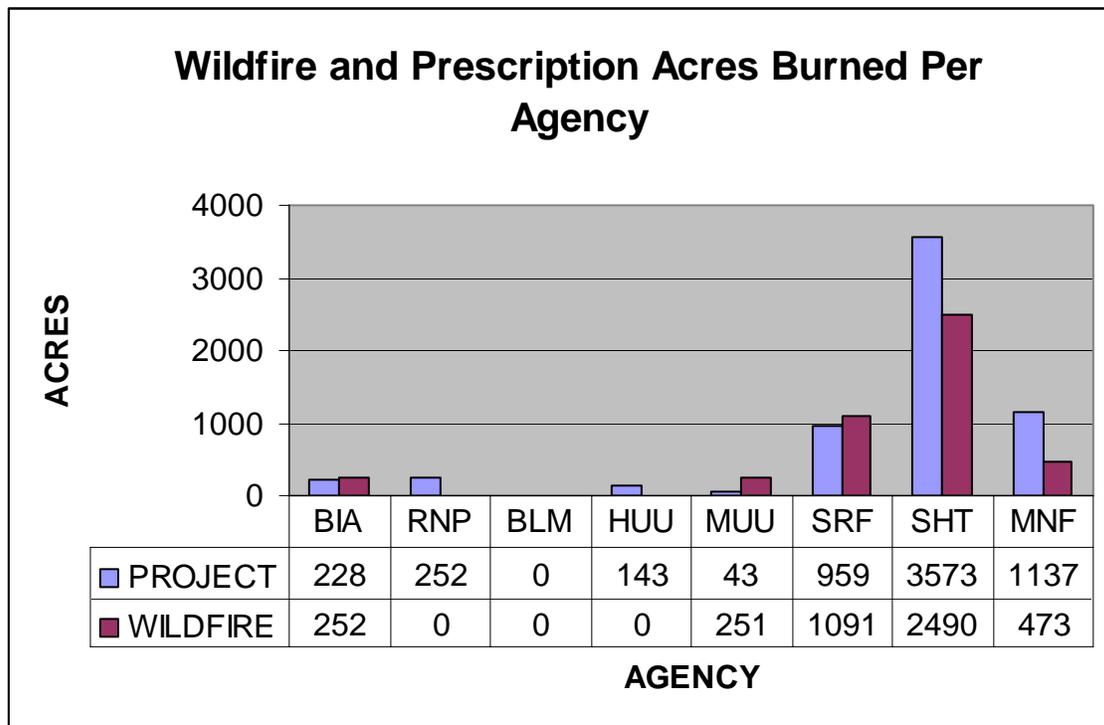


Fig. 3.c



IV. WILDFIRE / PROJECT BURN ACTIVITY

Wildfire activity was light during the 2005 fire season. Nearly 3500* acres were burned due to wildfire within Eureka's area of responsibility, almost half of what was burned the previous year. There were no large wildfires and only one wildfire (The Geary Fire) required a Type II deployment. The two wildfires contributing the most burned acreage were the "Geary" (200 acres) and the CDF contained "Highway Fire" (225 acres) in Mendocino County. Project burning, however, was nearly 3 times the amount burned last at 6500 acres*. See the following table for acre and agency distribution.



* These totals include acres burned within the Mendocino and Shasta-Trinity National Forests, portions of which overlap into WFO Sacramento's and WHO Medford's areas of responsibility.

V. INCIDENT METEOROLOGIST ASSIGNMENTS

Eureka Fire Weather participated in 2 IMET assignments during the 2005 fire season. IMET Jeff Tonkin was dispatched to both incidents, one in Alaska and the other in Northern California (Table 5.a). IMET support from WFO Eureka totaled 23 days including travel. There were no incidents within the Eureka CWA requiring IMET support during 2005.

<i>Incident Name</i>	<i>IMET</i>	<i>Dispatch Dates</i>	<i>WFO District</i>
Fox Creek	Jeff Tonkin	7/15 - 7/30	Anchorage
Barrel Fire	Jeff Tonkin	8/24 - 8/31	Reno

VI. EUREKA FIRE WEATHER PROGRAM SUMMARY

The amount of prescriptions spot requests was very close to last years amount. The following table illustrates a comparison of activity and performance for the last two years and includes the three year average.

<u>ANNUAL COMPARISON TABLE</u>					
		<u>2004</u>	<u>2005</u>	<u>04-05 Diff</u>	<u>'03 - '05 Ave.</u>
<u>Warning / Watch</u>					
Red Flag Warnings Issued:		5	3	-2	7.3
	Dry Lightning:	0	0	0	0.3
	Wind/RH	5	3	-2	7
	Average Lead Time (hr)	20.6	9.0	11.6	14.2
Fire Weather Watches Issued:		4	4	0	4
	Dry Lightning:	0	0	0	0
	Wind/RH	4	4	0	4
	Average Lead Time (hr):	33.5	14.5	N/A	24.0
Verification:					
	POD	0.66	1.0	0.34	0.89
	CSI	0.36	1.0	0.64	0.69
	FAR	0.2	0	-0.2	0.16
<u>SPOT Forecasts</u>					
Total Issued:		53	56	3	68
	Wildfire:	17	14	-3	39
	Average Turn-Around-Time	53 min	34 min	-19 min	52 min
Project:		34	39	5	28
	Average Turn-Around-Time	59 min	43 min	-16 min	57 min
<u>IMET Support</u>					
Total Days		28	23	20	38
	Nancy	0	0	-12	6
	Jeff	28	23	-8	32
Dispatch Days within CWA:		8	0	-8	7

VII. TRAINING, EDUCATIONAL AND OUTREACH ACTIVITIES

The following table summarizes various fire weather activities which the fire weather staff participated in during the 2005 calendar year.

Dates	Activity	Agency/User/Audience	Representative	Location
Mar 10th	Pre-Season Meeting	Local Agencies	Brett	Eureka
Mar 10-11th	CA-AOP Meeting	NWS	Jeff	Sacramento
Mar 12th	Outreach	Mendocino NF, Shasta-T NF	Jeff	Williams, Weaverville
Apr 4-8	IMET Workshop	NWS	Brett	Boise
Apr 27-27	Taught S-290	Various Agencies	Nancy	Ukiah
May 1-30	Spin up Training	Inter-Office	Jeff	Eureka
June 1st	Interagency Coord	Local Agencies	Jeff	Crescent City
July 15-29	IMET	Alaska State Forestry	Jeff	Kenai, AK
July 19th	Outreach / Interview	Media / Wildfire Magazine	Jeff	Kenai, AK
Aug 24-31	IMET	BLM	Jeff	Cedarville, CA
Oct 18-25	Fire Wx Lecture	Humboldt State University	Jeff, Brett, Nancy	Arcata
Nov 16th	Tsunami Briefing	Mendocino Fire Agencies	Troy	Mendocino
Nov 7,8	UAT Meeting	NWS, GACC, Various Agencies	Nancy	Sacramento