



Southern California Firestorm 2007



WFO SGX Office Building



Home burning in Rancho Bernardo

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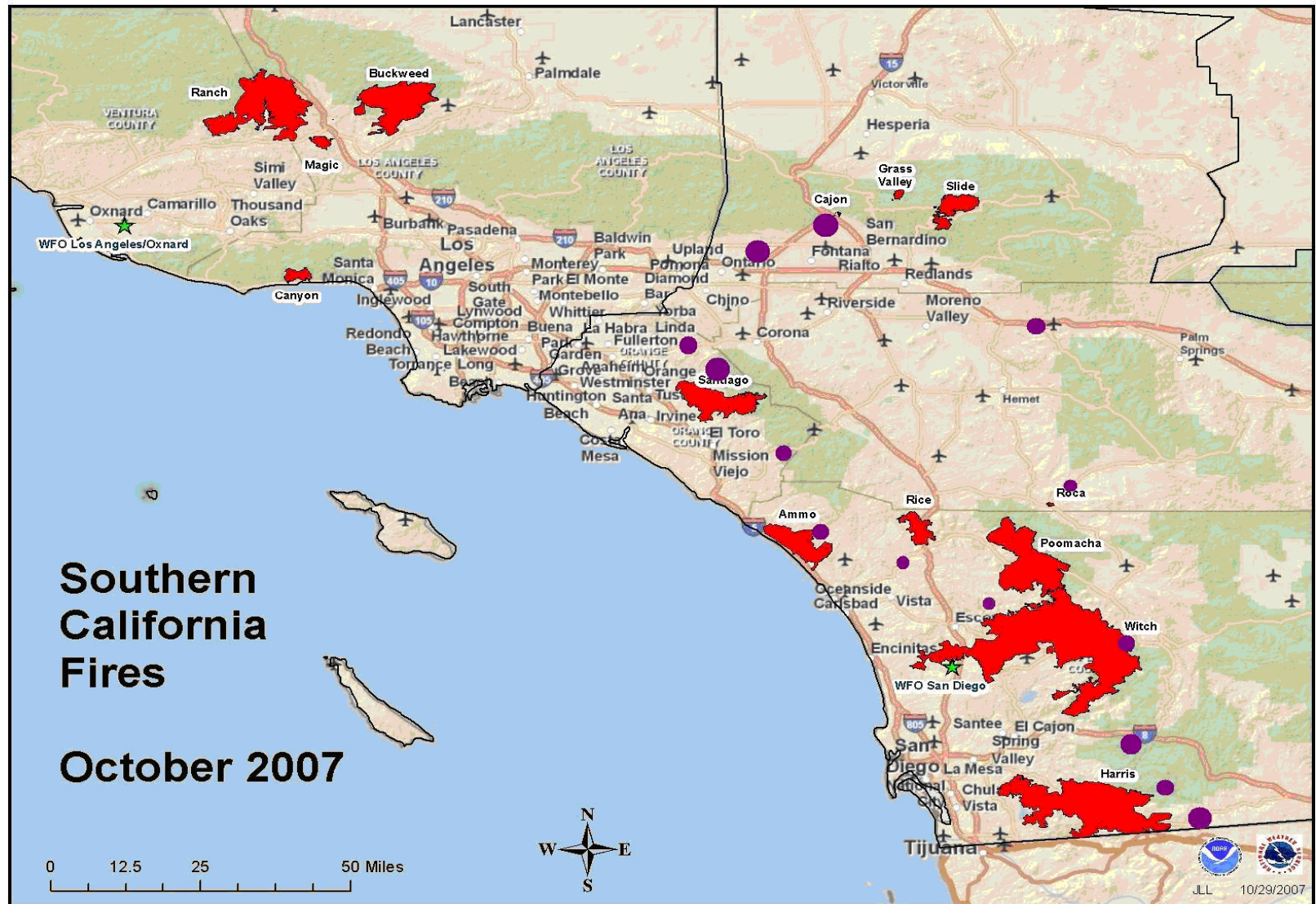
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NOAA National Weather Service



Larry Himmel Video

- Larry Himmel is a reporter at KFMB-TV in San Diego
- Larry was providing TV news coverage of the Witch Creek fire in Rancho Bernardo and the 4-S Ranch neighborhood
- Little did he know that he was about to become personally involved in the story...





Major Fires (SGX) October 21 -23

- **Witch Creek (S.D. County)**
 - 197,990 acres
 - 1125 homes, 509 outbuildings, 239 vehicles destroyed
 - 2 deaths, 40 firefighters and 2 civilians injured
- **Harris (S.D. County)**
 - 90,440 acres
 - 253 homes, 293 outbuildings destroyed
 - 7 deaths, 40 firefighters and 21 civilians injured
- **Poomacha (S.D. County)**
 - 50,176 acres
 - 138 homes, 78 outbuildings destroyed
 - 21 firefighters injured



Major Fires (SGX) October 21 -23

- **Rice (S.D. County)**
 - 9,472 acres
 - 206 homes, 40 outbuildings destroyed
 - 5 firefighters injured
- **Slide (S.B. County)**
 - 12,789 acres
 - 272 homes, 3 outbuildings destroyed
 - 9 firefighters injured
- **Grass Valley (S.B. County)**
 - 1,247 acres
 - 174 homes, 2 outbuildings destroyed
 - 1 firefighter injured



Major Fires (SGX) October 21 -23

- **Santiago (Orange County)**
 - *28,400 acres*
 - *15 homes, 9 outbuildings destroyed*
 - *16 firefighters injured*
 - *Fire threatened large areas of highly populated Orange County*
 - *~ 3,000,000 population*
 - *Debris Flow threat prompted numerous evacuations of Santiago and Modjeska Canyons Fall/ Winter 2007/08*



Setting the stage

- A strong, persistent “Santa Ana” event continued from October 21st to October 24th
- Persistent, severe drought for two years meant fuel moistures were already below critical levels
 - *Some areas only received 25% to 40% of annual precipitation*
- In some places peak gusts were greater than 70 mph, with humidities below 10%, for 23 hours during the event.

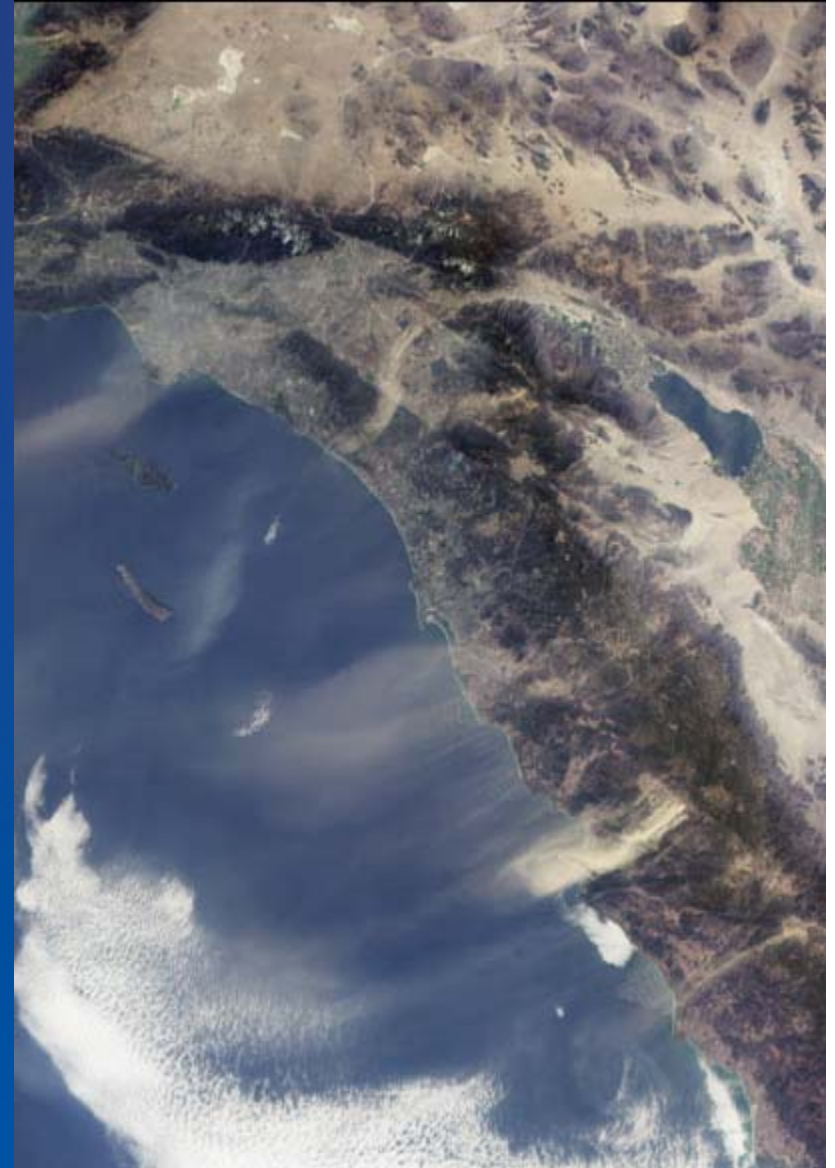


Santa Ana Winds

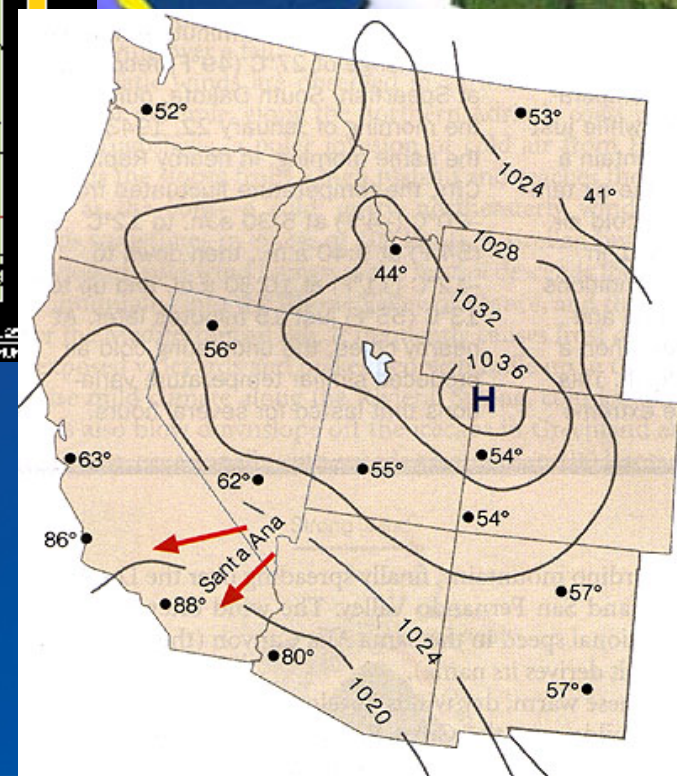
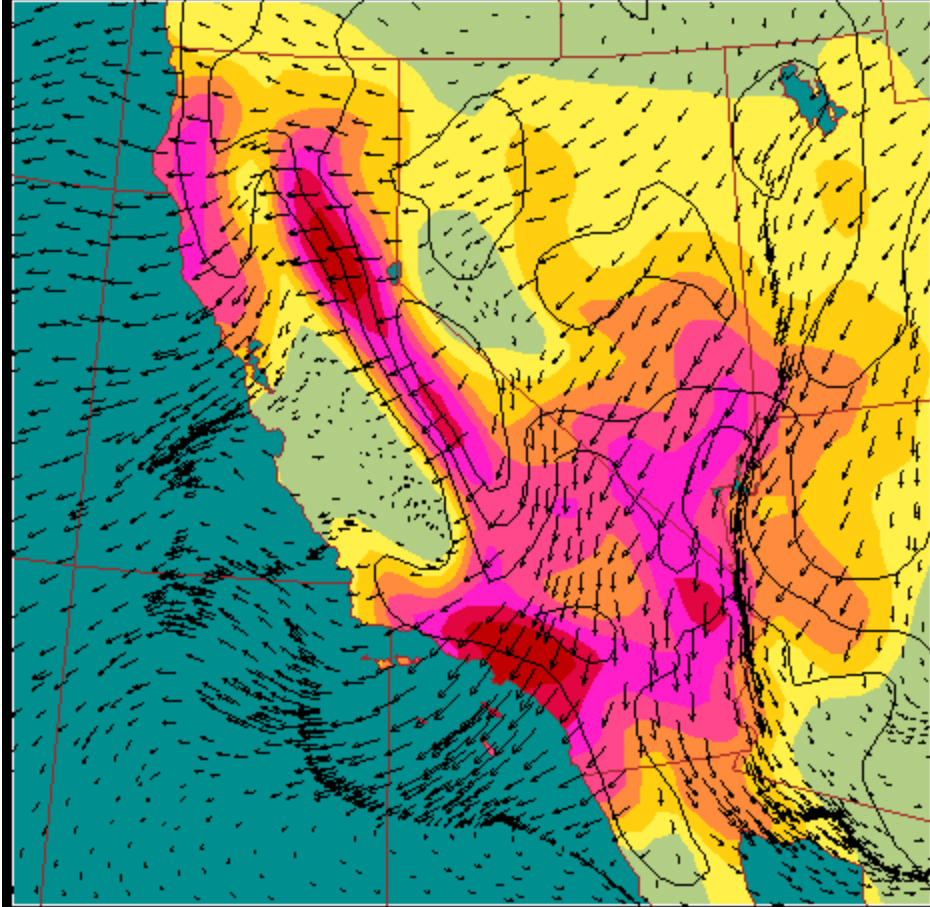
What leads to a Santa Ana Wind Event?

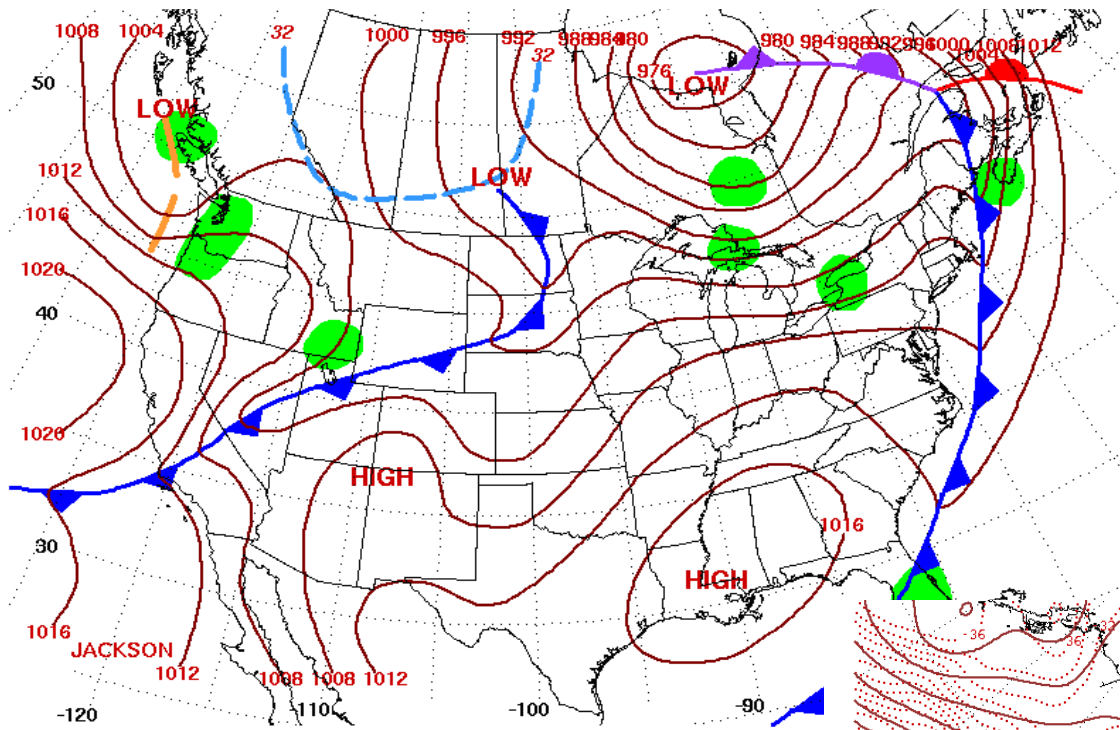
- Strong surface high pressure over the Great Basin (Nevada), and lower pressure off the coast
- Strong winds aloft coming from the northeast quadrant (downward motion behind an upper trough)
- Strong temperature difference aloft, i.e. cold air in the Great Basin and warm air near the coast

September through January

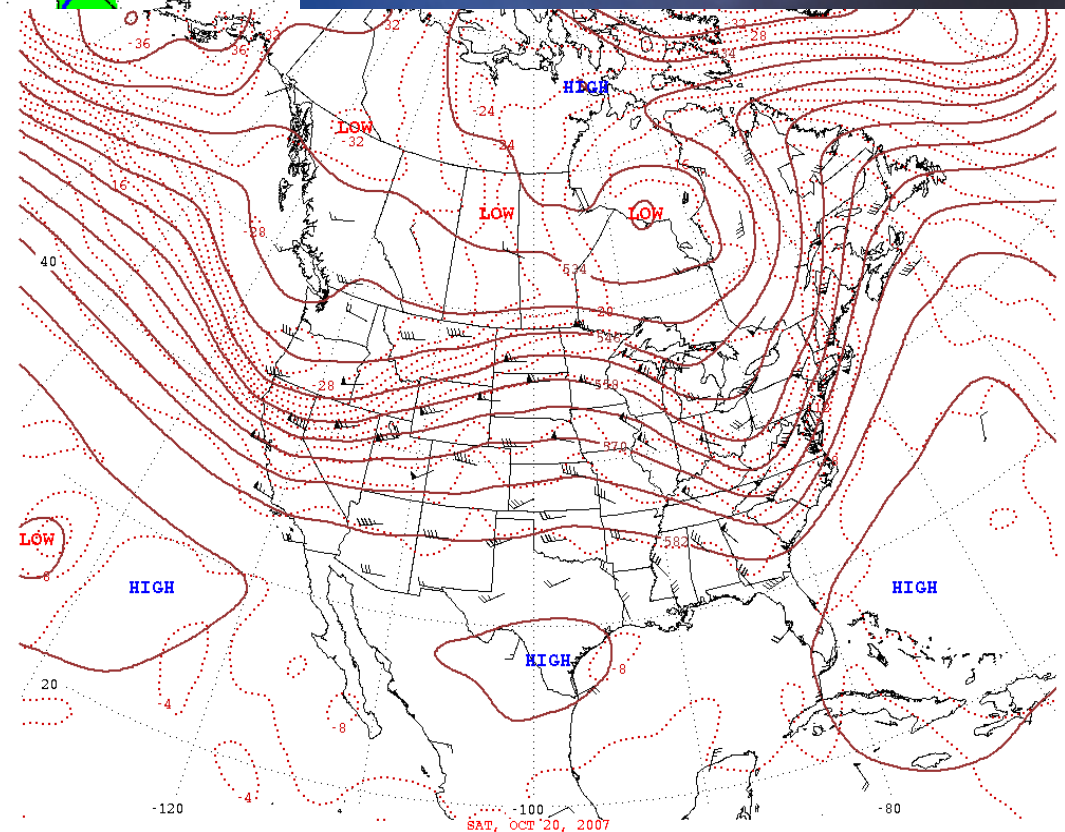


1993 SANTA ANA WIND AND FWI





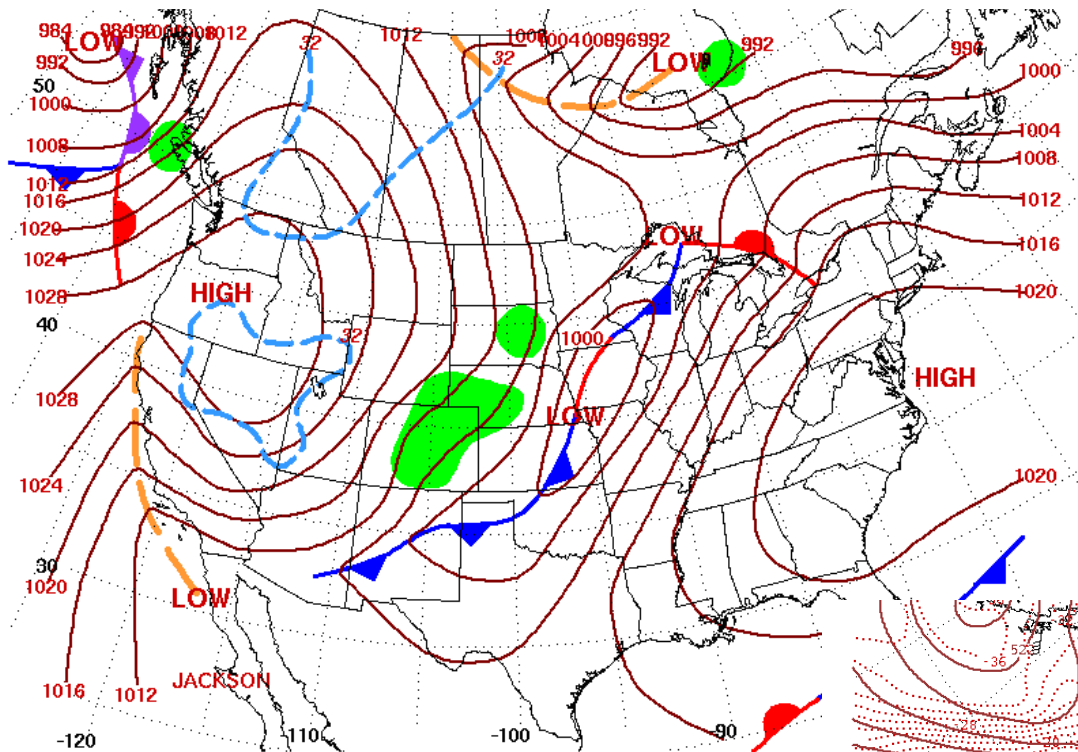
Surface Weather Map at 7:00 A.M. E.S.T.



500-Millibar Height Contours at 7:00 A.M. E.S.T.

Sat. Oct 20, 2007

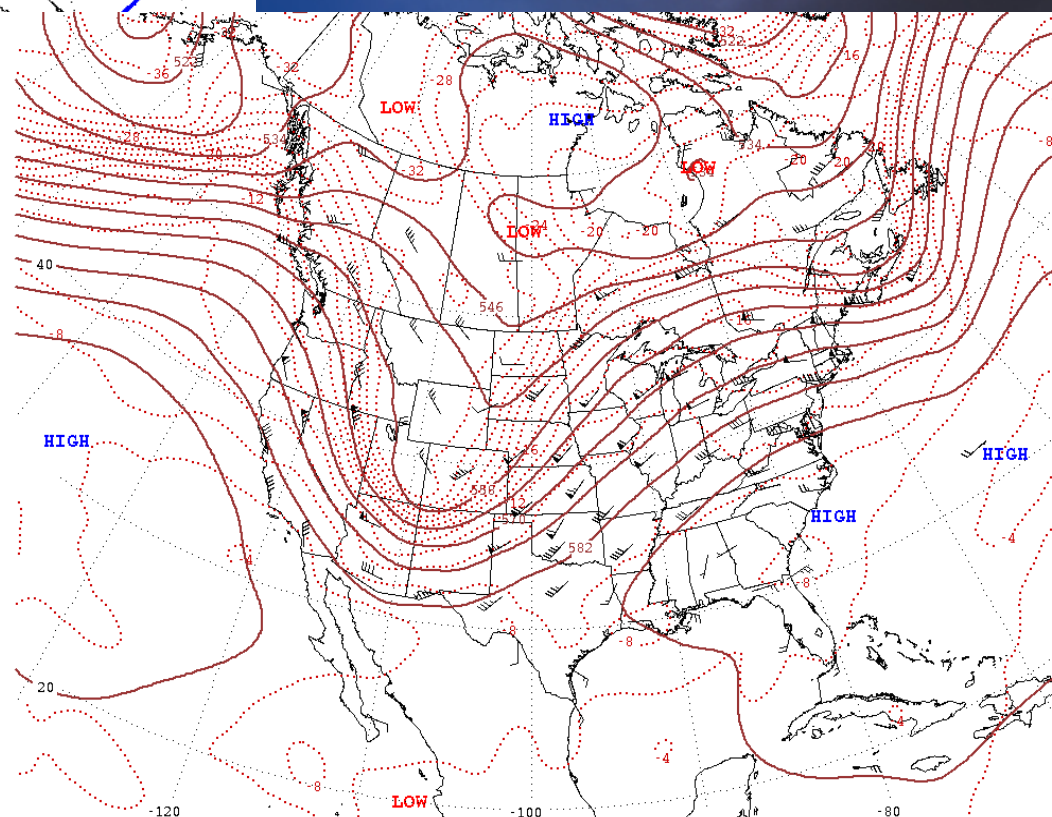
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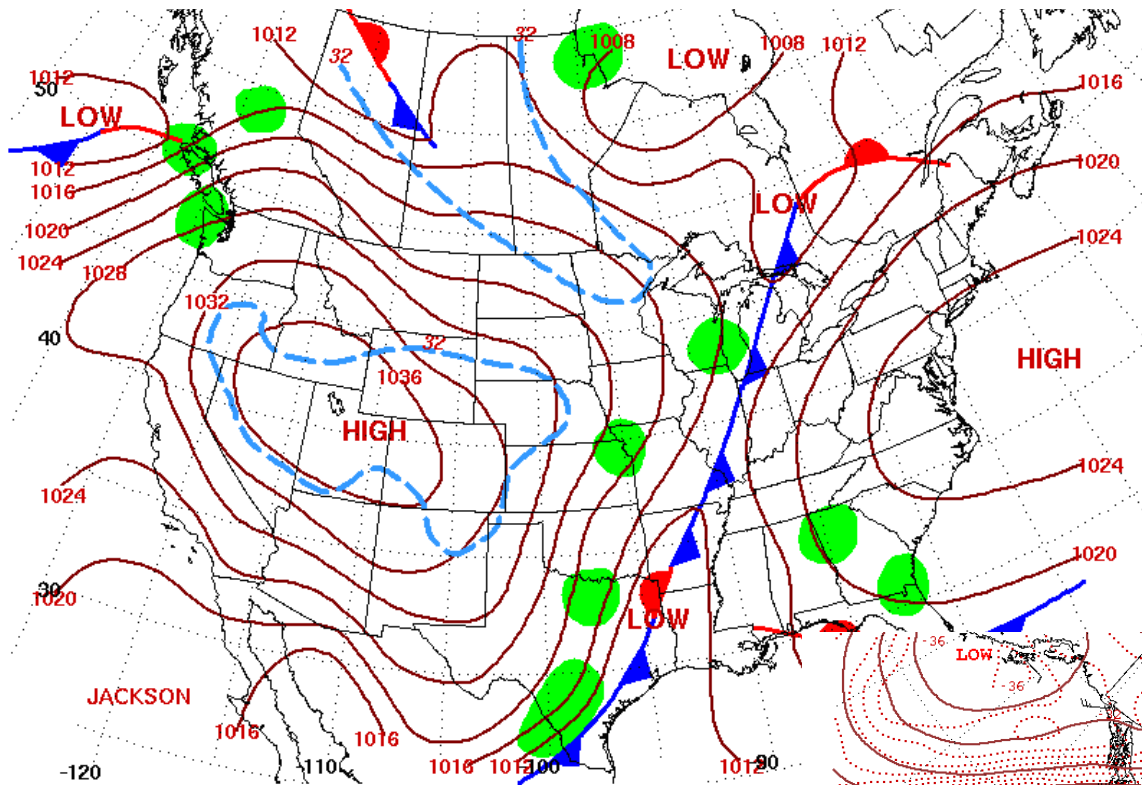
Surface Weather Map at 7:00 A.M. E.S.T.



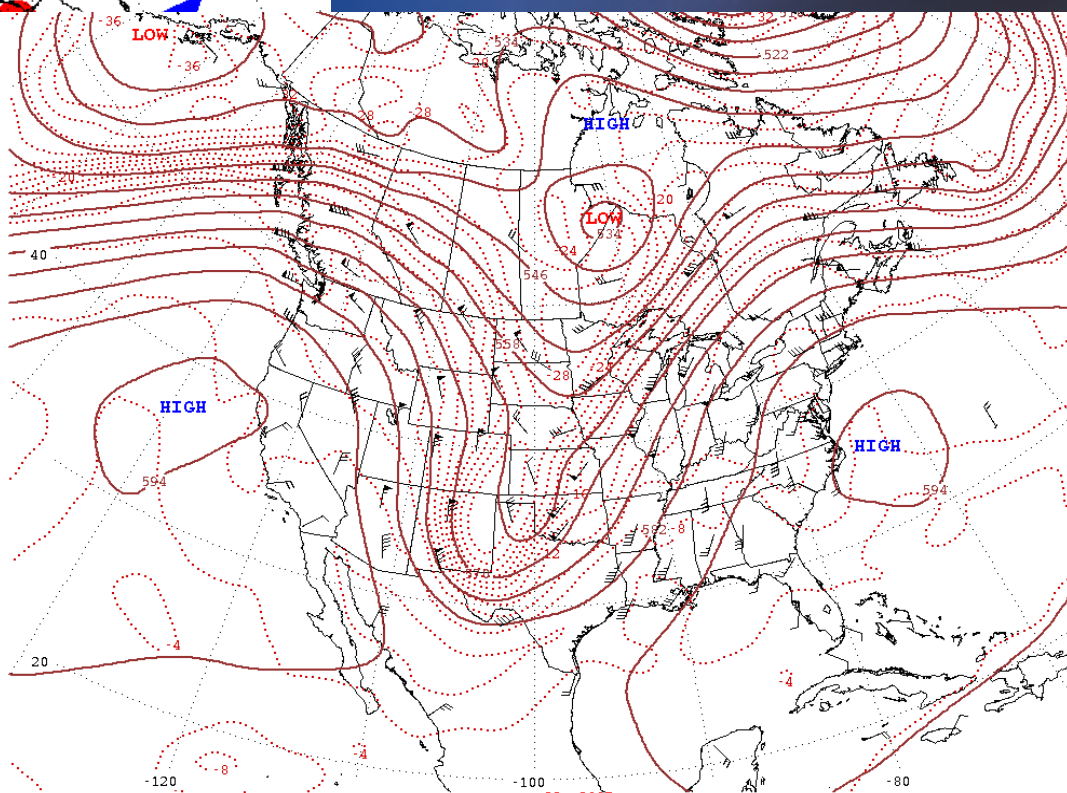
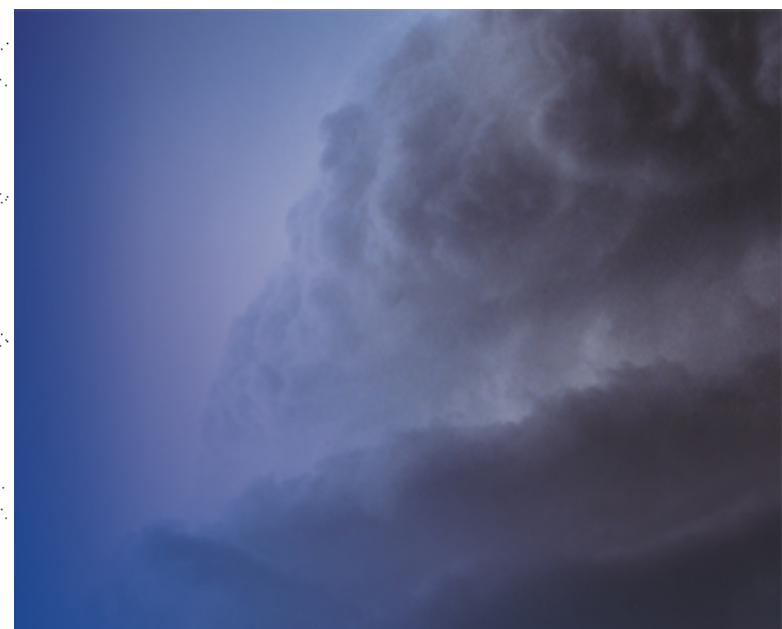
Sun. Oct. 21, 2007



500-Millibar Height Contours at 7:00 A.M. E.S.T.



Surface Weather Map at 7:00 A.M. E.S.T.



500-Millibar Height Contours at 7:00 A.M. E.S.T.

Mon. Oct. 22, 2007

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Event was well advertised...

- **Wed, Oct 17**
 - ***SPC: "...offshore Santa Ana wind event may become well established across southern California by late Saturday and Sunday into Monday..."***
 - ***SGX: "...possible explosive wildfire potential in San Diego County Mountains and valleys Monday afternoon..."***



Event was well advertised...

- **Friday, Oct 19**
 - ***SPC: "...dry windy conditions along with extreme drought suggest that a considerable fire danger will exist across southern California early Sunday into Tuesday."***
 - ***SGX: "...Gusts to 80 mph Sunday morning through Tuesday morning. Strongest winds Sunday evening through Monday morning. Monday the most critical fire weather day..."***



Poomacha Fire 10-23-07 (Steve Vanderburg)



We went through Cedar Fire 2003... but this fire was different

- It touched us in a more personal way
- Smoke began to enter the building threatening an office evac on Sunday
- About 40% of staff lived within in a Mandatory Evacuation area.
- Admin Assistant called me at home, evacuating her home while a neighbor's home was burning
- Some didn't know for three days if they still had a home
- Staff was counseled for Post-Traumatic Stress
 - *Employee Assistance Plan*



How close were the fires to the office?



4000 feet...or less

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Office Timeline

- **Sunday October 21**
 - *Most large fires begin*
 - *Smoke from Witch Creek Fire is visible to the east*
 - *By mid afternoon, smoke is noticeable in the office*
 - Concerns for possible evacuation
- **Monday October 22**
 - *Some staff manage to make it in before I-15 is closed.*
 - *Mandatory evacuation declared for Rancho Bernardo*
 - Office evacuated by 9:45 am
 - MIC and ITO travel to Oxnard WFO (Backup Office)
 - WCM and two forecaster head to SD County EOC
 - *Provide support for 24 + hours*



Office Timeline

- **Tuesday October 23**
 - *Office is reopened at 5:00 am*
 - *Most staff returns by mid morning*
 - *MIC and ITO return by mid-late afternoon*
 - *SD EOC support continues until Wednesday (8 hr/day)*



Staff Meeting on Wednesday, October 23

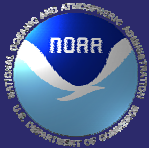




October 29 and 30

- Jack Hayes visits San Diego
 - Visits Forecast Office
 - Visits SD County EOC
 - Visits IMET Fire Camp
 - Tours burn areas by helicopter





What worked?

- **Heads up to critical customers**
 - *No one who was paying attention could say they didn't see this coming*
- **Service Backup went well**
 - *SGX ITO helped solve a grid issue with WR after the LOX IT had left for the day*
- **Office Evac went well**
 - *WCM ran evac, sent himself and 2 forecasters to SD EOC*
- **Evac Pay**
 - *Took a few extra days to make work, but NWS employees in Mandatory Evac did not have to sit in shelters*



What didn't work?

- Continuity of Operations (COOP)
 - *Office backup plan worked well, but there was no plan for how to get from evac to backup*
 - Accounting for a few people was difficult
 - How to track people down in evac and shelters to give them work status?
 - *Office will have a Continuity of Operations Plan by the end of March*



After the Fires...the next risk is Debris Flows!



Greenwood Avenue, Devore 12/25/03



Quiz Time!

- According to the USGS, how much rainfall can start a debris flow in mountainous terrain, after a “fresh burn” (ash still in basin)?
 - A. 3 inches/hour
 - B. 2 inch/hour
 - C. 1/2 inch/ 30 minutes
 - D. 2/10 inch / 20 minutes



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NWS/USGS Debris Flow Program

- With such minimal rainfall potentially causing devastating debris flows, Flash Flood Watches and Warnings are tied to USGS thresholds.
- Watches and Warnings mention debris flows in specific burn areas.
- Public Information Statements from USGS and issued by NWS highlight specific areas (streets, etc) potentially affected
- For details see weather.gov/sandiego , scroll to link on “Debris Flows”



Questions??

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