In the news today...the Thomas Fire... California's Santa Ana Winds and Autumn's Wildfires



Bob Endlich

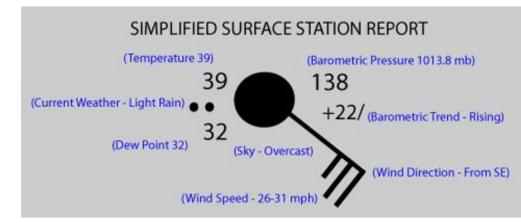
<u>bendlich@msn.com</u>

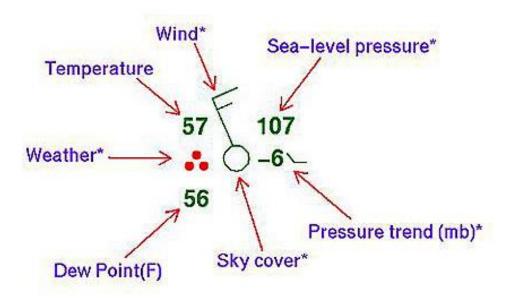
Cruces Atmospheric Sciences Forum 16 December 2017

Outline

- Background on surface charts and the station model plots on surface weather maps
- Current Weather Brief <Climate and Weather control autumn wildfires>
- Fire in the News...
- Climate Change Claims by Governor Jerry Brown
- Background on upper air data and the Skew-T Log P diagram
- Why Autumn is the most dangerous season for California wildfires
- What about 2017 is so unusual?
- The October 2017 Wine Country Wildfires
- The December 2017 Santa Ana Wind wildfires in Southern California.
- Some forensic estimates and analysis along the way

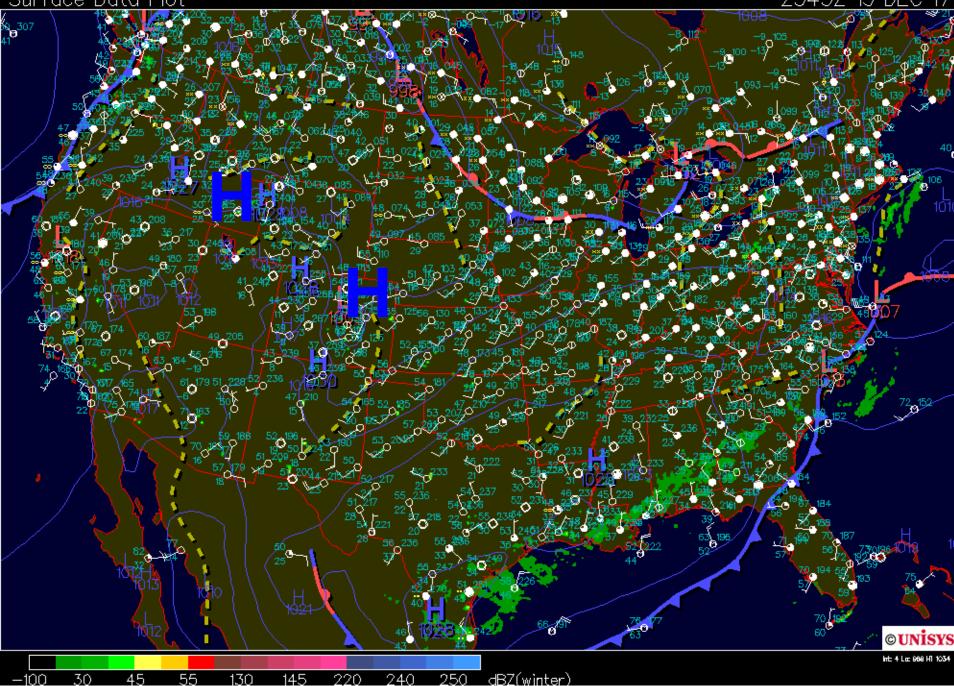
Surface weather observations are plotted on a map in this stylistic manner:

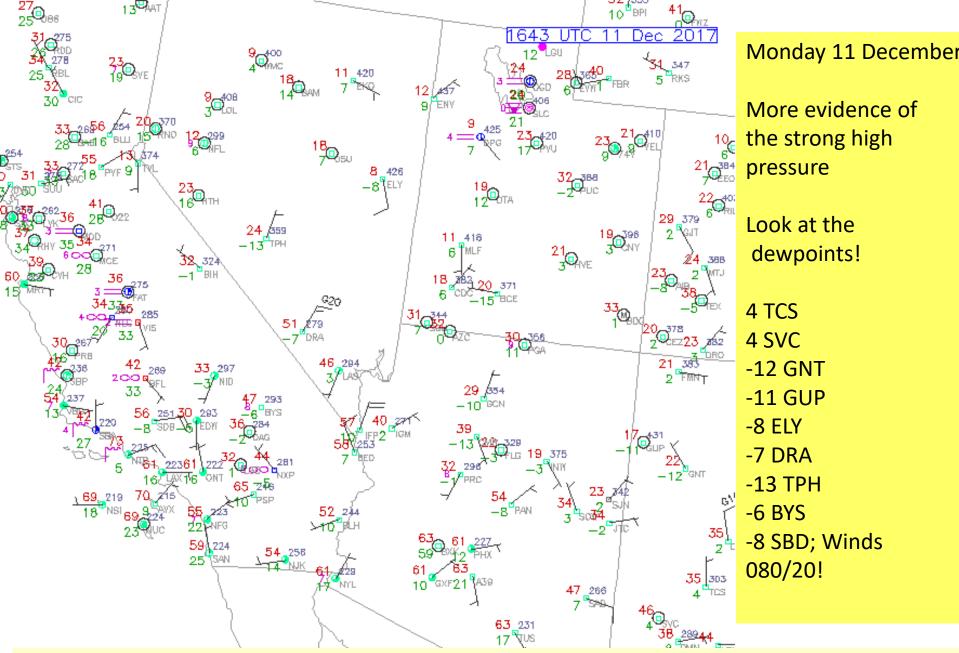




Surface Data Plot

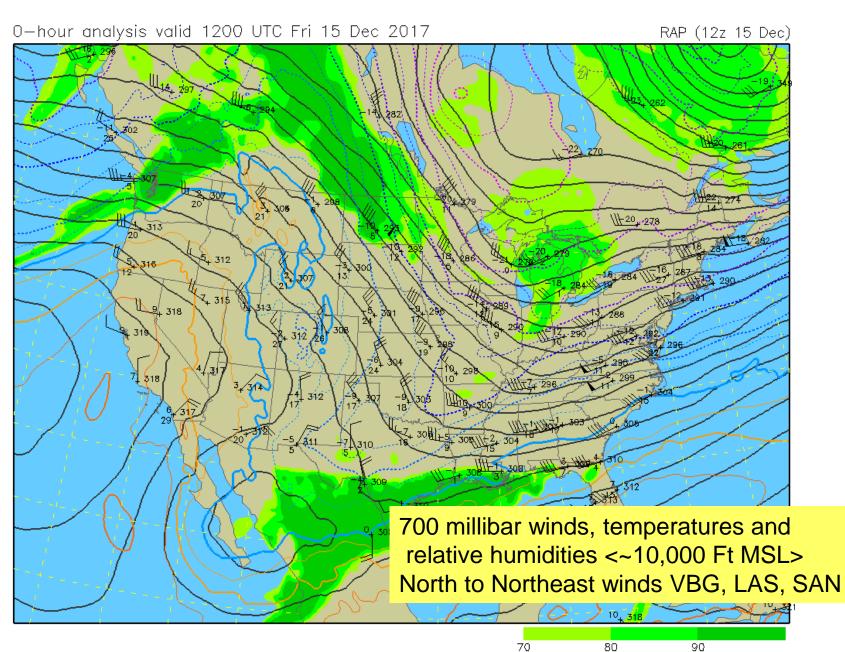
2345Z 15 DEC 17



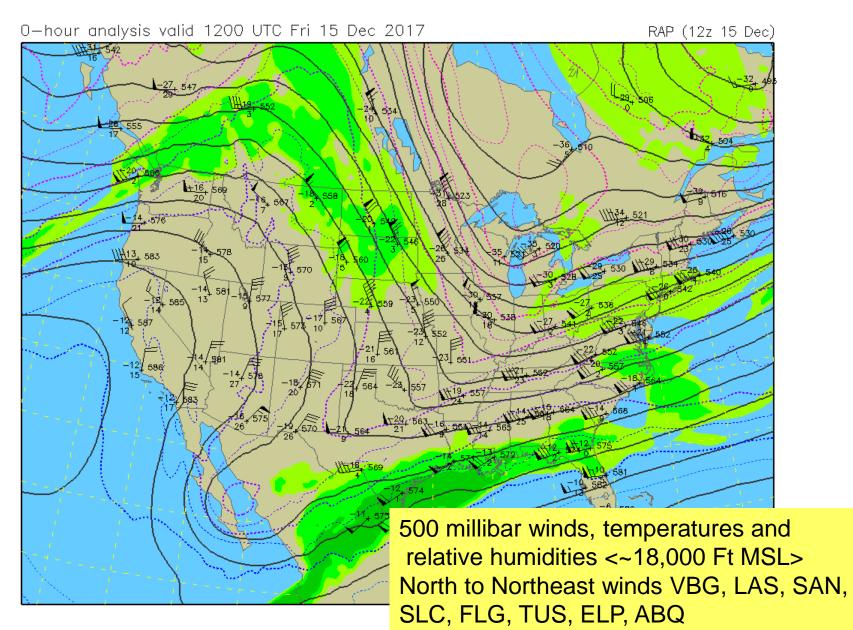


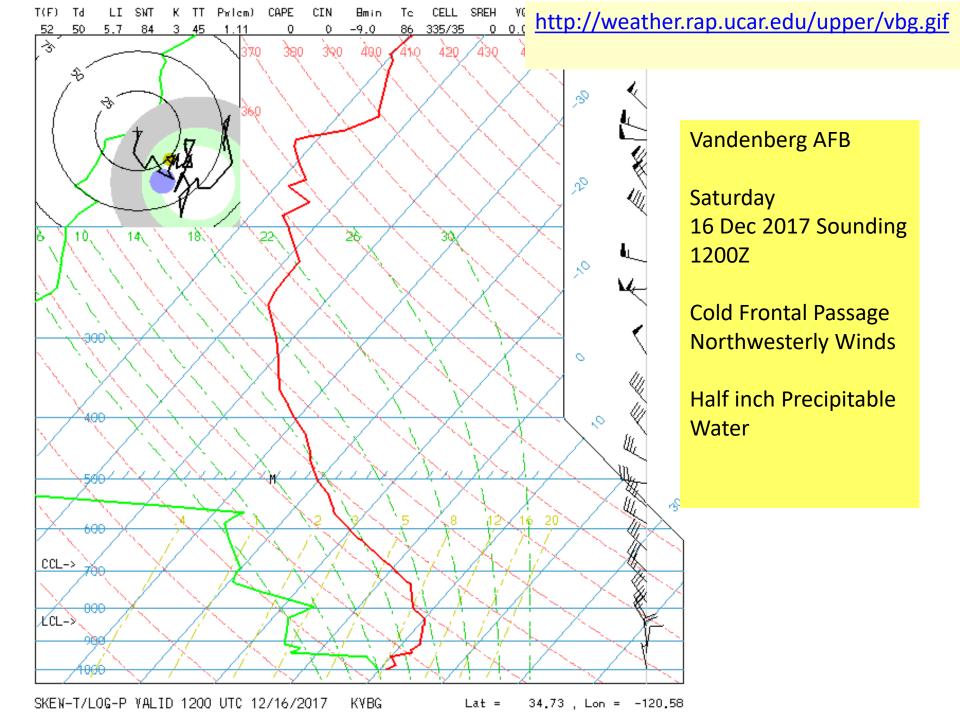
http://weather.rap.ucar.edu/surface/displaySfc.php?region=las&endDate=20171211&endTime =-1&duration=0

700 mb Heights (dm) / Temperature (°C) / Humidity (%)

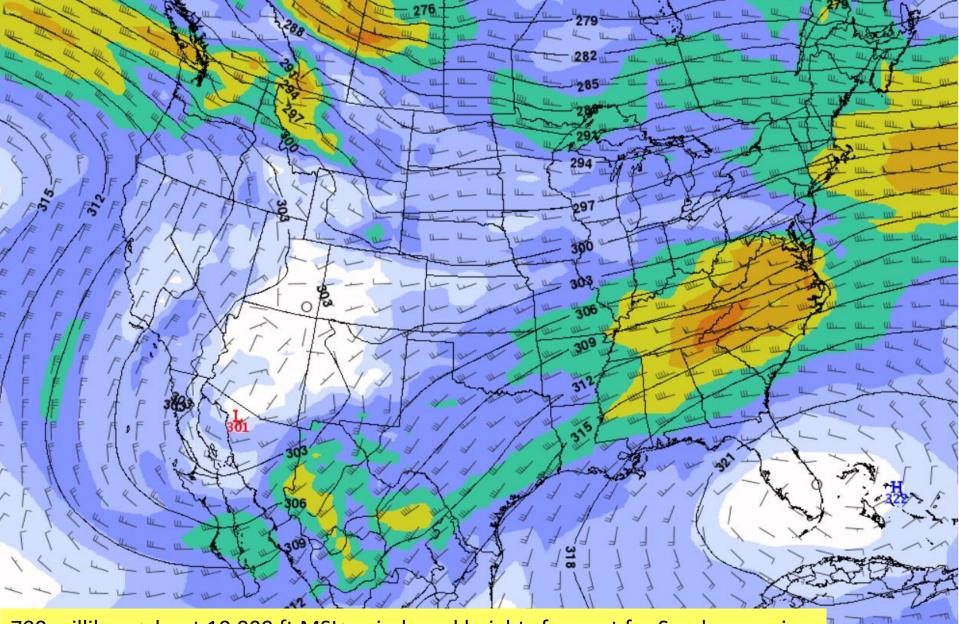


500 mb Heights (dm) / Temperature (°C) / Humidity (%)





http://wxweb.meteostar.com/models/ipsm_looper.php?PROD=2017121518_CON_GFS_ 700_HGT_WINDS



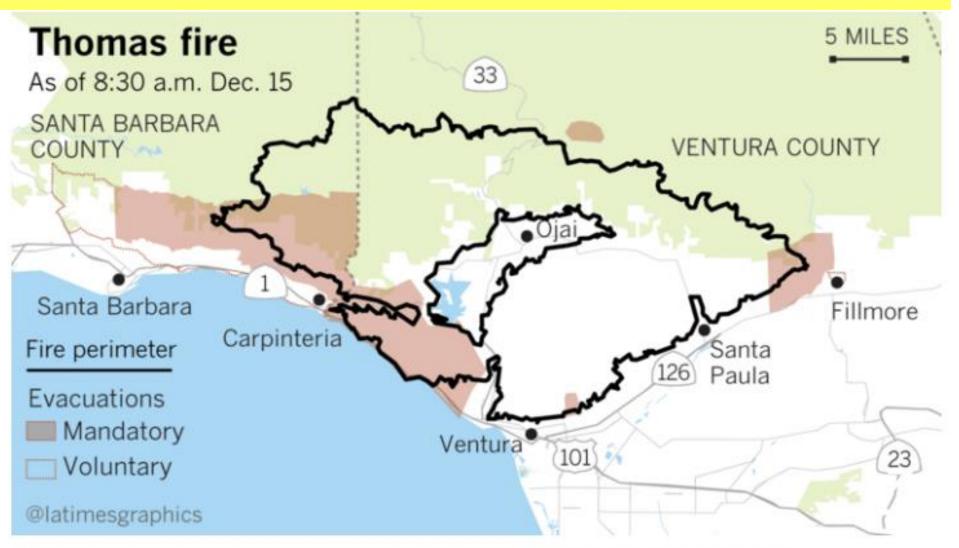
700 millibar <about 10,000 ft MSL> winds and heights forecast for Sunday evening

http://www.independent.co.uk/news/world/americas/california-fires-latest-climate-change -jerry-brown-la-ventura-county-thomas-evacuations-damage-a8101606.html#gallery



A wildfire threatens homes as it burns along a hillside in La Conchita, Calif

http://www.latimes.com/local/california/la-me-In-thomas-fire-grows-20171215-story.html



(Sources: Ventura and Santa Barbara counties, Cal Fire, Mapzen, OpenStreetMap)

https://en.wikipedia.org/wiki/Thomas_Fire#/media/File:Satellite_image_of_Thomas_Fire.jpg





Winds are expected to pick up over Montecito by late Friday, with the possibility of 15 to 25 mph winds, with some local gusts of maybe 35 or 40 mph, Kaplan said.

"That could affect the fire," Kaplan said. "If that happens, that could cause some fire spread."

Winds are going to shift back to a Santa Ana direction by Saturday night into Sunday, and they are expected to get fairly strong by Sunday morning, Kaplan said.

Los Angeles County and Ventura County mountains could see sustained winds from 20 to 40 mph on Sunday, with gusts up to 55 mph. There could be some isolated gusts up to 60 mph, Kaplan said.

https://www.noozhawk.com/article/firefighters_battling_96000_acre_thomas_fire_on _several_fronts

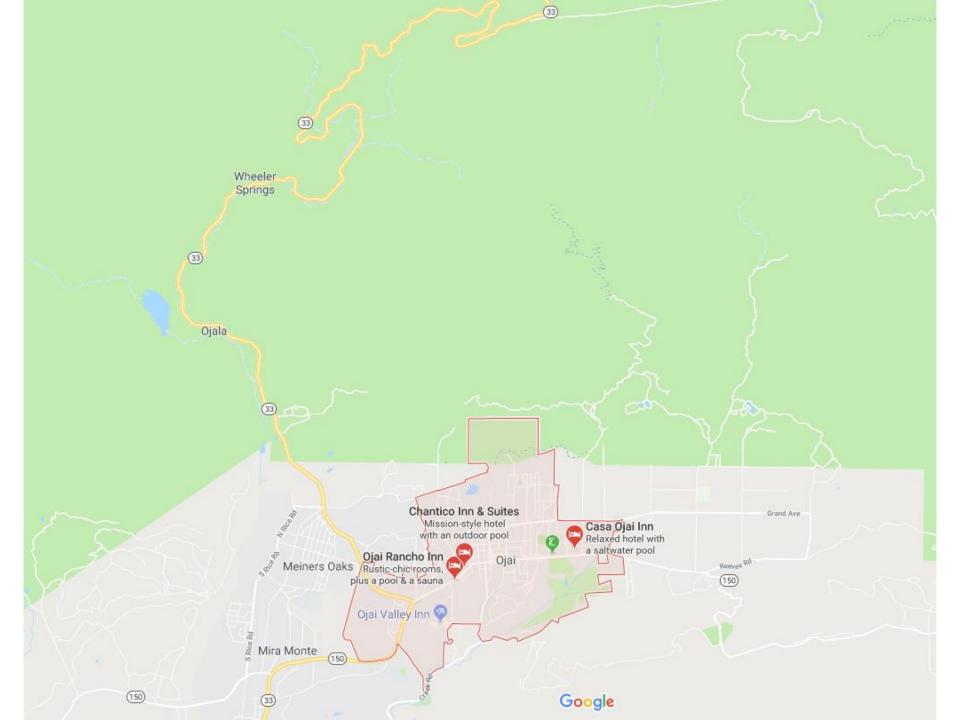


Flames burn along Highway 101 at Faria Beach Thursday shortly after daybreak. A flare-up later in the morning threatened beach-front homes in the area before being knocked down.

https://www.noozhawk.com/article/firefighters_battling_96000_acre_thomas_fire_on_ several_fronts



Flames explode on a chaparral hillside along Highway 33 north of Ojai on Thursday as the Thomas Fire grew to 115,000 acres. It was updated to 132,000 acres Friday morning. (Noozhawk photo)



Flames from the Thomas Fire menace the community of La Conchita on Thursday.



The fire, which straddles the border of Santa Barbara and Ventura counties, is so large that its eastern and western fronts are influenced by entirely different wind patterns and terrain. In many ways, it's as if firefighters are battling two separate fires some 40 miles apart.

http://www.breitbart.com/california/2017/12/09/jerry-brown-blames-climate-chang california-fires-new-normal/ Jerry Brown Blames Climate Change for California Fires: 'The New Normal'



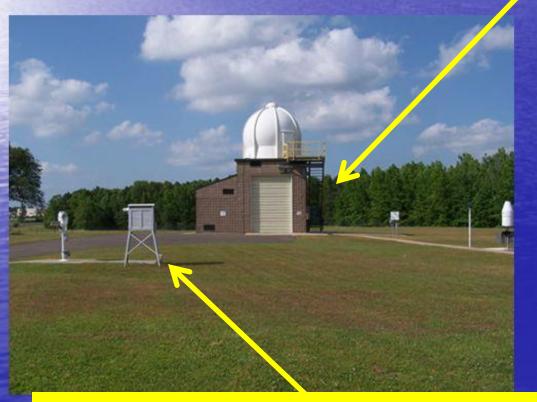
California Governor Jerry Brown blamed climate change for the California fires that have devastated the state this fall during a visit to assess the damage in Ventura County on Saturday.

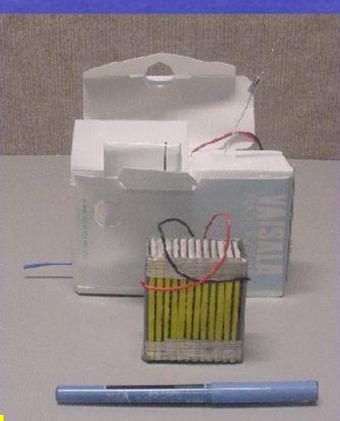
Background and Data

Background on upper air data and the Skew-T Log P diagram

Upper Air - Radiosondes

Radiosondes are released from the inflation building and move up through the atmosphere (20 miles) sending back weather information along the way.

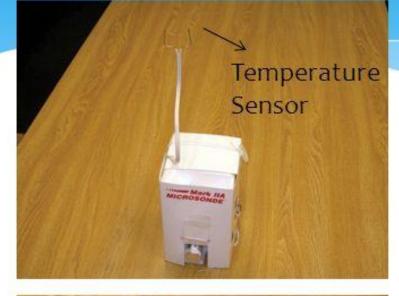


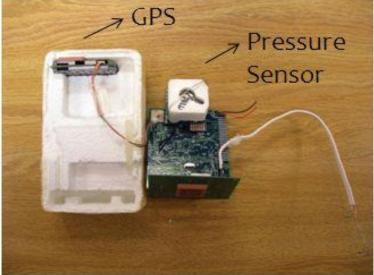


Surface Thermometers are in the Stephenson Screen



Monitoring the Atmosphere

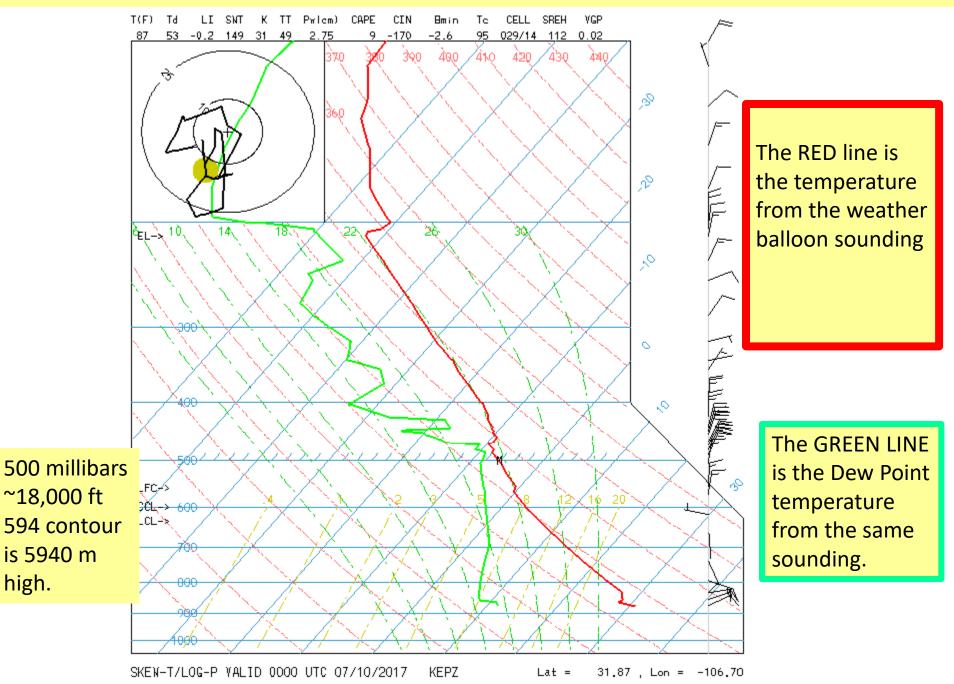




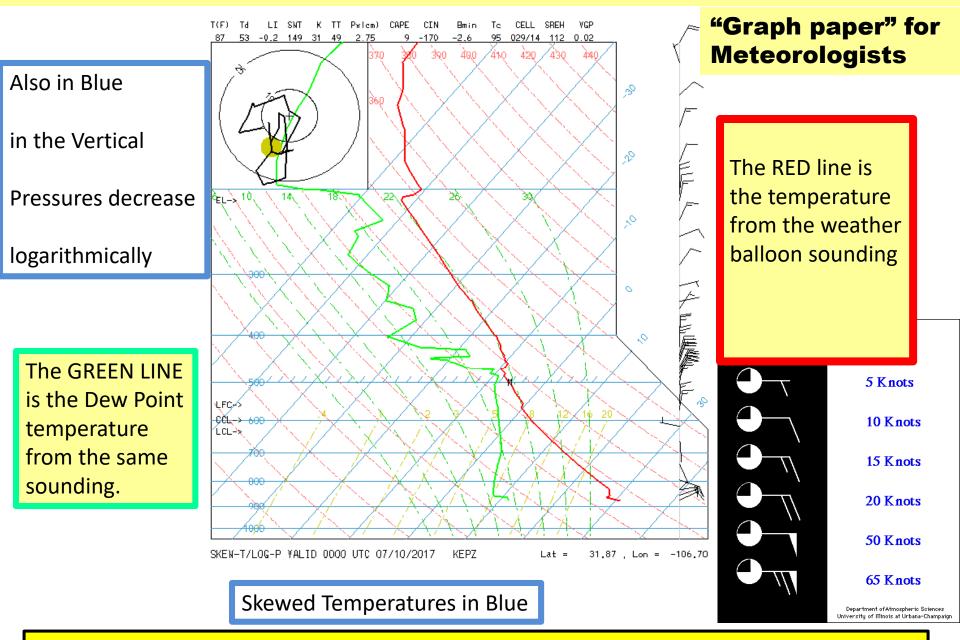


Launching a radiosonde

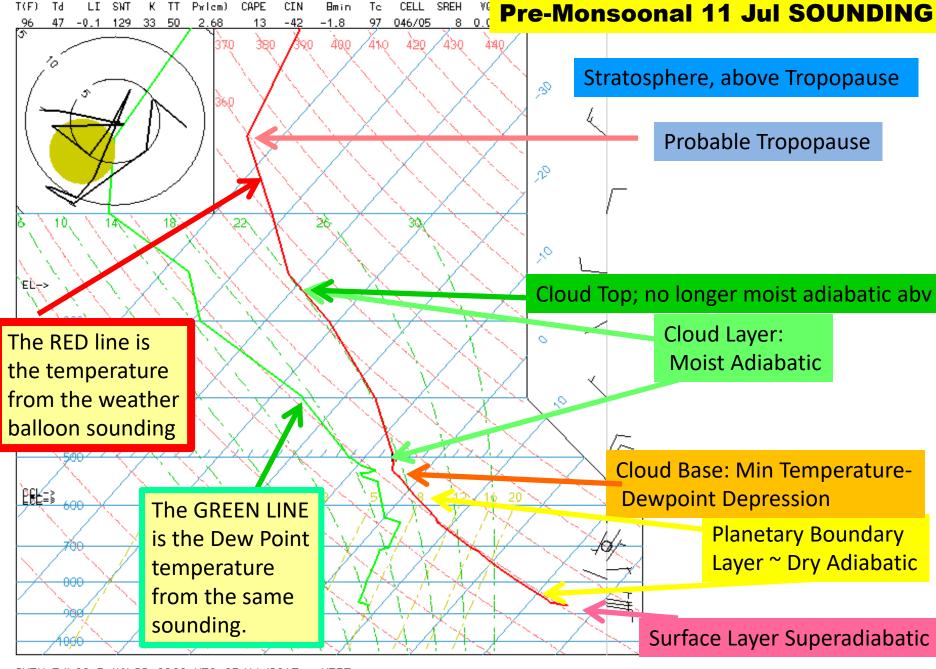
http://weather.rap.ucar.edu/upper/epz.gif Skew-T Log P diagram



http://weather.rap.ucar.edu/upper/epz.gif Skew-T Log P diagram



The Skew-T allows easy calculation of dozens of thermodynamic variables



SKEW-T/LOG-P VALID 0000 UTC 07/11/2017 KEPZ

Lat = 31.87 , Lon = -106.70

https://www.theweathernetwork.com/news/articles/ten-weather-terms-that-will-make -you-look-smart-at-parties/50620

> Moist Adiabatic Lapse Rate ~0.5°C/100m

Lifting Condensation Level Humidity = 100%

Cooler

1.2

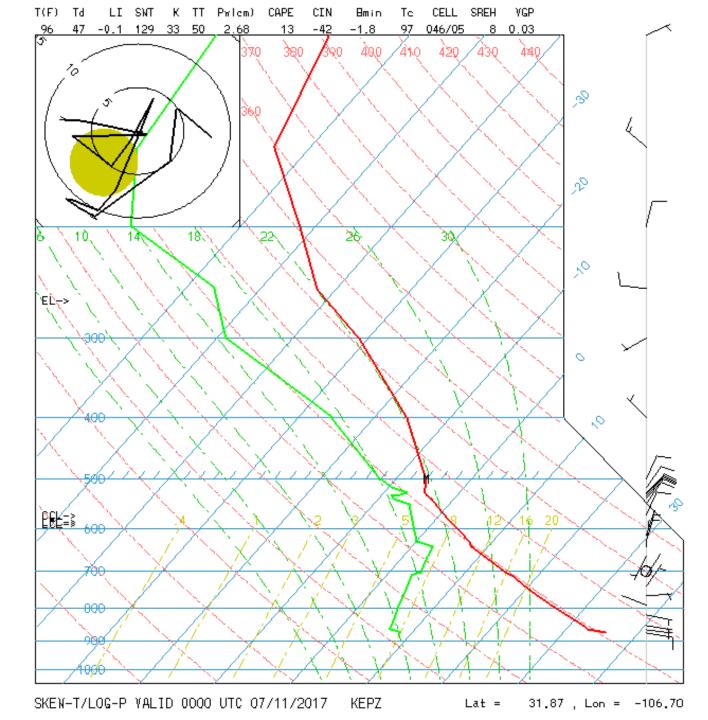
Dry Adiabatic Lapse Rate 1°C/100m

"Dew Temp Point"

Temperature

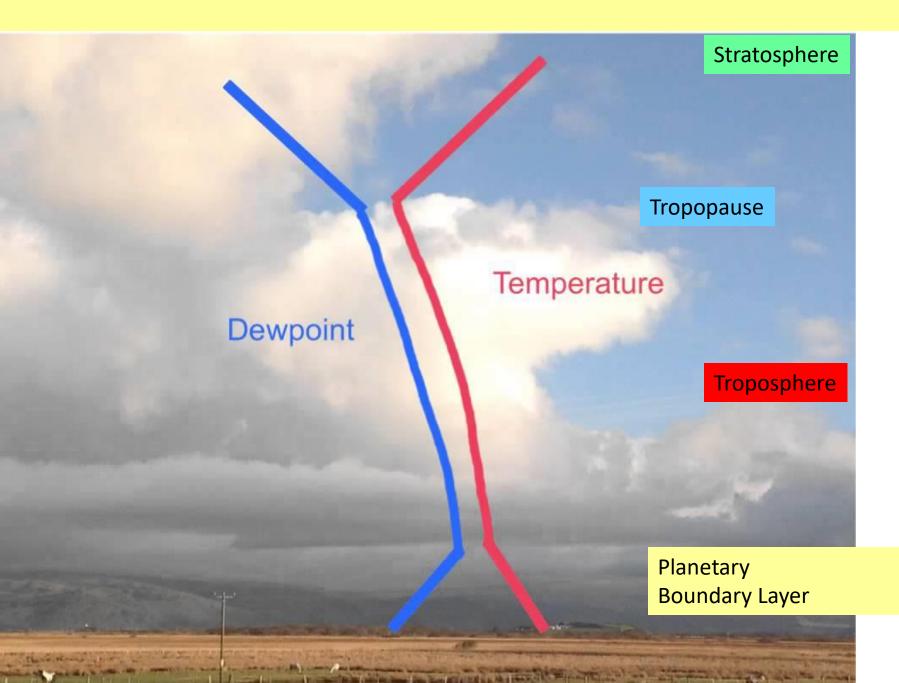
Warmer

Height

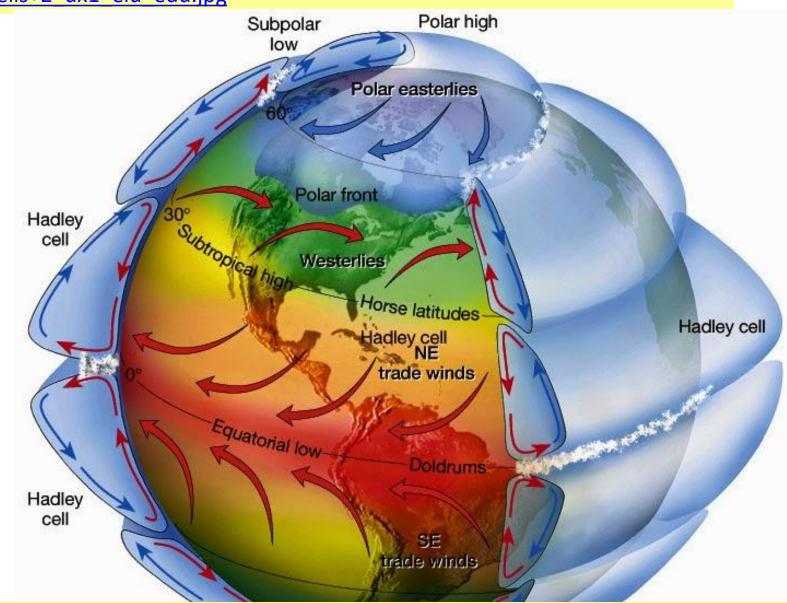


"Textbook Examples" Moist Adiabatic Layer Dry Adiabatic Layer

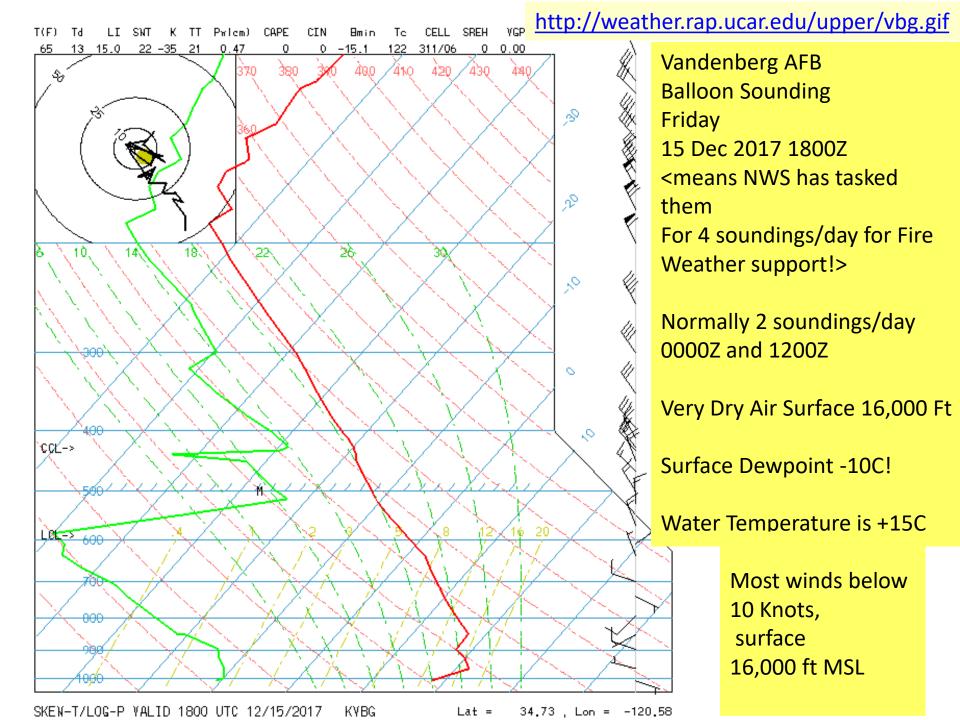
https://www.youtube.com/watch?v=175qE_j5MZ0

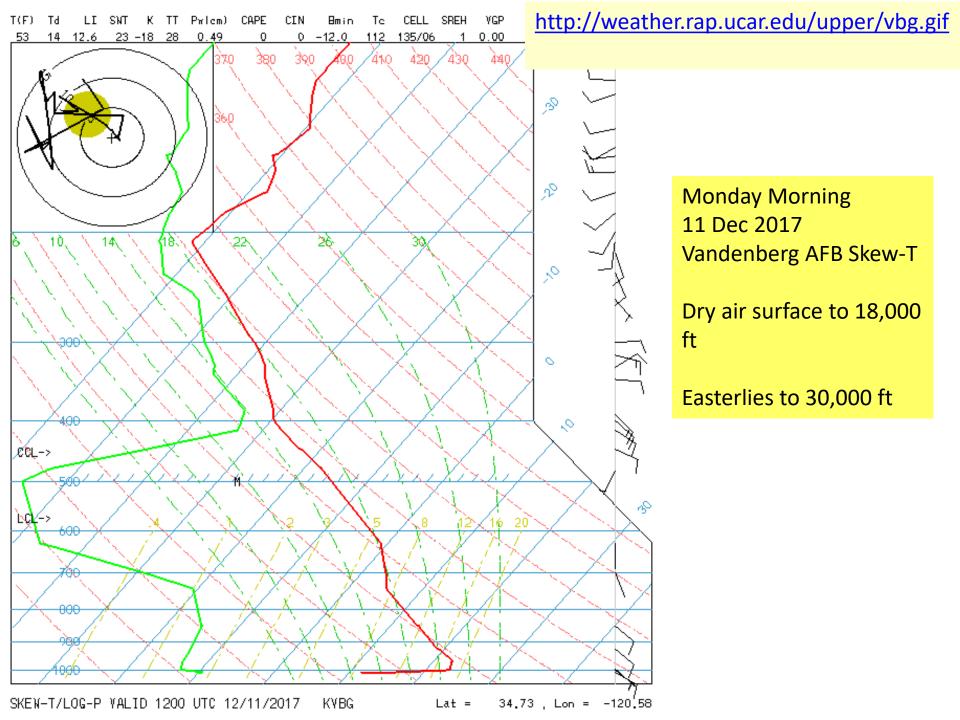


http://1.bp.blogspot.com/-tDTpvWrModo/U2XoP6s57XI/AAAAAAAAA7o/r6Ik0N5VHk8/ s1600/Hadley+cells+2_ux1_eiu_edu.jpg



The subtropical ridge and its seasonal behavior controls annual precipitation patterns in the western United States

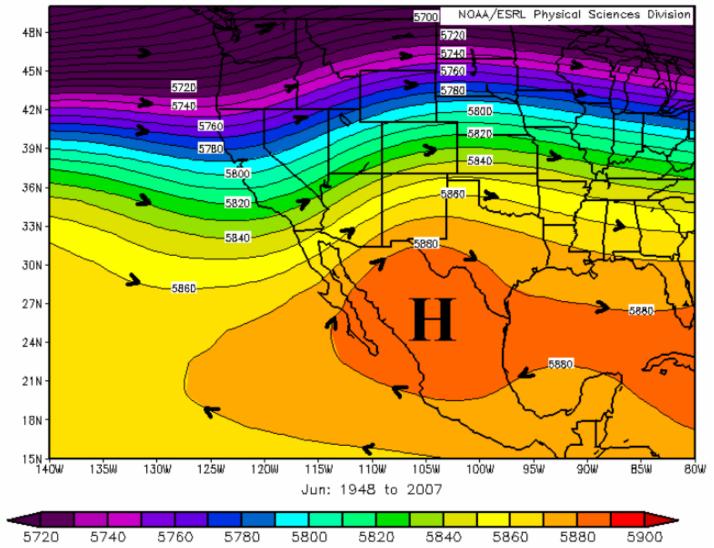




http://www.wrh.noaa.gov/twc/monsoon/monsoon NA.pdf

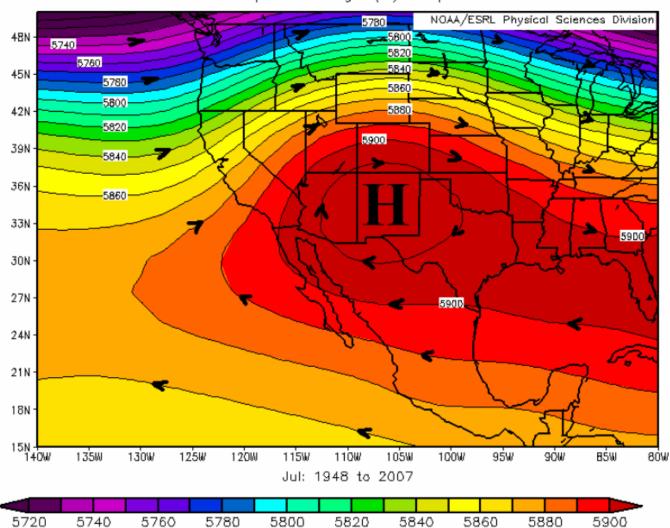
North American Monsoon

NCEP/NCAR Reanalysis 500mb Geopotential Height (m) Composite Mean



Graphic 2: Mean 500mb height pattern, June. Subtropical high is strengthening over northern Mexico

http://www.wrh.noaa.gov/twc/monsoon/monsoon NA.pdf North American Monsoon



NCEP/NCAR Reanalysis 500mb Geopotential Height (m) Composite Mean

Graphic 3: Mean 500mb height pattern, July. Subtropical high is near maximum seasonal strength over New Mexico.

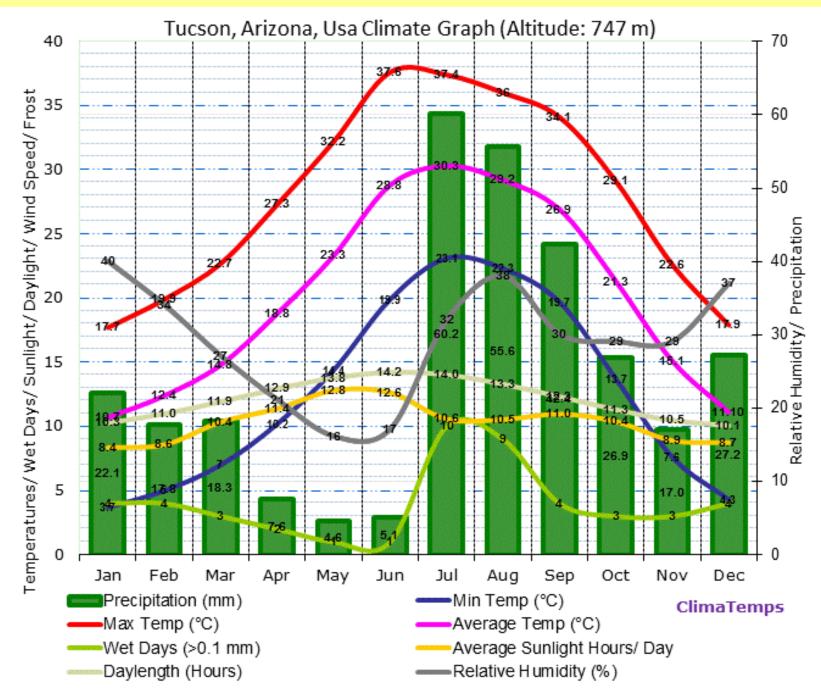
El Paso and Tucson are both desert locations with annual rainfall distribution determined by the subtropical ridge; most rainfall is in the Southwest Monsoon.

Los Angeles, San Diego and San Francisco all have a Mediterranean Climate Winter wet and summer dry.

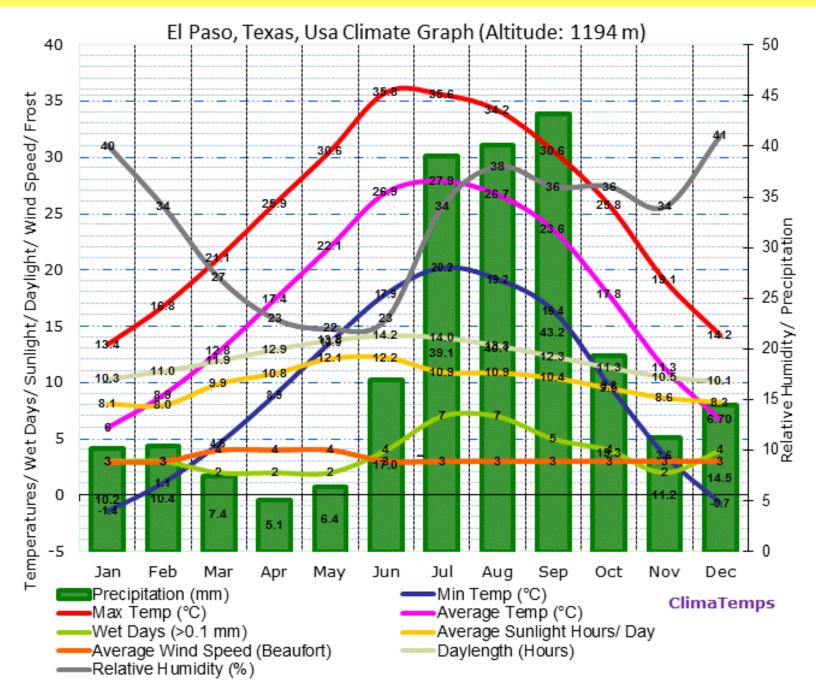
The poleward movement of the Subtropical Ridge acts to shift the Storms in the Westerlies far to the north, leaving them "winter wet" only.

The graphics from <u>http://www.climatemps.com/</u> are most demonstrative of this

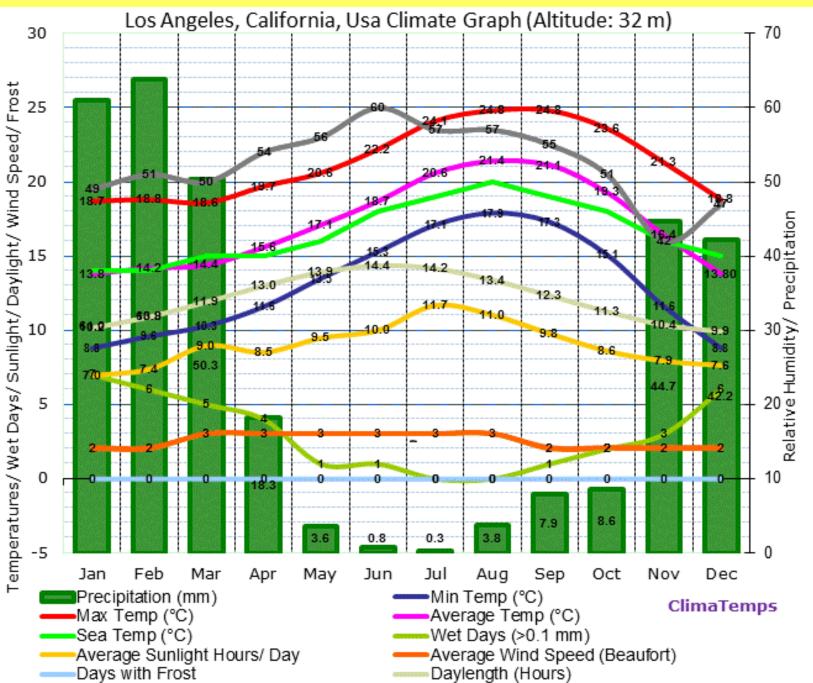
http://www.tucson.climatemps.com/index.php



http://www.el-paso.climatemps.com/



http://www.los-angeles.climatemps.com/



http://time.com/4975818/california-fires-october/

CALIFORNIA

Here's Why October Is California's Most Dangerous Month for Wildfires

"....October ...most dangerous month for California wildfires as dry vegetation and seasonal winds fuel speedy flames.

"By the time you get to this season, right when you're starting to anticipate... rain, it's actually the most fire prone part of the year," said Max Moritz, a wildfire specialist at the University of California Cooperative Extension.

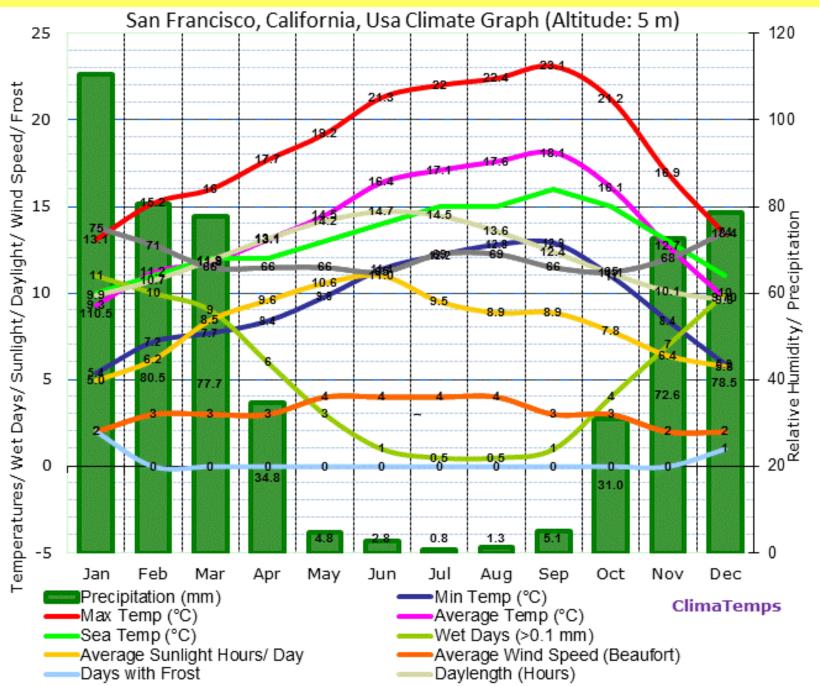
...most destructive and largest fires in California...have occurred in...October.

...1991 Oakland hills fire that <u>destroyed 3,500 homes and killed 25 people</u> in Alameda County near San Francisco... the state's most destructive fire.

...the October 2003 Cedar fire in San Diego county <u>scorched 273,246 acres of land</u> — the most of any fire in the state's history.

October, 2017 "Diablo Winds" fire in California's Wine Country

http://www.san-francisco.climatemps.com/index.php



October, 2017, Fire Disaster in California's Wine Country

and

The Weather conditions which enabled it: The Diablo Winds

http://www.express.co.uk/news/nature/864519/California-fires-map-diablo-winds-wildfires

-latest-USA

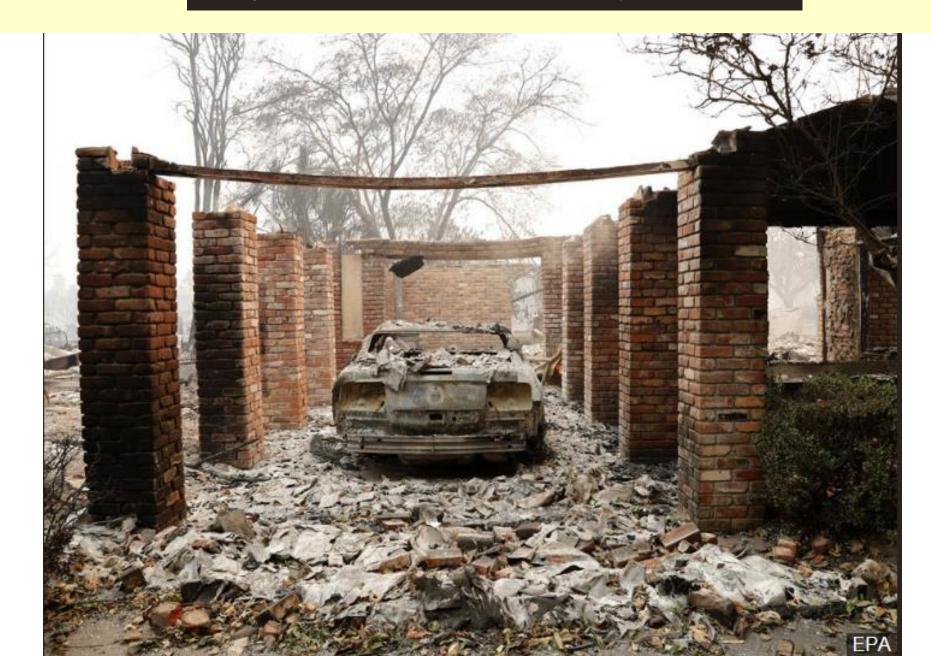
Firefighters assess the scene as a house burns in the Napa wine region of California



http://www.express.co.uk/news/nature/864519/California-fires-map-diablo-winds-wildfires

-latest-USA

A destroyed car sits in the remains of a home in Santa Rosa, California



http://www.mercurynews.com/2017/10/11/wine-country-fires-gov-brown-vetoed-2016-billaimed-at-power-line-wildfire-safety/

News California News

Wine Country fires: Gov. Brown vetoed 2016 bill aimed at power line, wildfire



Fallen electrical lines on Parker Hill Road in Santa Rosa on Tuesday. (Nhat V. Meyer/Bay Area News Group)

http://www.mercurynews.com/2017/10/11/wine-country-fires-gov-brown-vetoed -2016-bill-aimed-at-power-line-wildfire-safety/

A year ago, a bipartisan bill aimed at reducing the risk of wildfires from overhead electrical lines went to Gov. Jerry Brown's desk. It was vetoed.

The author of the measure — passed unanimously by both houses of the Legislature —now says the governor missed out on a chance to tackle one of his state's longstanding vulnerabilities: massive wildfires endangering residential communities.

But the governor's office and the California Public Utilities Commission say the bill duplicated efforts already underway among the CPUC, Cal Fire and utilities like PG&E. http://www.mercurynews.com/2017/10/11/wine-country-fires-gov-brown-vetoed -2016-bill-aimed-at-power-line-wildfire-safety/

Now, as a series of deadly fires rages in Wine Country, serious questions are once again being asked about the safety of overhead electrical wires in a state prone to drought and fierce winds.

On Wednesday, Cal Fire said that investigators have started looking into whether toppled power wires and exploding transformers Sunday night may have ignited the simultaneous string of blazes.

https://wattsupwiththat.com/2017/10/12/qotw-climatologist-hillary-clinton-shotdown-by-reality/



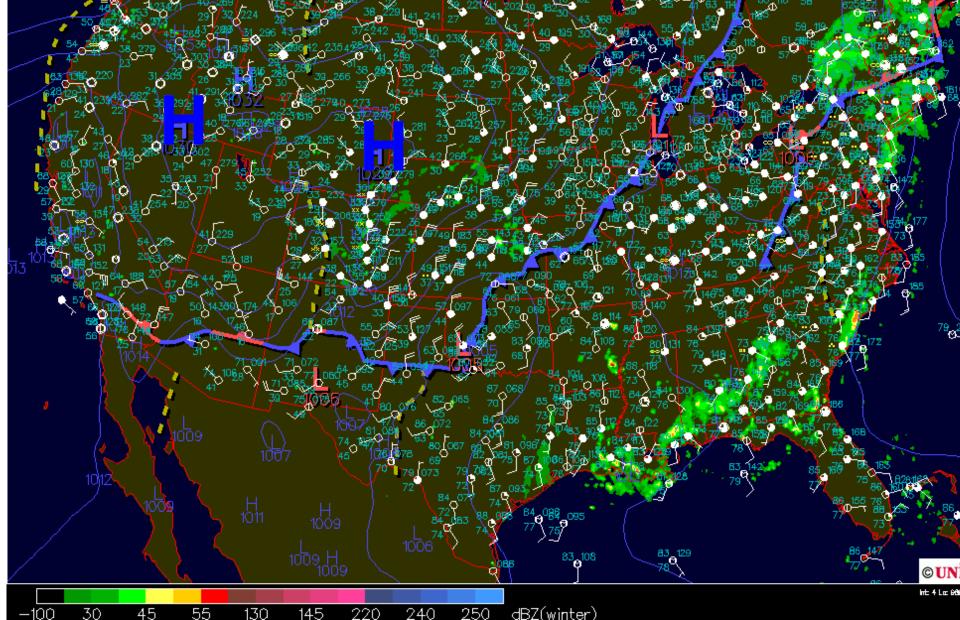
http://weather.unisys.com/surface/sfc_map.gif Monday Morning 9 October: High Pressure over Nevada a classic surface feature for Diablo and Santa Ana Winds.

<u>Surface Data Plot</u>

đ.

7 270

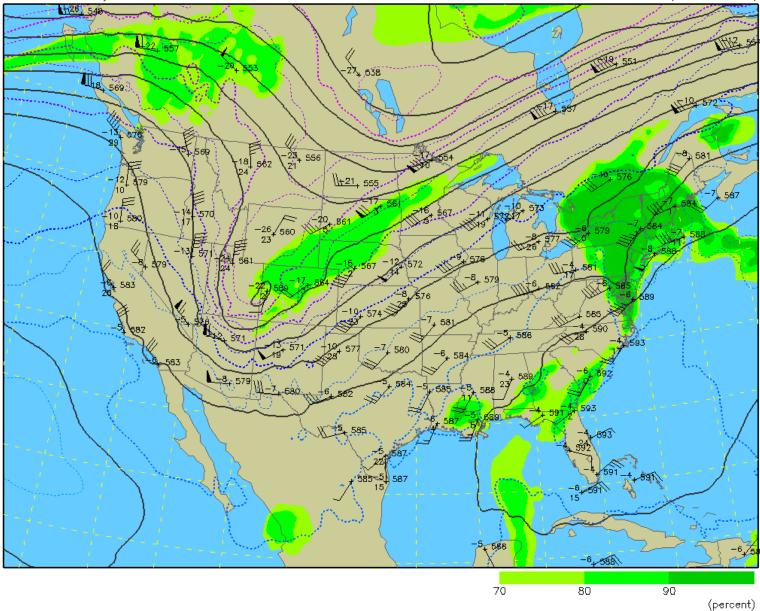
1645Z 9 OCT



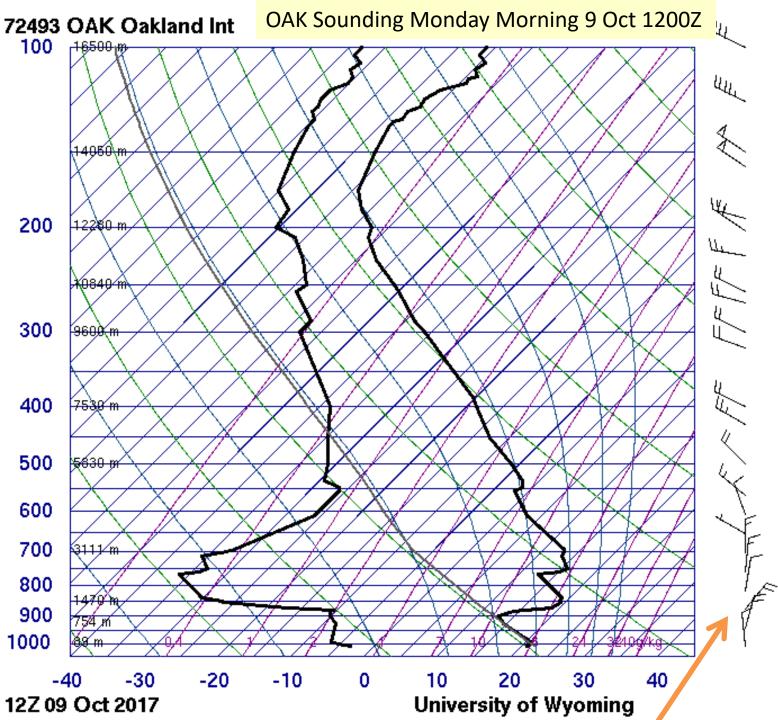
500 mb Heights (dm) / Temperature (°C) / Humidity (%) 9 OCT 2017/ 12Z 500 mb

0-hour analysis valid 1200 UTC Mon 09 Oct 2017

RAP (12z 09 Oct)

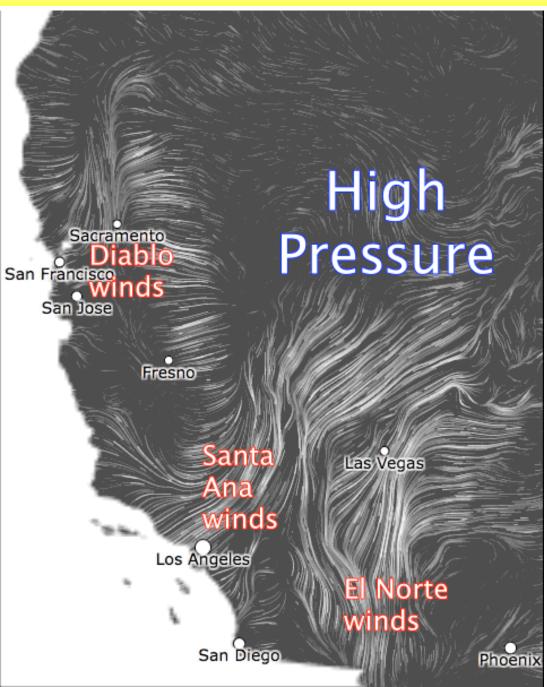


High Pressure building in at the surface and aloft in October over the Pacific Northwest is the key ingredient for Diablo Wind events.

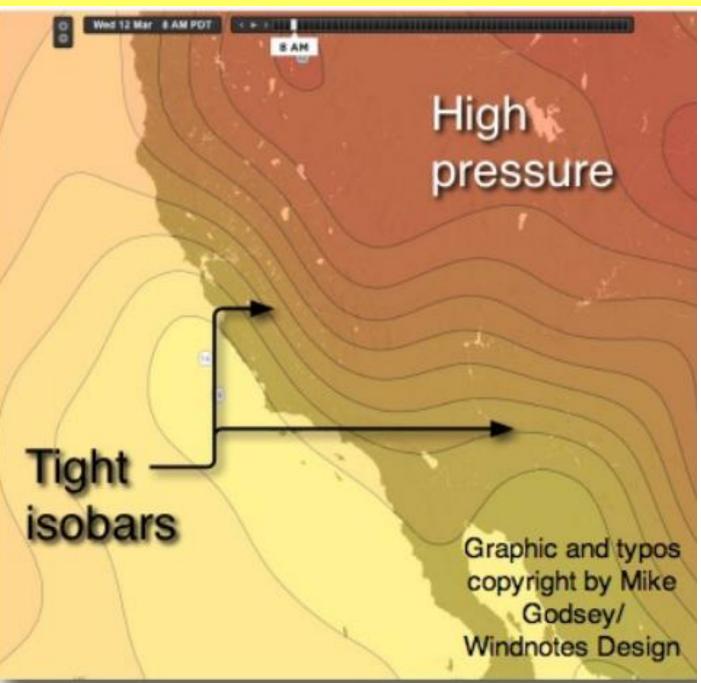


SLAT 37.73 SLON -122.21 3.00 SELV SHOW 17.50 21.69 LIFT 21.67 LFTV SWET 50.99 -47.5 KINX. CTOT -20.7 VTOT 25.30 TOTL 4.60 CAPE 0.00 CAPV 0.00 0.00 CINS 0.00 CINV EQLV -9999 EQTV -9999 LFCT -9999 LFCV -9999 BRCH 0.00 0.00 BRCV 261.8 LCLT 664.9 LCLP MLTH 294.2 MLMR 2.44 THCK 5741. **PWAT 5.83**

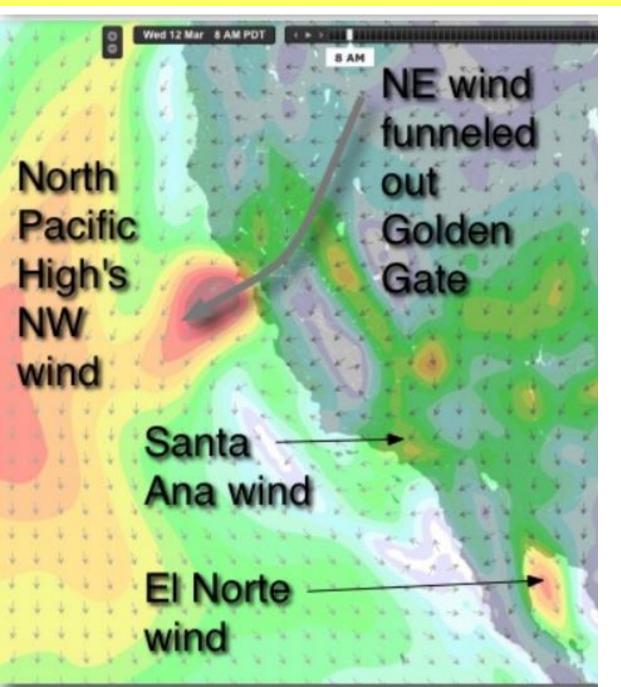
Offshore Winds Downslope Wind Adiabatic Compression Dry Conditions up to 16,500 ft ~550 mb http://blog.weatherflow.com/wp-content/uploads/2014/03/DiabloWindsANIM.gif



http://blog.weatherflow.com/wp-content/uploads/2014/03/high-pressurewind.jpg



http://blog.weatherflow.com/wp-content/uploads/2014/03/high-pressurewind.jpg



https://blog.wdtinc.com/the-devil-winds-of-california

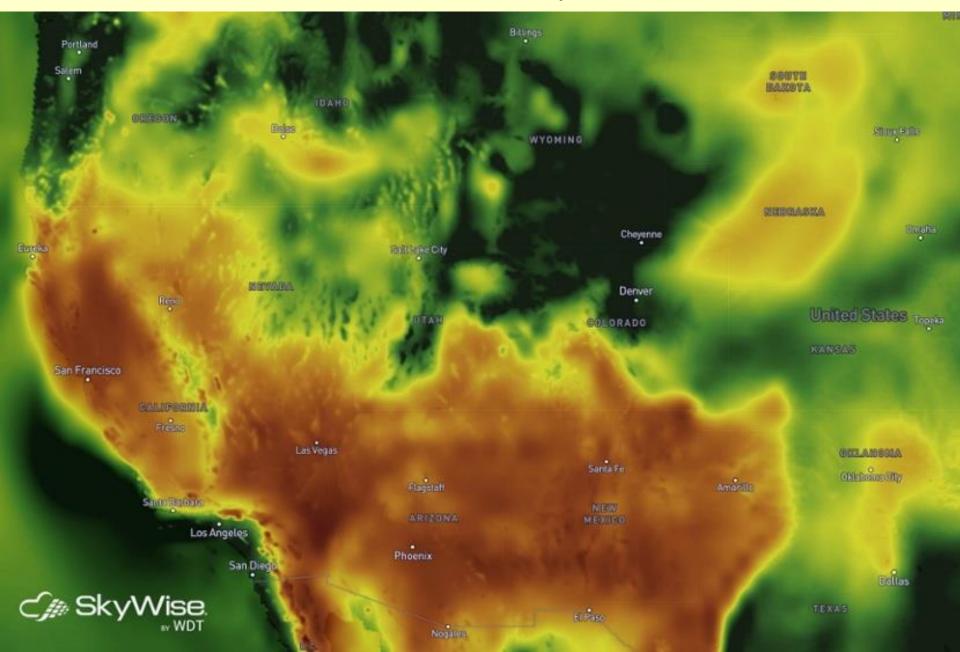


Sacramento

Santa Rosa

San Francisco

https://blog.wdtinc.com/the-devil-winds-of-california Relative Humidity Chart



https://www.marketslant.com/ article/15-stark-videos-exposereality-california-wildfires-0

WINDS WHIP UP FIERCE CALIFORNIA FIRES

Hot, dry winds (known as **Santa Anas** in southern California and **Diablos** in northern California) often whip up roaring fires across the state. It usually begins due to winds circulating around a high-pressure area over Nevada or Utah.

HIGH WINDS

Winds can gust to **80 mph** in the mountains and passes.

2COMPRESSED AIR

Cool air descends from the high deserts and warms as it descends toward the coast.

3 COASTAL REGIONS

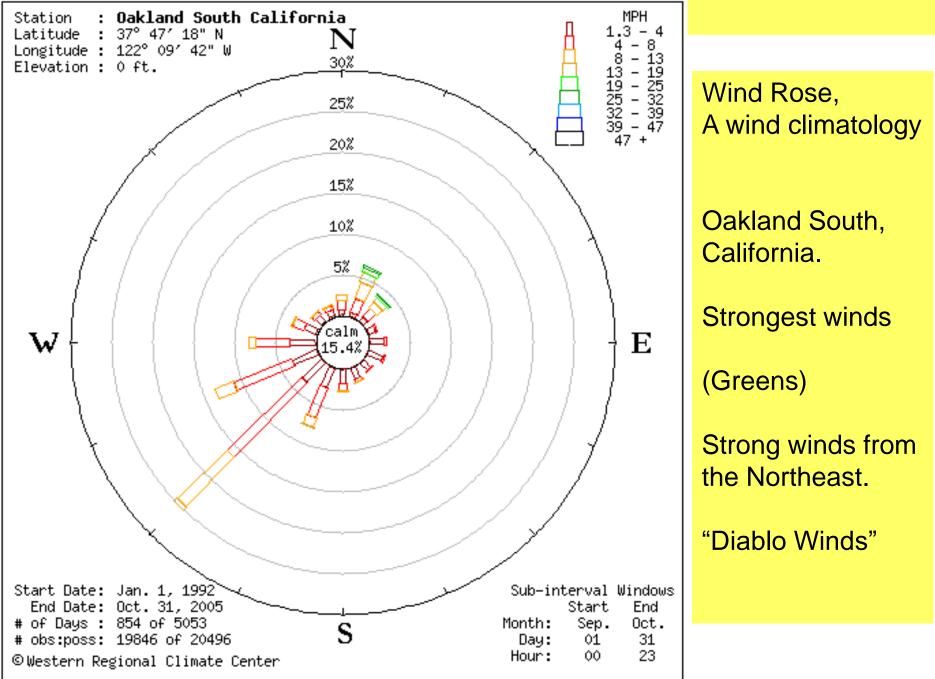
Air squeezes through canyons, fanning fires.

USA TODAY

HOT, DRY VALLEYS

SOURCE National Weather Service; Storm Prediction Center

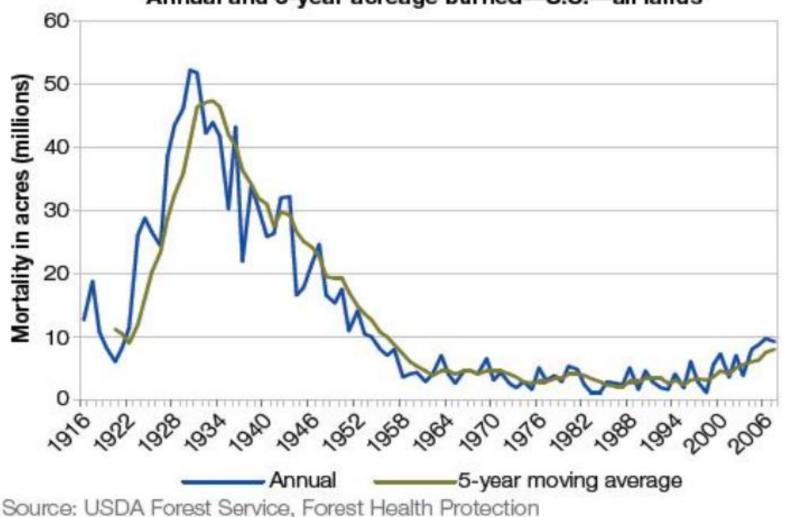
http://tornado.sfsu.edu/geosciences/classes/m356/OaklandHillsFire/OaklandSouth.gif



Fire data in the form of historical time series

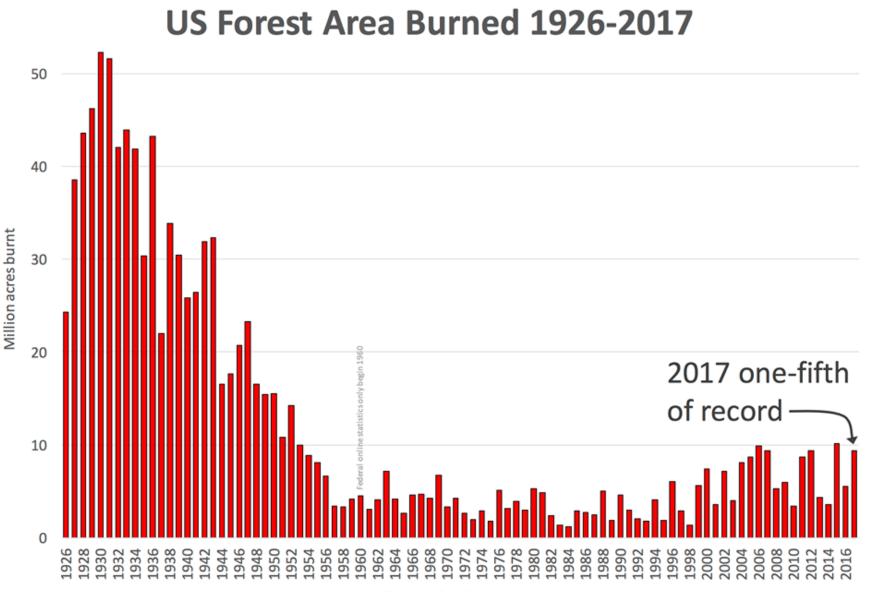
https://web.archive.org/web/20131002091611/https://www.fs.fed.us/research/ Sustain /criteria-indicators/indicators/indicator-316.php





Annual and 5-year acreage burned—U.S.—all lands

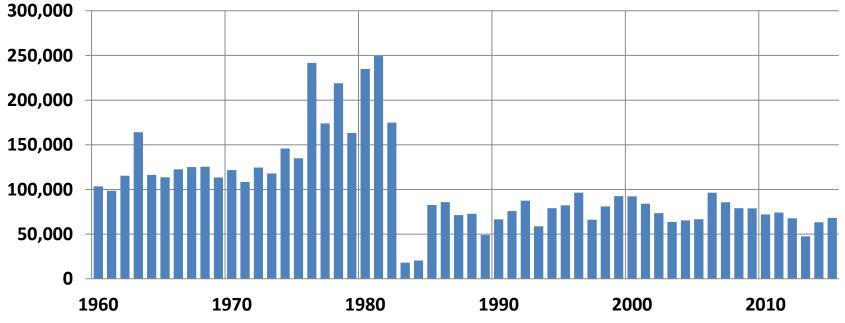
http://www.climatedepot.com/2017/12/10/peer-reviewed-studies-historical-data-reject-claims -california-wildfires-are-due-to-man-made-climate-change/ ?mc_cid=067bda1830&mc_eid=6d17b006b3



Sources: National Interagency Fire Center, data 1960-2016, https://www.nifc.gov/fireInfo/fireInfo_stats_totalFires.html, 2017 data until Oct 13, adjusted to similar fraction burnt area over past 9 years Historical Statistics of the United States - Colonial Times to 1970 Vol 1, Series L 48-55, 1926-70, perfect overlap for 1960-70. facebook.com/bjornlomborg



https://www.nifc.gov/fireInfo/nfn.htm

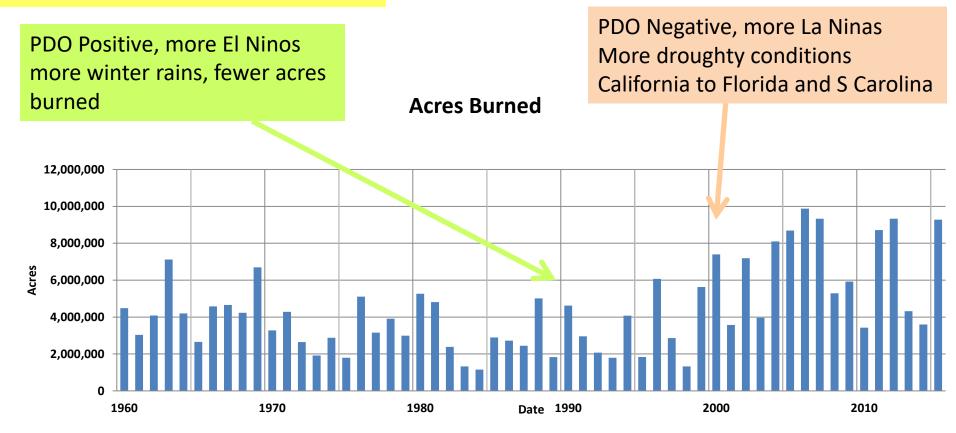


Fires

Date

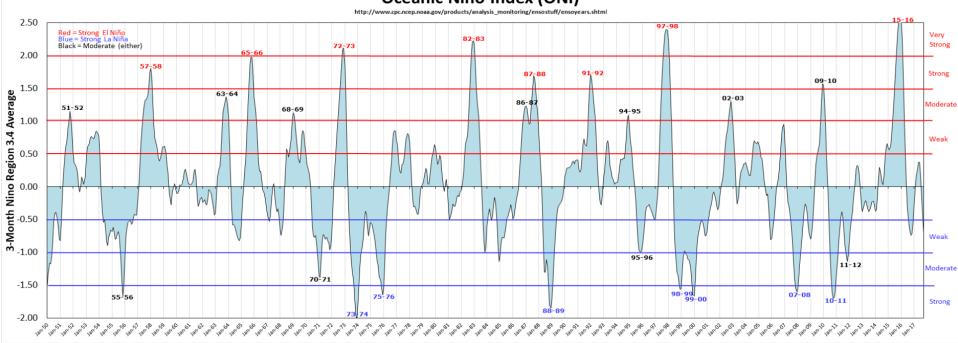
NATIONAL INTERAGENCY FIRE GENTER

https://www.nifc.gov/fireInfo/nfn.htm



Why is/was 2017 such a dangerous year?

http://ggweather.com/enso/oni.htm



Oceanic Niño Index (ONI)



News & Features	Maps & Data	Teaching Climate About Contact FAQs Site Map What's New?	La Niña
<i>Climate news, stories, images, & video (ClimateWat Magazine)</i>			xtreme Events

Home » September ENSO update: La Niña Watch!

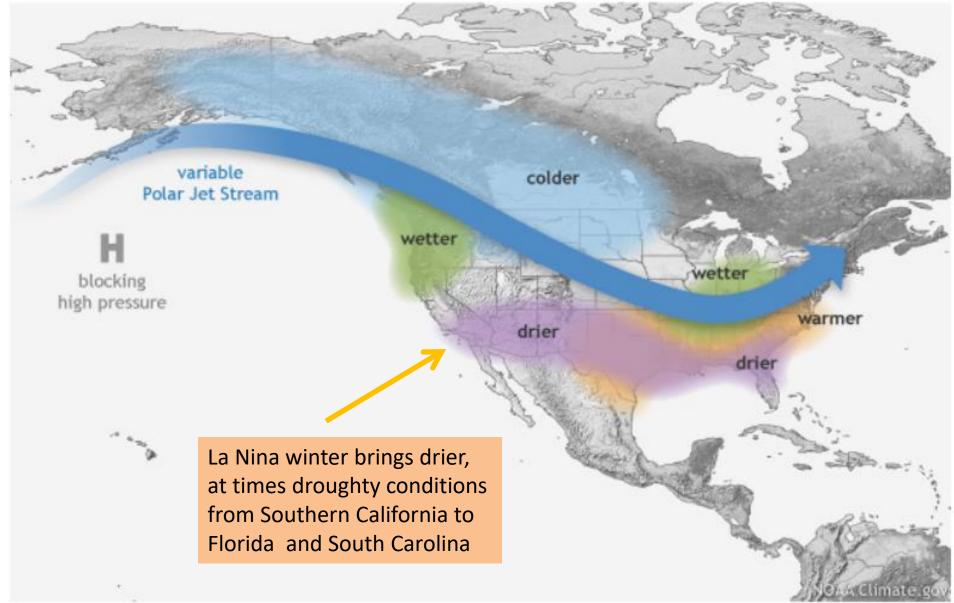
September ENSO update: La Niña Watch!

Author: Emily Becker

September 12, 2017

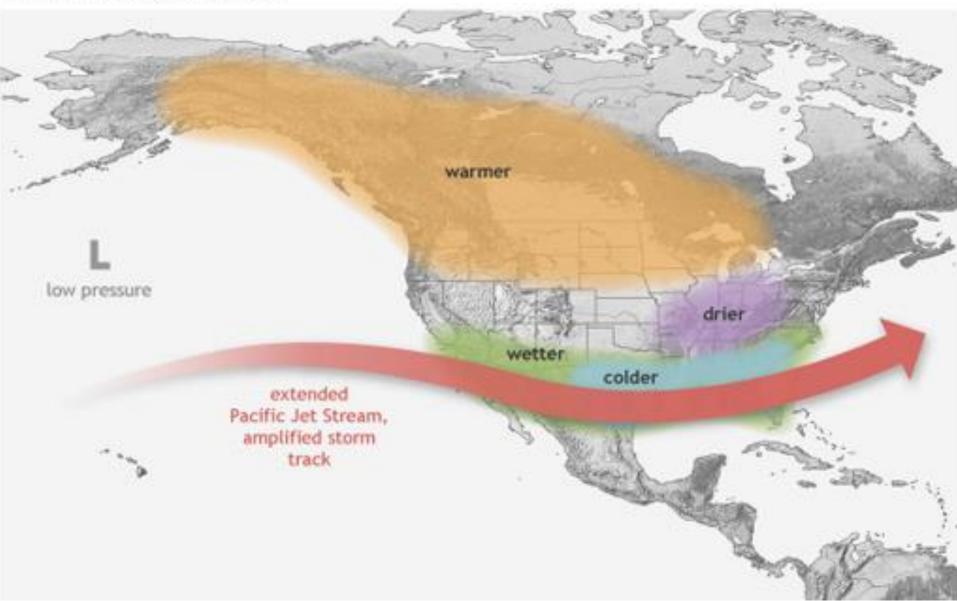
https://www.climate.gov/sites/default/files/LaNin%CC%83a_winter_flat_updated_620_0.png

WINTER LA NIÑA PATTERN



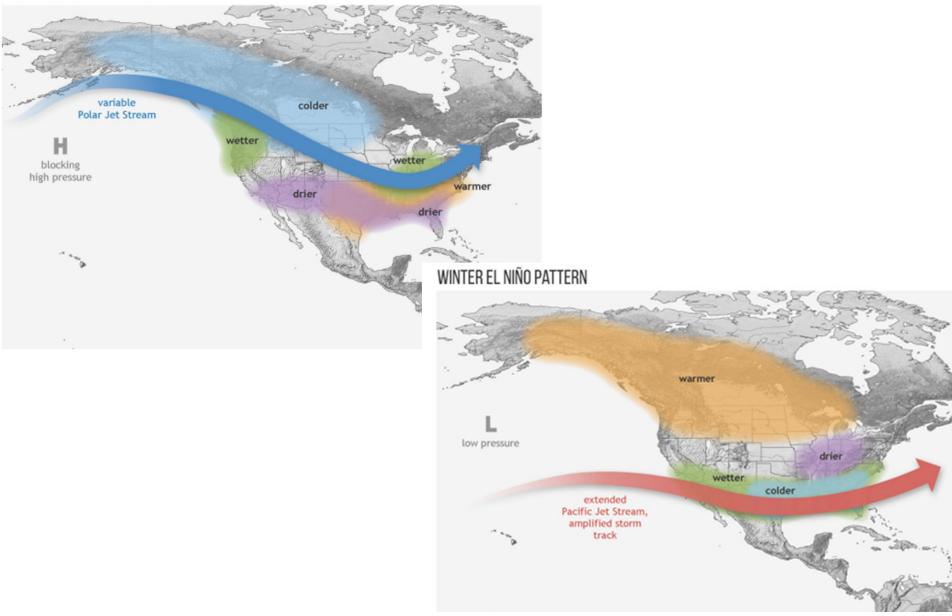
https://www.climate.gov/news-features/featured-images/how-el-ni%C3%B1o-and-la-ni %C3%B1a-affect-winter-jet-stream-and-us-climate

WINTER EL NIÑO PATTERN



https://www.climate.gov/news-features/featured-images/how-el-ni%C3%B1o-and-la-ni %C3%B1a-affect-winter-jet-stream-and-us-climate

WINTER LA NIÑA PATTERN



https://www.usatoday.com/story/weather/2017/01/12/northern-california-drought-ends/ /96487788/



NEWS	SPORTS	LIFE	MONEY	TECH	TRAVEL	OPINION	💽 42°	CROSSWORDS	WASHINGTON	MORE

20 inches of rain, 12 feet of snow finally end 5-year drought in N. California

Doyle Rice, USA TODAY Published 11:32 a.m. ET Jan. 12, 2017 | Updated 4:33 p.m. ET Jan. 12, 2017



Deadly storms batter western U.S.

Early morning rush hour traffic crawls along the Hollywood Freeway on it's way toward downtown Los Angeles on Jan. 12, 2017.

Flooded roads and freeways along with low fog and clouds made for a hazardous commute Thursday as another round of heavy rain moved through Southern California, raising fresh fears of possible mudslides in wildfire burn areas.

https://en.wikipedia.org/wiki/Oroville Dam crisis



Water flowing into Oroville Dam's main spillway (bottom) and overflowing into the emergency spillway (top), February 11, 2017

Oroville Dam Crisis



View of Oroville Dam's main spillway (center) and emergency spillway (top), February 11, 2017. The large gully to the right of the main spillway was caused by water flowing through its damaged concrete surface.

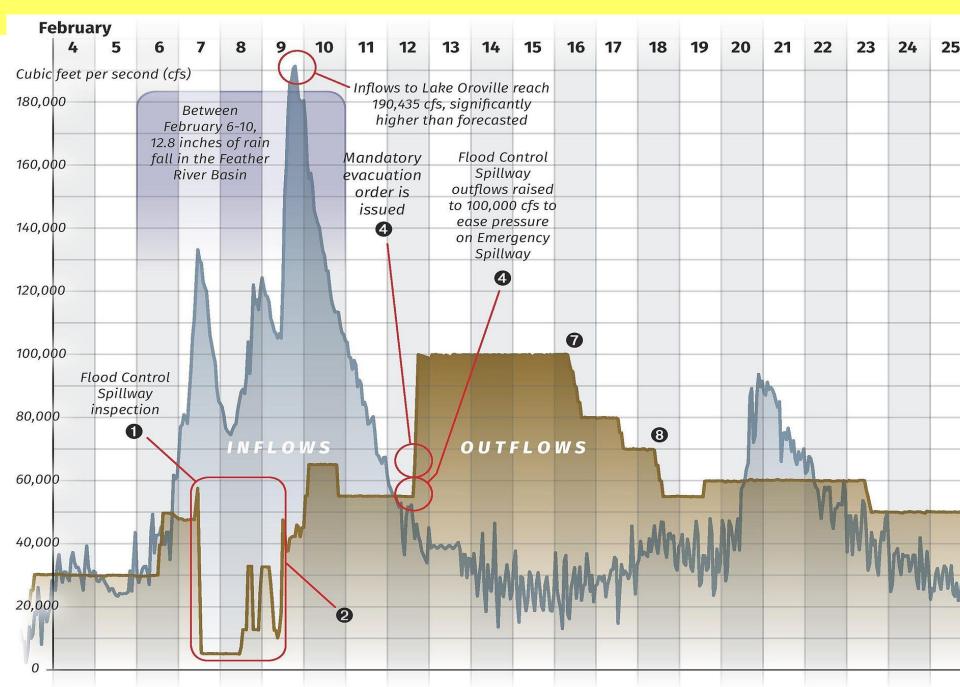
Date	February 2017				
Location	Oroville Dam				
Coordinates	Q 39.5426°N 121.4920° W				
Cause	rain				

https://en.wikipedia.org/wiki/Oroville Dam crisis



Damage to the main spillway began as a crater in the middle (center) and eventually resulted in a separate channel eroded to the side (right). At left, the main spillway is shown in March 2011 while at its maximum discharge rate.

https://en.wikipedia.org/wiki/Oroville Dam crisis





California's Rainy Season of 2016-17 Is Officially One for the Record Books



https://www.usatoday.com/story/weather/2017/06/07/californias-endless-winter-8 feet-snow-still-ground-june/102586278/

USA TODAY

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NEWS SPORTS LIFE MONEY TECH TRAVEL OPINION 🏷 41° CROSSWORDS WASHINGTON VIDEO NEWSLETTERS THANKSGIVING

California's endless winter: 8 feet of snow still on the ground in June

Doyle Rice, USA TODAY Published 12:44 p.m. ET June 7, 2017 | Updated 2:59 p.m. ET June 9, 2017



In April, visitors view Lake Tahoe's snow-covered Sierra Nevada Mountains, where record snowfall made the winter the wettest since records were kept nearly a century ago in Lake Tahoe, Calif.

(Photo: Mike Nelson, EPA)

https://wattsupwiththat.com/2017/04/14/what-permanent-drought-new-all-time-rainfallrecord-set-for-california/

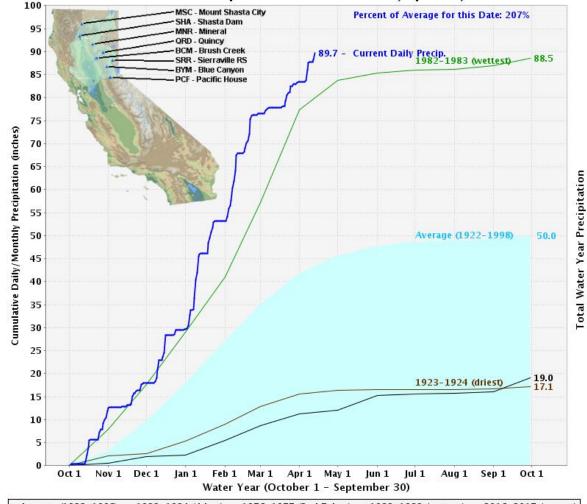
Watts Up With That?

The world's most viewed site on global warming and climate change

What "permanent drought"?

New all-time rainfall record set for California

SACRAMENTO – Never in nearly a century of Department of Water Resources (DWR) recordkeeping has so much precipitation fallen in the northern Sierra in a water year.



Northern Sierra Precipitation: 8-Station Index, April 13, 2017

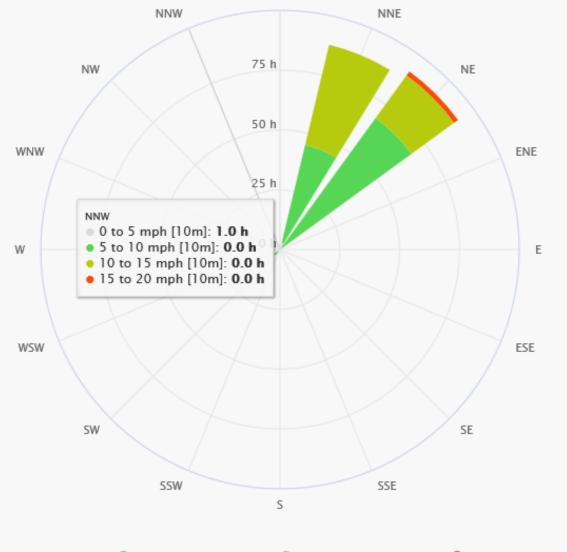
Average (1922-1998) — 1923-1924 (driest) — 1976-1977 (2nd Driest) — 1982-1983 (wettest) — 2016-2017 (current)

December, 2017 "Santa Ana Winds" in California's South Coast

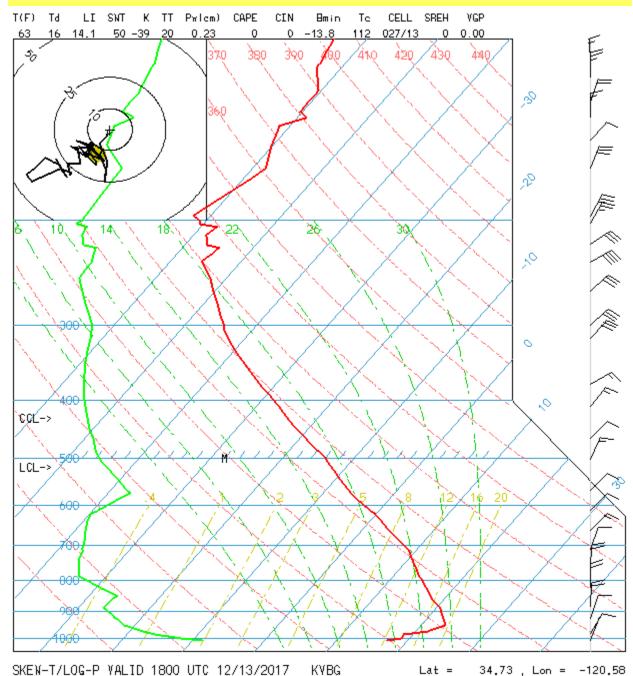
http://www.sfgate.com/weather/article/fire-pyrocumulus-cloud-Thomas-Firesmoke-Ventura-12422062.php?ipid=articlerecirc



https://www.meteoblue.com/en/weather/archive/windrose/ontario_united-states-of-america 5379439



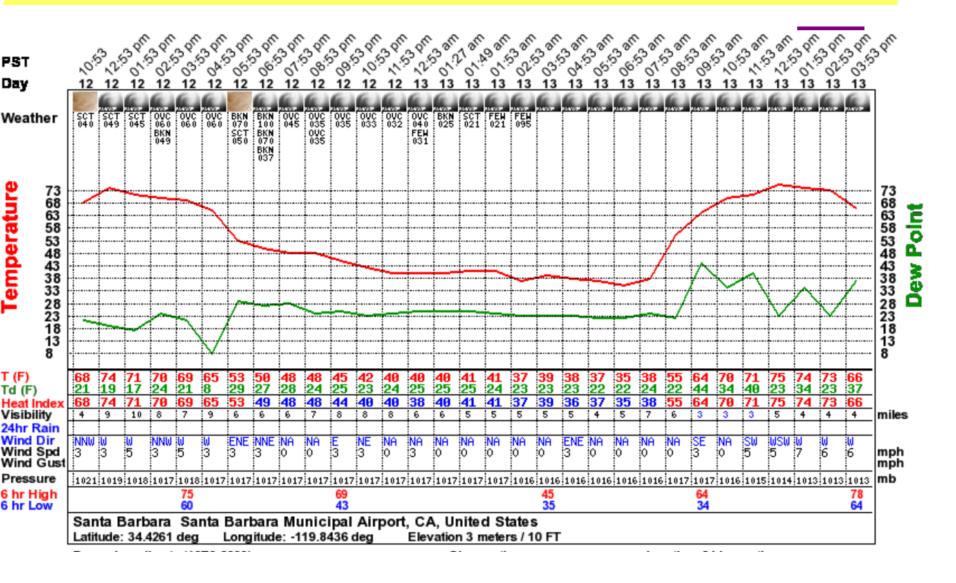
http://weather.rap.ucar.edu/upper/vbg.gif



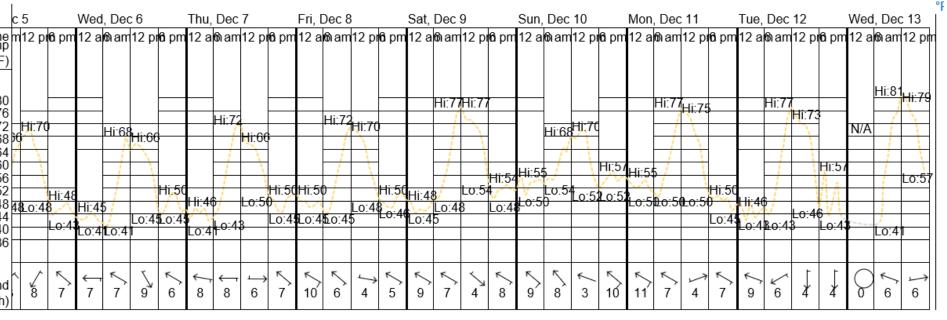
Wednesday 13 Dec

Vandenberg AFB

Santa Barbara Meteogram 12-13 December: Sharp changes in dewpoints associated with Changes in wind direction

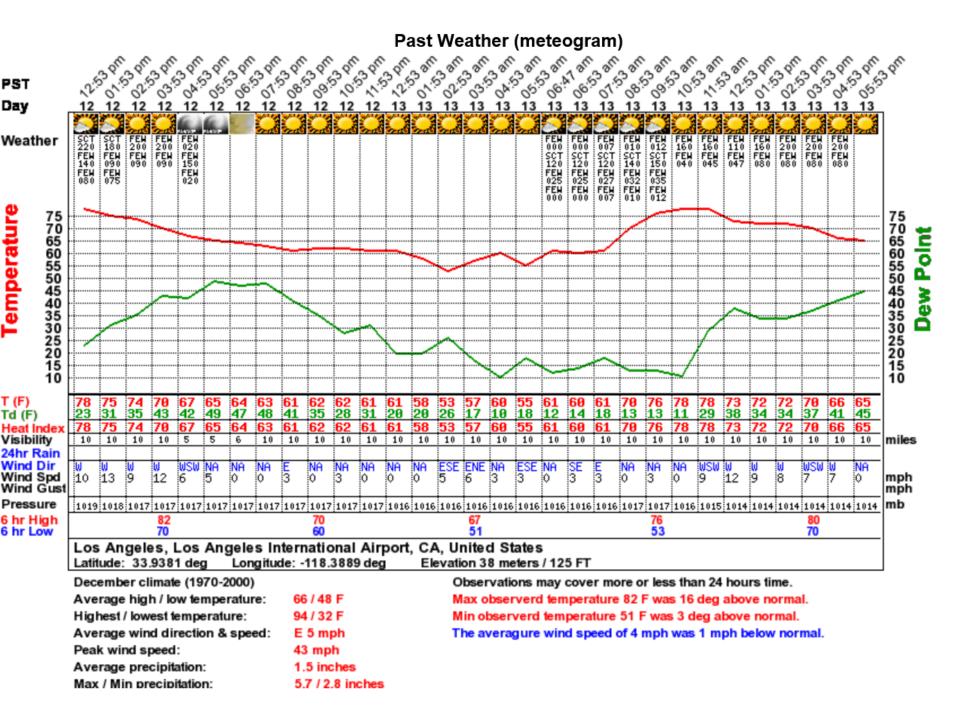


https://www.timeanddate.com/weather/@7262449/historic

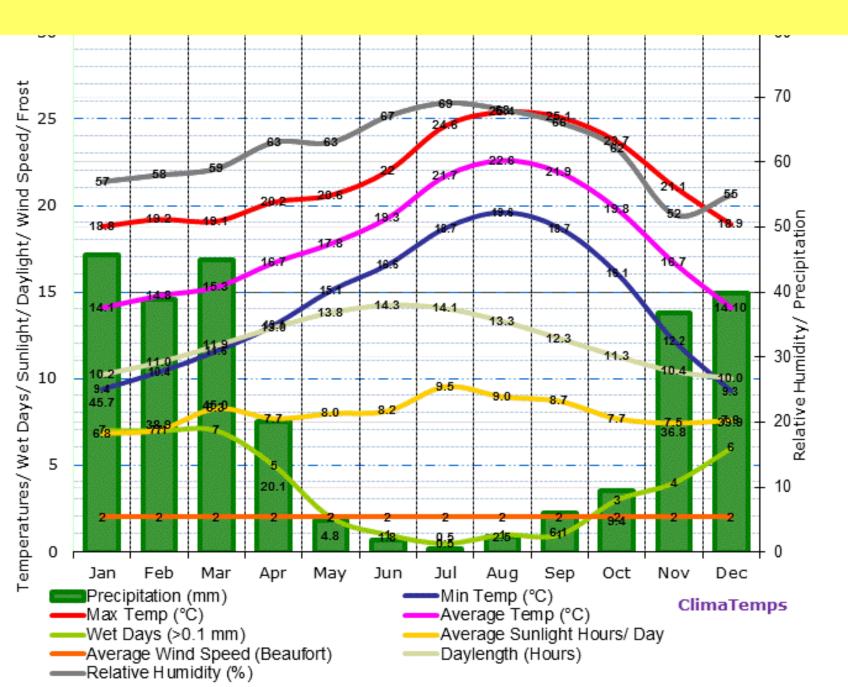


Past Weather in Vandenberg Air Force Base — Graph

Tuesday, December 12, 2017, 6:00 am - 12:00 pm

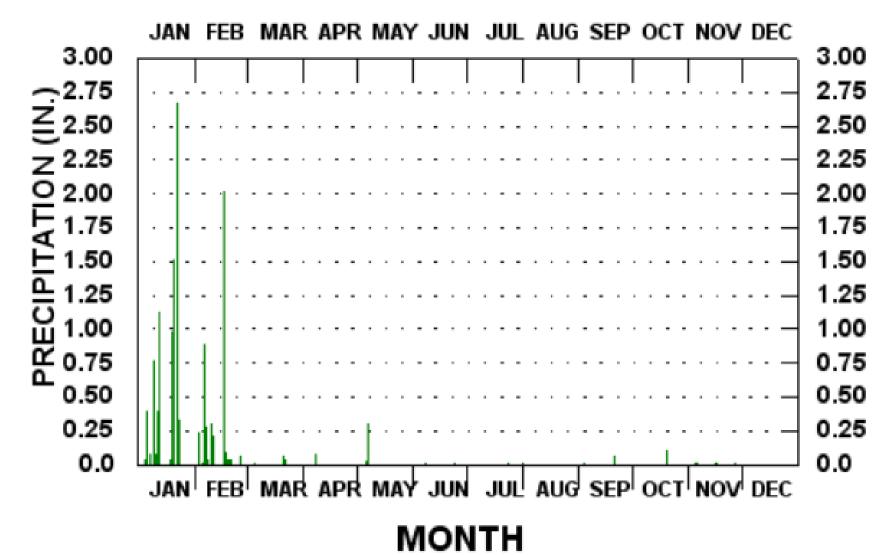


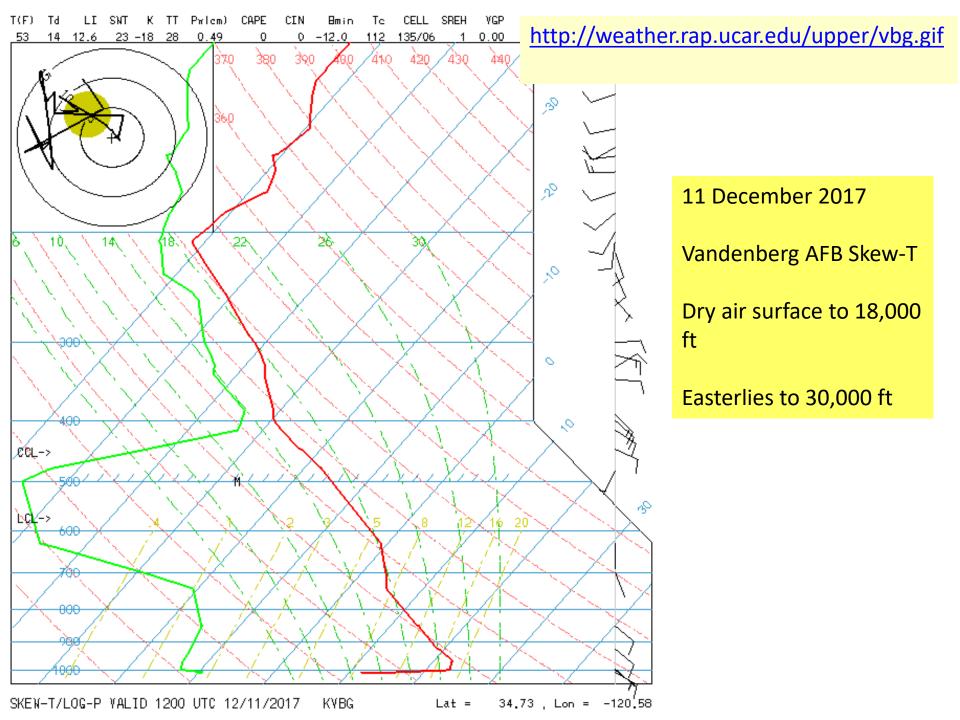
http://www.san-diego.climatemps.com/index.php



https://www.climatestations.com/wp-content/uploads/2017/12/lacv2017.gi

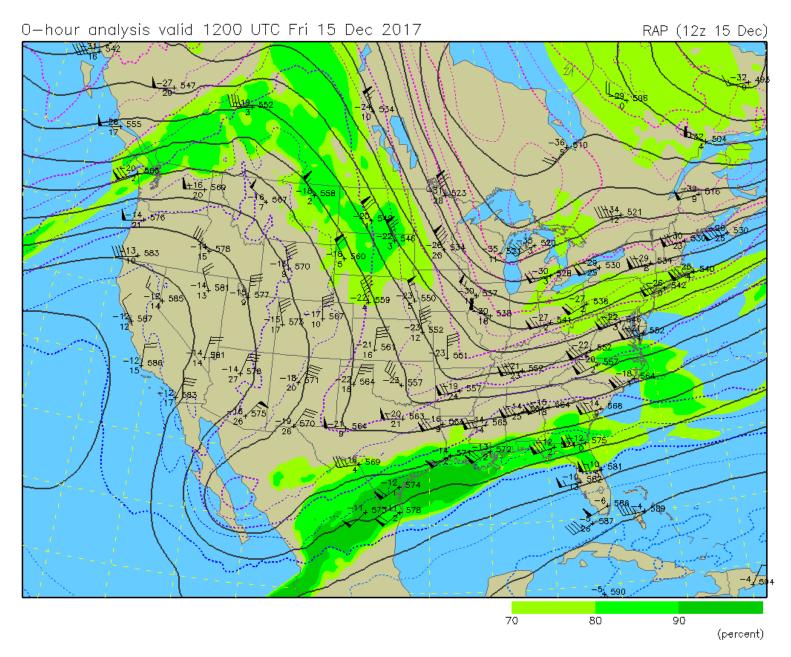
DOWNTOWN LOS ANGELES USC CAMPUS DAILY PRECIPITATION FOR 2017





SVV mb rawinsonde data 122 Fit 15 Dec 2017

500 mb Heights (dm) / Temperature (°C) / Humidity (%)



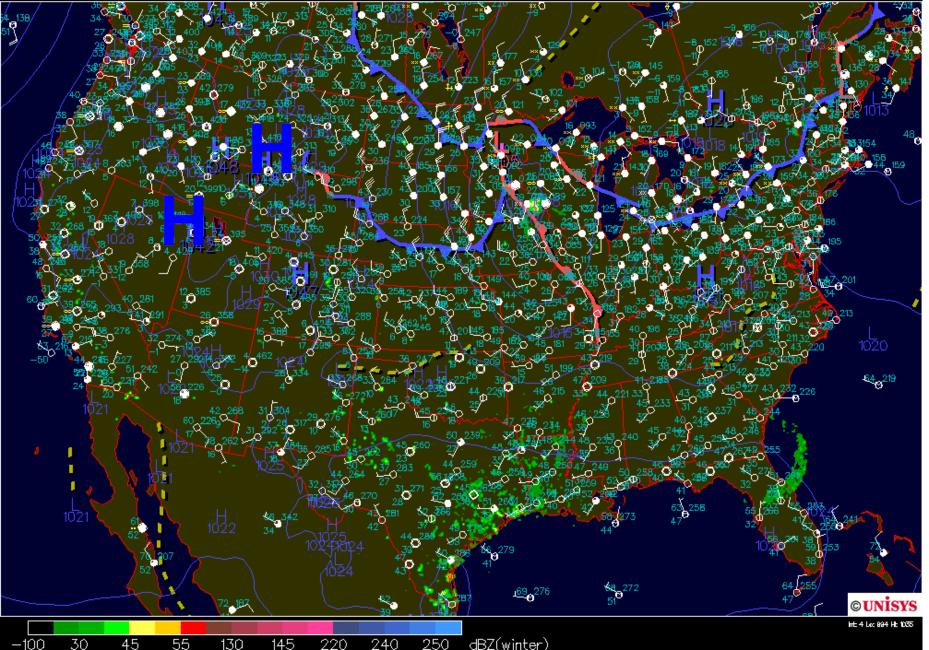
http://www.drroyspencer.com/2017/12/l-a-wildfires-creating-spectacular-smoke-plume/

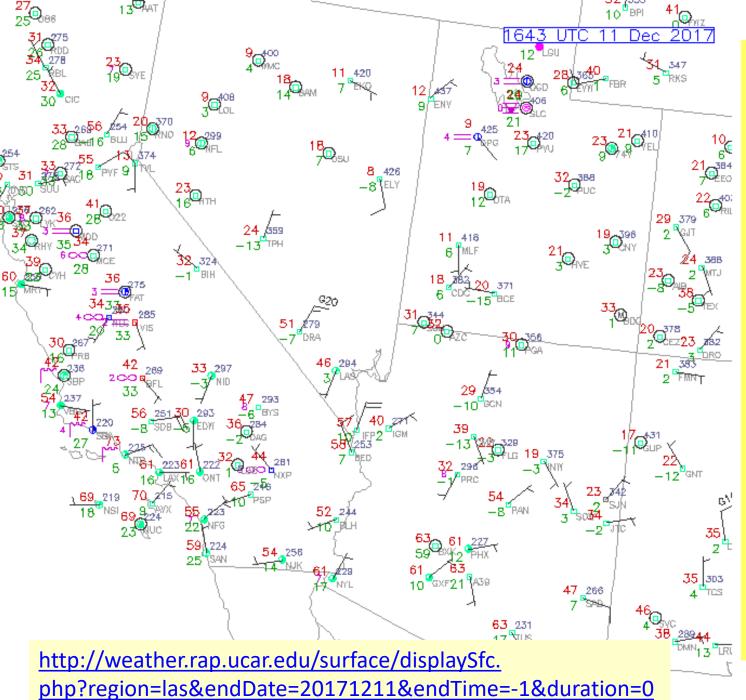


http://weather.unisys.com/surface/sfc_map.gif

Surface Data Plot

1545Z 11 DEC 17





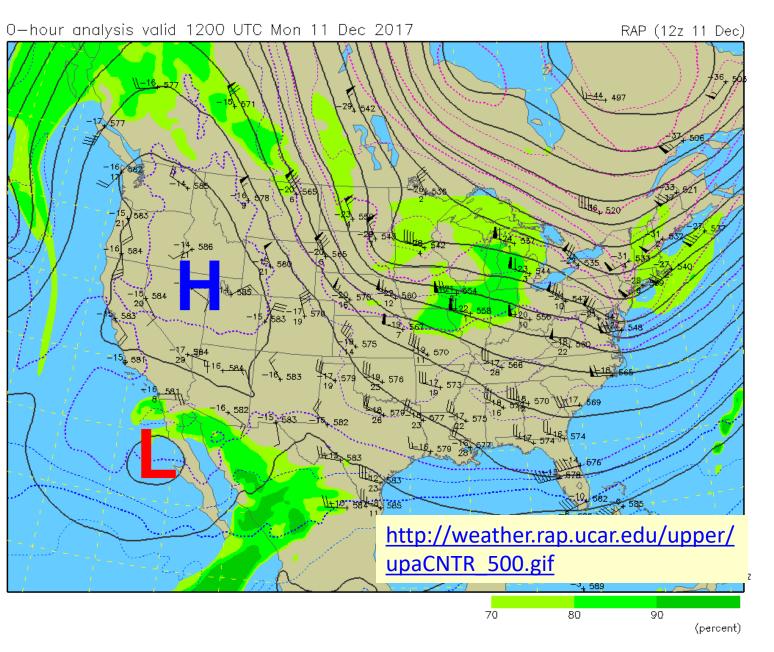
On Monday, 11 December 2017

More evidence of the strong high pressure

Look at the dewpoints!

4 TCS 4 SVC -12 GNT -11 GUP -8 ELY -7 DRA -13 TPH -6 BYS -8 SBD; Winds 080/20! 500 mb rawinsonde data 12z Mon 11 Dec 2017

500 mb Heights (dm) / Temperature (°C) / Humidity (%)



...Fire Regime Development

While the farmer and grazier used fire to clear bush, burn off old grass or reduce the fire hazard on the farm, the development we now refer to as hazard or fuel reduction burning evolved in the twentieth century with the practices of forest managers who were trying to protect native forests from wildfires that damaged the quality of their forests as sources of timber.

The foresters found that protecting the forests by excluding fire...a recipe for catastrophic fires, so they developed a regime for regularly using low intensity fires to reduce the fuel loads in the understorey of the forests.

This practice was started in the 1920s in the jarrah forests of southwest Western Australia as part of a fire protection system⁽¹⁰⁾ where prior to European settlement there was an average interval between fires of 3.4 years.⁽¹¹⁾ Subsequently the use of aerial ignition for fuel reduction burns to create mosaics of burned forests developed in State Forests across the country⁽¹²⁾.

The use of fuel reduction burning regimes is now well embedded as part of fire protection systems throughout Australia.

It is used in forests managed by government authorities such as forestry agencies, conservation bodies, local councils, as well as by private property owners.

Comment

There is no simple answer to the issue of fuel reduction burning because of the diversity of forests, topography and climates in southern Australia as well as the different priorities that different land managers have in developing specific burning regimes.

While the first priority in any fuel reduction program is to protect life and property, it is the other priorities that land managers have, such as biodiversity protection or protection of wood values, that will probably ultimately determine the size and frequency of the program. Therefore it needs to be considered whether or not sufficient priority is being given to strategic burning to protect housing located near the relevant land manager's boundaries.

The Bushfire Inquiry Report did not refer to this specific issue but concentrated on whether fuel reduction burning was being done and at what frequency.

This was a major defect in the report. It is absolutely essential that all land managers (public and private) are obliged to design and implement their fuel reduction programs to protect life and property within and beyond their land boundaries.

http://www.swfireconsortium.org/wp-content/uploads/2017/02/27-What-Are-Fuel-Treatments-final.pdf



What is a Forest Fuel Treatment?

Introduction

Forest fuel treatments are used by managers for ecological restoration and reducing fire hazard. Due to past management decisions and long-term fire exclusion, forests are more dense and are susceptible to severe wildfires. Fuel treatments aim to reduce the intensity and size of wildfires, increase species diversity, and restore forests to their historical condition.

Fuel Treatment Types

There are two common types of treatments:

• Mechanical thinning: cutting and clearing wood and



brush

• Prescribed fire: burning existing fuel before more accumulates

Based on proximity to homes and communities one treatment may be used over the other. Several research studies show a combination of thinning and burning is most effective in promoting forest resilience to wildfire.



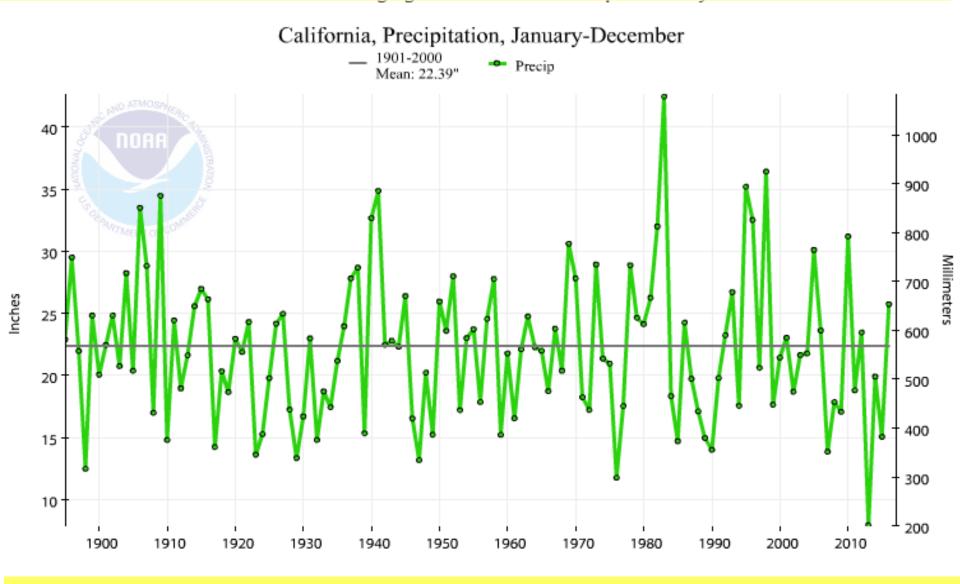
Forest Fuel Treatment Strategies and Advantages

Strategy	Effect	Advantage Easier to control wildfires, trees are less likely to catch on fire			
Prescribed fire to reduce ground fuels	Lowers fire intensity and severity, flames won't grow so tall and reach the canopy				
Increase canopy height by pruning (cutting lower branches)	Fire on ground cannot reach the canopy	Trees are less likely to catch on fire			
Decrease canopy density by thinning	Trees are farther away from each other	Fire cannot as easily spread from tree to tree			
Keep big trees	Fewer trees die in intense fires (bigger trees are heartier)	Restores forest to its historical form			

(Modified from Agee and Skinner 2005)

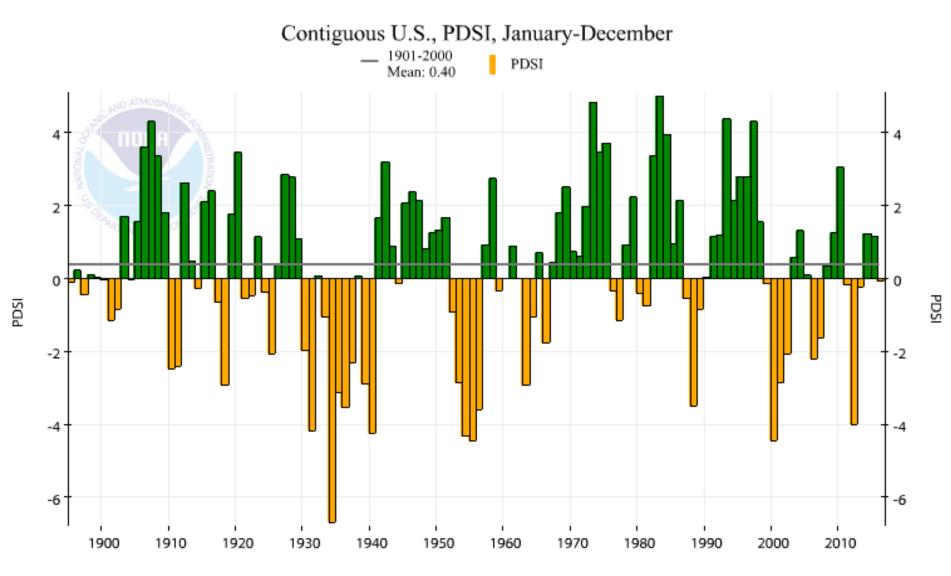
This factsheet and corresponding materials are available online at swfireconsortium.org Factsheet edited from ERI Working Paper 27-Fuel Treatment Longevity (http://nau.edu/ERI/Publications-Media/Working-Papers/)

https://www.ncdc.noaa.gov/cag/time-series/us/4/0/pcp/ytd/12/1895-2017?base__prd=true&firstbaseyear=1901&lastbaseyear=2000



Even though 2017's record heavy rains have not shown up in this plot as of now, rainfall has not changed much in California as the climate has warmed.

https://www.ncdc.noaa.gov/cag/time-series/us/110/0/pdsi/ytd/12/1895-2017?base_prd=true&firstbaseyear=1901&lastbaseyear=2000



The Palmer Drought Severity Index since the late 1800s does not show increasing Drought Severity in the United States as the climate has warmed

https://www.nbcnews.com/storyline/western-wildfires/drought-heat-worsened-humanshelp-fuel-california-fires-n809571

This is an NBC NEWS EDITORIAL from 10 October

Drought and Heat, Worsened by Humans, Help Fuel California Fires by James Rainey

LOS ANGELES — It may take weeks to determine the spark that touched off each of the firestorms that consumed hunks of more than a dozen California communities this weeks

But the consensus in the scientific community is that the conditions that cleared a path for the tsunami of flame were made by humans. Decades of aggressive firefighting left too much fuel on the ground. And more than a century of carbon emissions exacerbated the state's drought and the record high temperatures that baked brush and timber to an explosive dryness.

The damage from the wind-driven flames
 <u>which destroyed thousands of buildings and killed at least 17 people</u> —
is also more grievous because of another man-made initiative: building more and
more homes in hilly communities adjacent to brush and woodlands.

http://www.politifact.com/punditfact/statements/2014/may/01/dana-perino/perino-faults-enviros-mega-fires/



"A lot of the problems with forest fires ... is because of bad policy (not to clear out the forests) that was put in place by environmentalists."

— <u>Dana Perino</u> on Tuesday, April 22nd, 2014 in a broadcast of "The Five" on Fox News



To John Barnwell, director of policy for the Society of American Foresters, a professional education group, the lack of money to prevent fires is primary.

But environmentalists and their actions play a role.

Barnwell chafes at the long environmental review process and frequent litigation over Environmental Impact Statements that beset the Forest Service.

A 2010 analysis from <u>Western Michigan University</u> found that no other agency tops the Forest Service for the number of suits under the National Environmental Policy Act. It averaged about 100 legal challenges each year.

In some well-known cases (think of the Spotted Owl in the Pacific Northwest), logging ground to a halt entirely due to environmental protection rules under the Endangered Species Act. Timber harvests on federal land are a fraction of what they were in late 1970s. http://www.politifact.com/punditfact/statements/2014/may/01/dana-perino/perino-faults-enviros-mega-fires/

Ann Camp, a forestry scientist at the Yale School of Forestry and Environmental Studies, says national environmental groups seem to be intractable to compromise.

"I can tell you from experience that local environmentalists and local chapters of national environmental organizations have been on board for some activities," Camp said

. "But the national chapters nixed their involvement and had already decided to contest the outcome -- whatever it was if it included any level of harvesting."

A little bit of forensics...What about that record heat in San Francisco on 1 September 2017?

San Francisco hits 106 degrees — shatters all-time record

By Steve Rubenstein, Nanette Asimov, and Jenna Lyons Updated 10:48 am, Saturday, September 2, 2017

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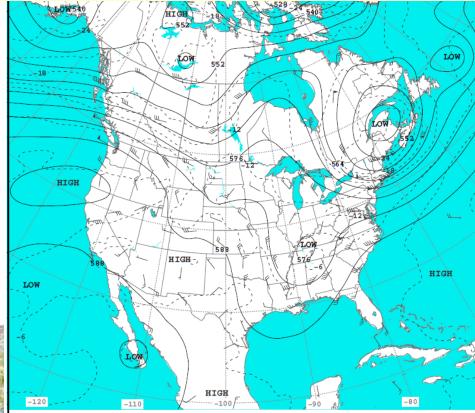
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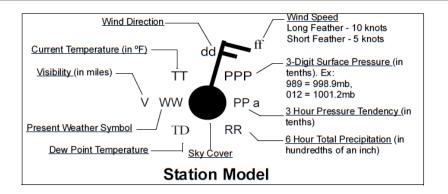
http://www.wpc.ncep.noaa.gov/dailywxmap/pdf/DWM3517.pdf

http://www.sfgate.com/bayarea/article/ Hey-San-Francisco-get-ready-for-the-heat-12166706.php#photo-14036095





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

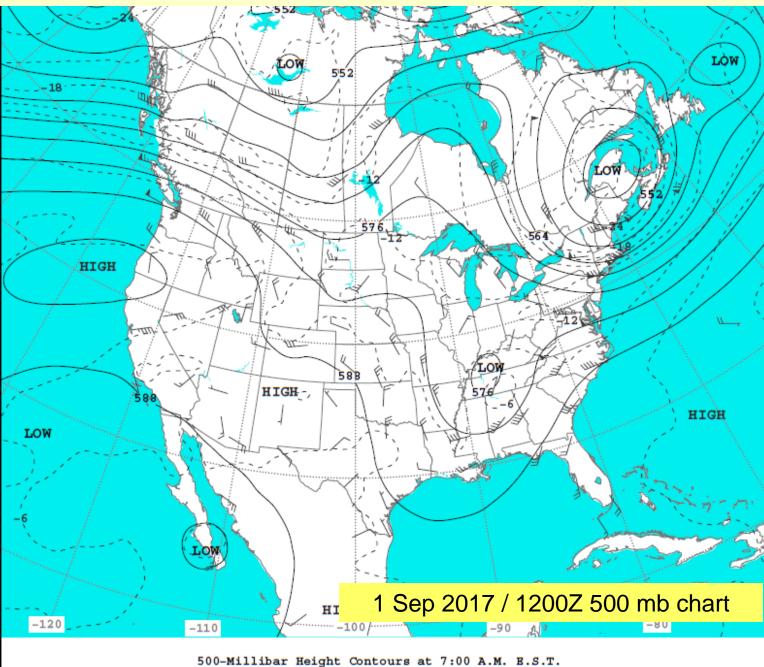


FRIDAY, SEPTEMBER 1, 2017

http://www.wpc.ncep.noaa.gov/dailywxmap/pdf/DWM3517.pdf

First strong Surface High Pressure area of autumn builds Into CA-OR border region

Observe the Diablo winds Set up with Northeasterly Winds at Reno and Oakland



Extreme Fire Danger Through Sunday Sundowner & Santa Ana Winds to Impact Thomas Fire

Red Flag Conditions:

- Santa Barbara County Mountains late Friday night through Saturday evening. Peak north wind gusts 40 mph. Humidity 10-20 percent.
- Ventura and Los Angeles County Valleys/Mountains late Saturday night through Sunday evening. Peak northeast wind gusts 40-55 mph. Humidity 5-15 percent.

Impacts and Actions:

- > Potential for very rapid fire growth, long range spotting, extreme fire behavior
- Caution with potential fire ignition sources
- Heed evacuation orders near active fires
- Poor air quality due to smoke and ash fall

Sherpa Fire

https://en.wikipedia.org/wiki/Sherpa_Fire

The **Sherpa Fire...**a <u>wildfire</u> that burned in the <u>Santa Ynez Mountains</u> along the Gaviota Coast in the southwestern part of <u>Santa Barbara County</u>, <u>California</u> in June, 2016.

In a matter of hours the fire spread to over 1,400 acres (570 ha) as the fire was propelled by downslope <u>sundowner winds</u>.

This offshore northerly wind contrasts with the more typical onshore flow and sent the fire down the canyons towards the ocean with gusts of over 35 miles per hour (56 km/h).

