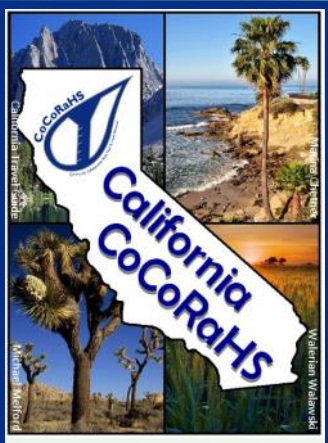

California Cumulonimbus

Fall 2018

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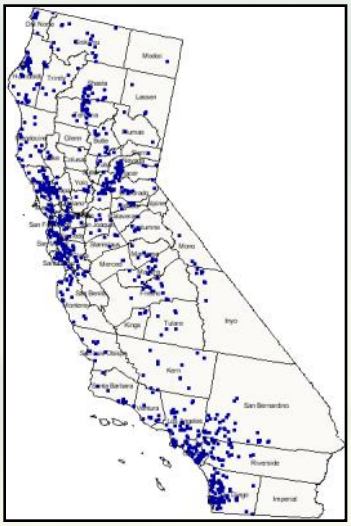
Welcome Message

By Jimmy Taeger



Map of current CA CoCoRaHS observers as of November 1st, 2018. *(Source: CoCoRaHS)*

Leaves are turning and days are shorter which means...it's time for another edition of the *California Cumulonimbus*! The *California Cumulonimbus* is a biannual newsletter for California CoCoRaHS observers that is issued twice a year; once in the spring and once in the fall.

This edition contains articles on a dedicated observer, dangerous debris flows in southern CA, what weather we may expect this winter, a different way to see and use CoCoRaHS reports and the need for mountain observers.

If you're not a CoCoRaHS volunteer yet, it's not too late to join! CoCoRaHS, which stands for Community Collaborative Rain Hail and Snow network is a group of volunteer observers who report precipitation daily. Not only is it fun, but your report gives vital information to organizations and individuals such as the National Weather Service, River Forecast Centers, farmers, and others.

Visit cocorahs.org to sign up, or email Jimmy.Taeger@noaa.gov for additional information.

Enjoy the newsletter!

Observer Spotlight: Paul Lundblad

By Jimmy Taeger

Paul is a longtime resident of Linden, CA, and has been volunteering for CoCoRaHS for just over 10 years. He raised cattle for a number of years before becoming a walnut grower about six years ago.

His appreciation for the weather began in the early 1980's. Paul was a member of the American Weather Observers, and recorded and mailed in weather reports monthly until the organization ceased to exist. Likely because of the long, dry months in California, it made him appreciate rainfall all the more when it did finally start to fall in the fall and he wanted to record it. Plus, it helps to have accurate readings for his farming operation.

Paul's interests, in addition to the weather, are hanging out with his wife, kids and two young grandchildren. He enjoys hiking, camping, sports and is a Giants and 49ers fan. Paul also likes fantasy football and baseball.

Thank you, Paul, for your daily dedication to CoCoRaHS!

Paul next to his rain gauge.

Summer Fires Created Dangerous Debris Flows

By Samantha Connolly

Cranston Fire Debris Flow

Flooding and debris flows are not uncommon in Southern California, especially during monsoon season in the summertime and during the wet winter months. Recent fire burn scars are particularly susceptible to flash flooding and debris flows due to the lack of living vegetation in those areas. This past summer, SoCal experienced a few monsoonal thunderstorm events that resulted in flash flooding and debris flows in and around the recent burn scar areas.

On August 15th, monsoonal moisture advanced into the region, which resulted in numerous thunderstorms and heavy rainfall. Most of the mountainous areas received between 0.5 and 1 inch of rainfall in this event, with a few isolated areas receiving 2-3 inches of rainfall. The Cranston Fire burn scar area in Riverside County was the most recent burn scar at the time – the fire was fully contained only a few days prior to this rainfall event. Riverside County officials evacuated the small communities around the Cranston Fire burn scar and Hurkey Creek the morning of August 15th due to the threat of flash flooding and debris flows. CalTrans reported dozens of debris flows in and around the Cranston Fire burn scar on August 16th (*Figures 1 and 2*).

Figure 1) Debris flow on Aug 16th in Lake Hemet Campground near the Cranston Fire burn scar. ***Source: Riverside County Sheriff***

Figure 2) Debris flow on Aug 16th in Lake Hemet Campground with a sign that reads "proceed with caution". ***Source: Riverside Co. Sheriff***

A few other debris flows occurred in the San Bernardino and San Diego County Mountains during this 3-day heavy precipitation event. Forest Falls, a small community in the San Bernardino Mountains, experienced a debris flow on August 16th. This community is within close proximity to the Valley Fire burn scar. The debris flow forced the closure of the main road in Forest Falls, Valley of the Falls Drive, for several hours. The threat for flash flooding and debris flows will remain high in these fragile burn scar areas during rainfall events for at least another 2 years until fresh vegetation is able to grow back.

Valley Fire Debris Flow

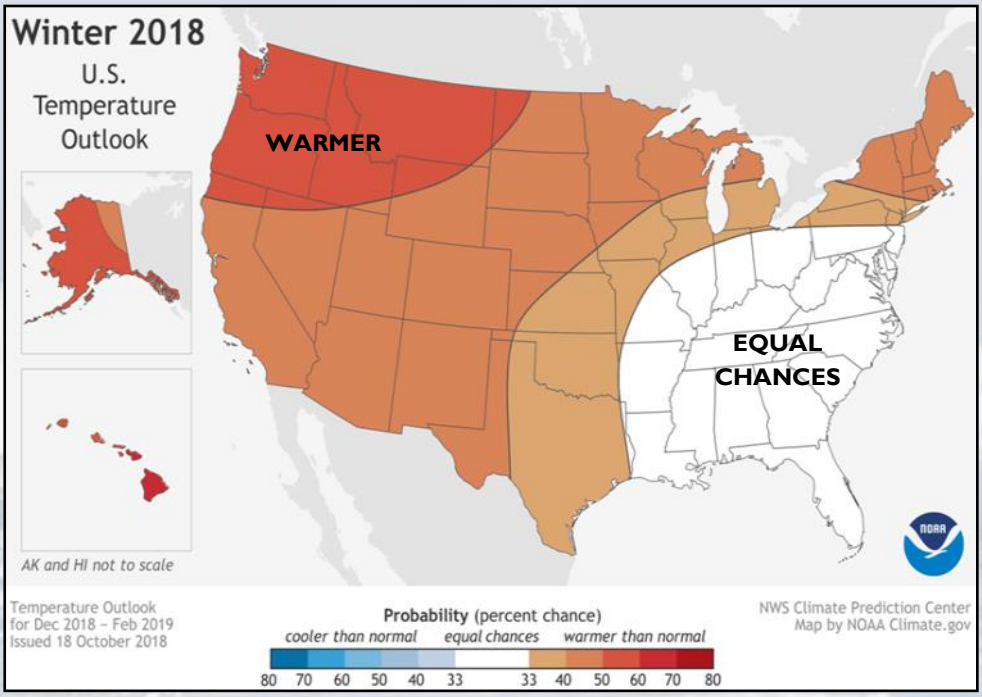
On July 7th, monsoonal moisture moved into Southern California and resulted in numerous showers and thunderstorms across the region. The areas that received the most rainfall that day were the San Bernardino County Mountains and the Inland Empire. Numerous thunderstorms popped up near the Valley Fire, which was still actively burning at the time, and produced heavy precipitation in and around the fire perimeter.

Many areas in the San Bernardino Mountains received 1-2 inches of rainfall. This heavy precipitation resulted in a large debris flow across Highway 38 from the Valley Fire; CalTrans reported the debris flow to be approximately 100 feet wide and 10 feet deep (*Figure 3*). Highway 38 was closed near the Valley Fire for many hours to clean up the large debris flow. No injuries or damages were reported.

Figure 3) Debris flow on Highway 38 near the Valley Fire. ***Source: CalTrans District 9.***

California Winter Climate Outlook

By Casey Oswant



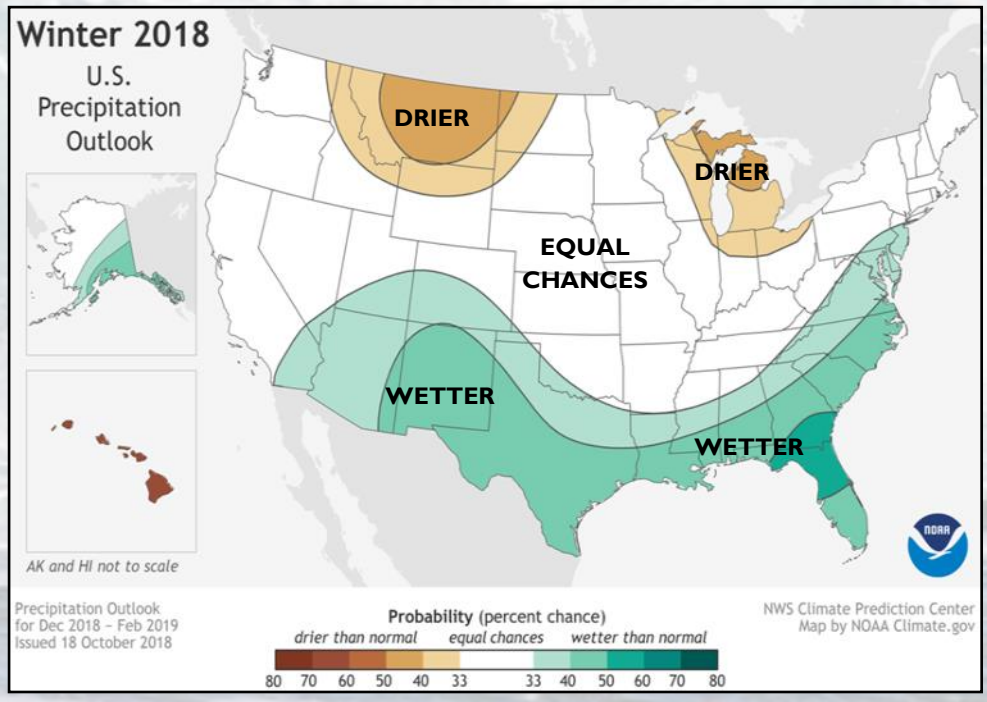


Figure 1) Winter 2018-2019 temperature and precipitation outlook for December through February from the Climate Prediction Center (made 18 Oct 2018). All of California is favored for above normal temperatures and the extreme southeastern half is favored for above normal precipitation through the period. (*Sources: Climate Prediction Center and Climate.gov*)

As temperatures turn cooler and the leaves begin to change colors, it's normal to begin to wonder how "wintery" this winter will feel. To find an answer to this question, one can turn to the Climate Prediction Center (CPC) for a seasonal climate outlook. These outlooks are updated each month and the next update will be available November 15th.

For those of you looking forward to chillier than normal winter temperatures, don't get your hopes up. For December 2018 to February 2019, the CPC predicts that most of California has a 40-45% chance of experiencing above normal temperatures, while extreme northern CA has a 45-50% chance of experiencing above normal temperatures. For February 2019 to March 2019, that 45-50% chance of above normal temperatures spreads farther down the state covering most of it except SoCal.

If you're hoping for a wetter winter season, don't give up hope! The CPC is predicting that most of CA has an equal chance of having either a wet or dry winter season while southeastern CA has a 33% chance of being wetter than normal for the December 2018 to February 2019 timeframe. For the February to March 2019 period the area of increased precipitation chances expands to put all of SoCal under a 33% chance of being wetter than normal. Central and northern CA continue to experience equal chances during that time period. Unfortunately those potentially wet conditions aren't expected to largely help improve drought conditions. It is predicted that the drought will persist through all of SoCal and into parts of central CA. Luckily, a small sliver of northwest CA is predicted to experience drought removal.

As the winter season begins to settle in, get ready for warmer temps and keep hoping for a wetter winter!

An Alternative Way to View Reports

By Jimmy Taeger

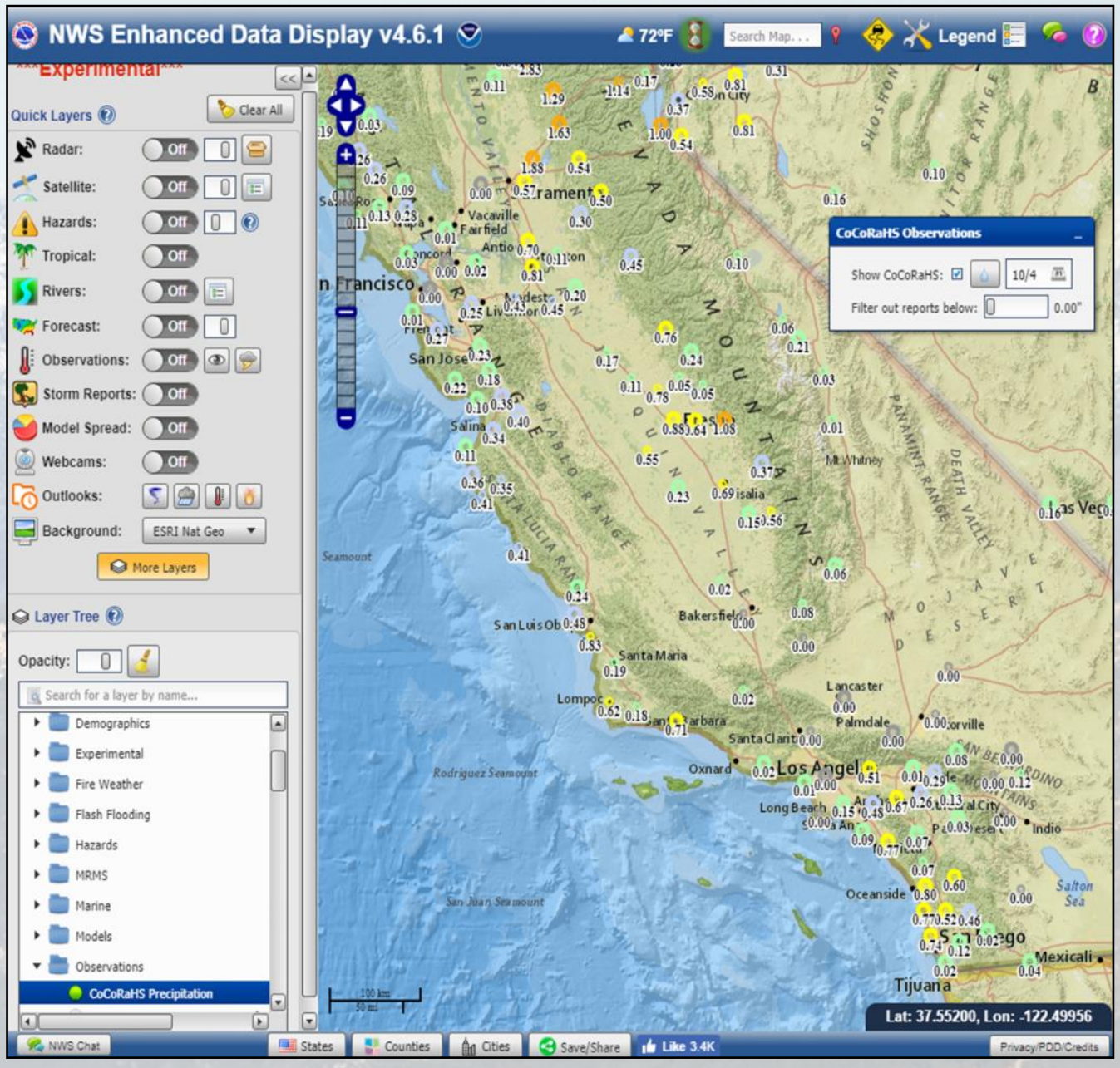


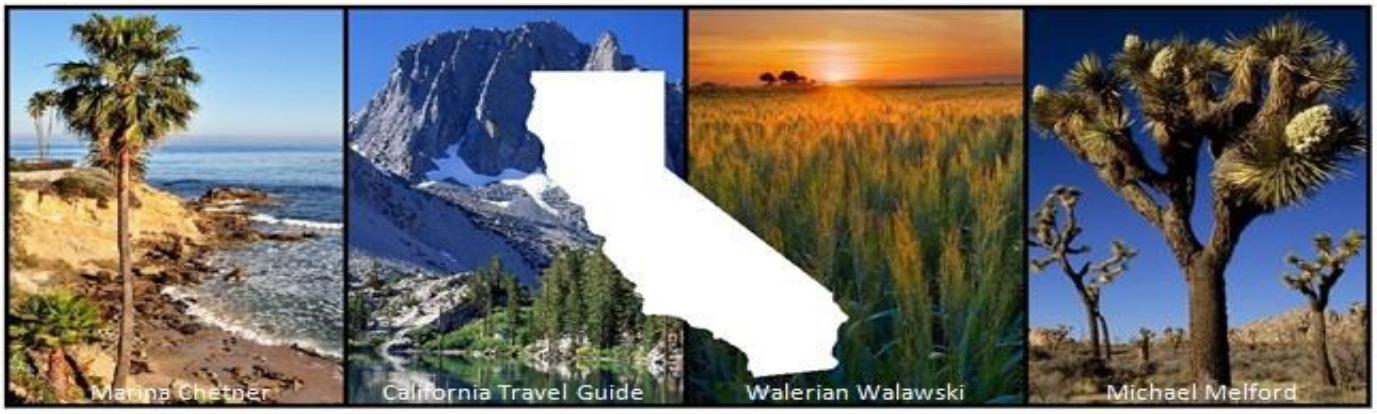
Figure 1) National Weather Service's Enhanced Data Display can plot CoCoRaHS reports, along with several other layers of information. (*Source: National Weather Service*)

The Enhanced Data Display, an experimental interactive map developed by the National Weather Service (NWS), can load several weather elements all at once on one map. A wide variety of layers can be viewed; ranging from webcams, to radar, to satellite to forecasts and more.

One of the many layers which can be plotted include CoCoRaHS observations! To load them, click the "More Layers" button on the left side of the page, type in "CoCoRaHS Precipitation" in the search bar and select the option below. You then get an option to change the date of the observations displayed, and also filter out certain values.

Check out the website when you get the chance! Preview.weather.gov/edd

California CoCoRaHS



California Cumulonimbus

Additional Mountain Observations Needed

By Jimmy Taeger

The amount of CoCoRaHS observations in California have grown over the years, however observations in the mountains remain sparse. The terrain of California plays a large role in affecting how much precipitation falls as storms move across the state. Often times, areas of the mountains receive double or triple the precipitation than areas along the coast. Therefore, mountain observations are very important, and additional observations will help fill in gaps when assessing precipitation across California. If you know of anyone that lives in the mountains and who enjoys observing the weather, please encourage them to sign up for CoCoRaHS. Thank you!

Source: CoCoRaHS)

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What is CoCoRaHS?

CoCoRaHS, which stands for Community Collaborative Rain Hail and Snow Network, is a non-profit group of volunteer precipitation observers. Anyone can join, and it's easy to report the information. All you need is a 4 inch rain gauge, the internet, and a few minutes each day. The website is easy to navigate and has different instructional materials for anyone to learn how to record an observation.

The site also has daily maps of observer's reports showing where precipitation fell the day before. It's fun to compare the different amounts of precipitation that can fall in an area from just one storm. Not only is the information interesting to look at, it is very valuable for organizations such as the National Weather Service, hydrologists, farmers and many others.

Visit cocorahs.org to sign up, or e-mail Jimmy.Taeger@noaa.gov for questions. Join CoCoRaHS, today!

Rain gauge required for the program.

cocorahs.org | California CoCoRaHS State Webpage | California CoCoRaHS | weather.gov