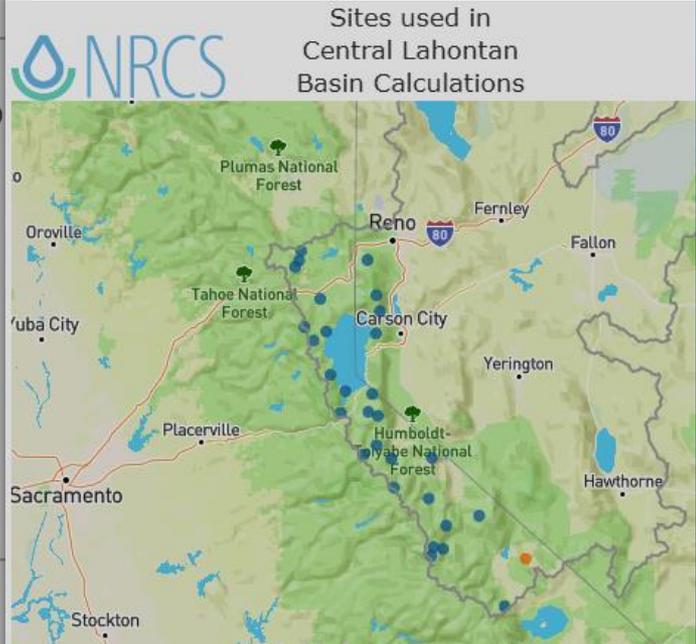
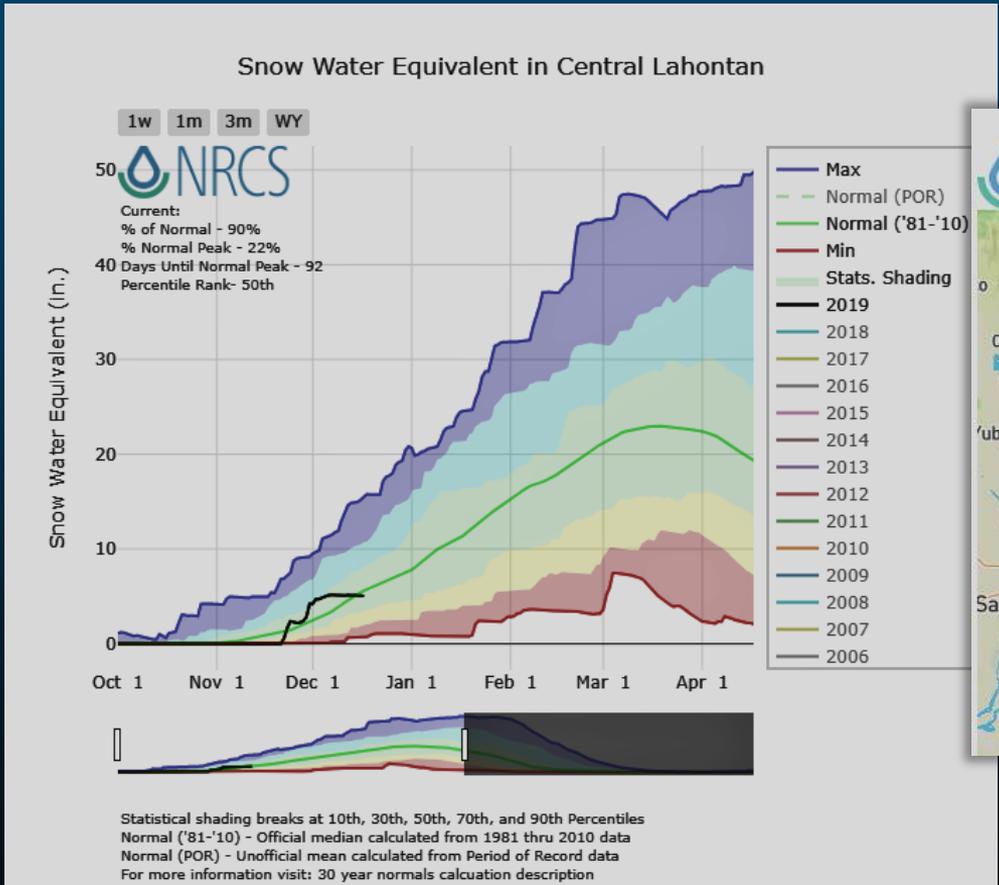


# Winter 2018-19: Will it be “Tremendously Big and Tremendously Wet”?

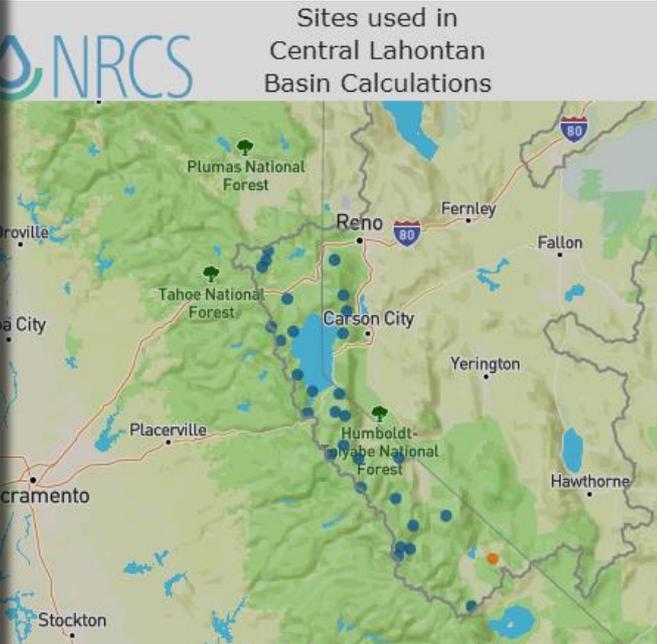
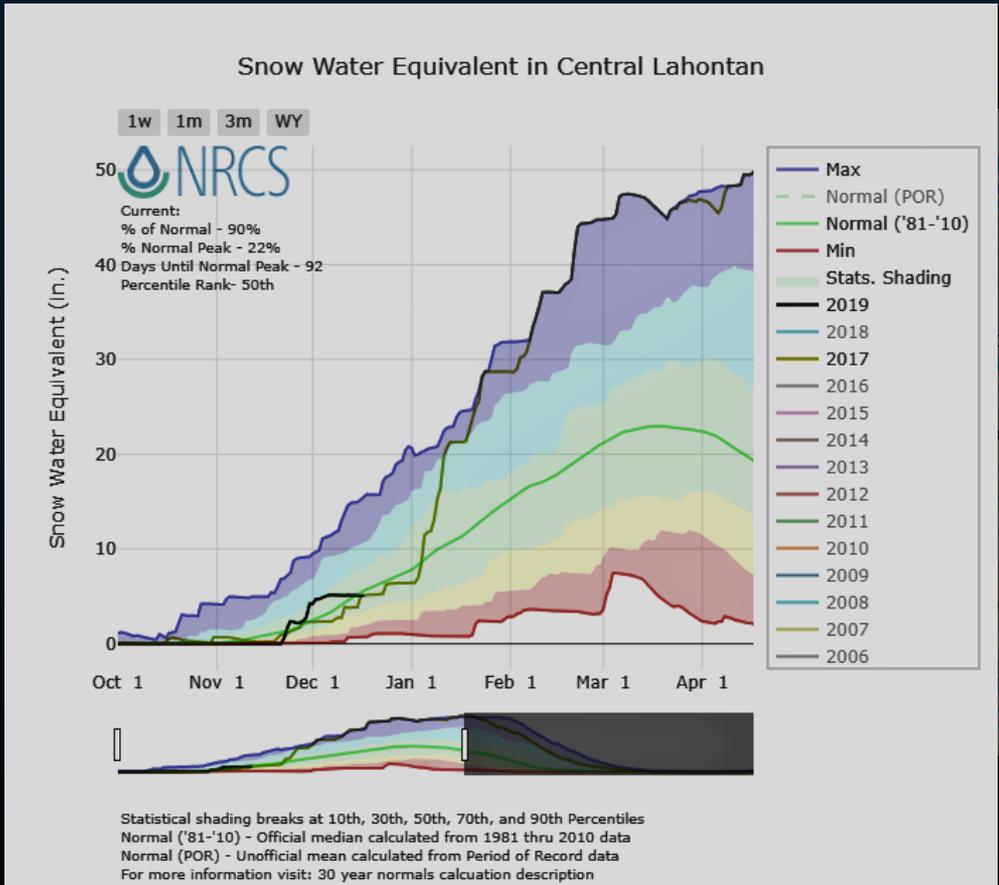
*Chris Smallcomb*  
*Meteorologist (PIO) – NWS Reno*  
*[chris.smallcomb@noaa.gov](mailto:chris.smallcomb@noaa.gov)*



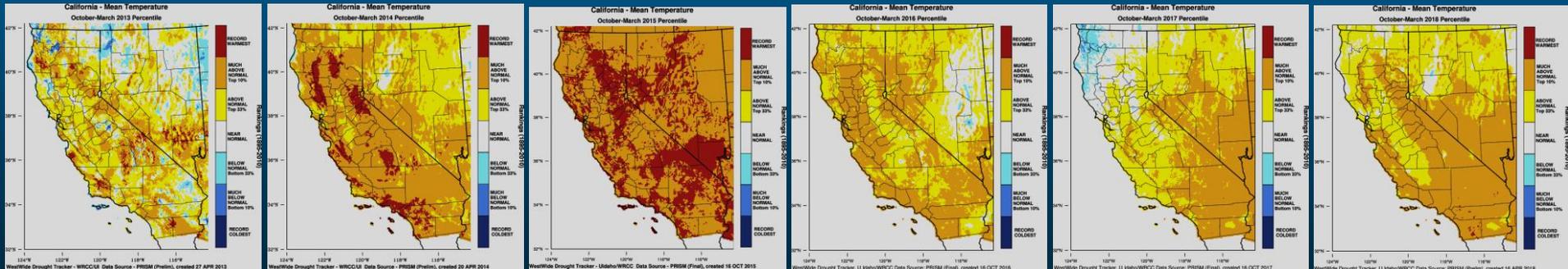
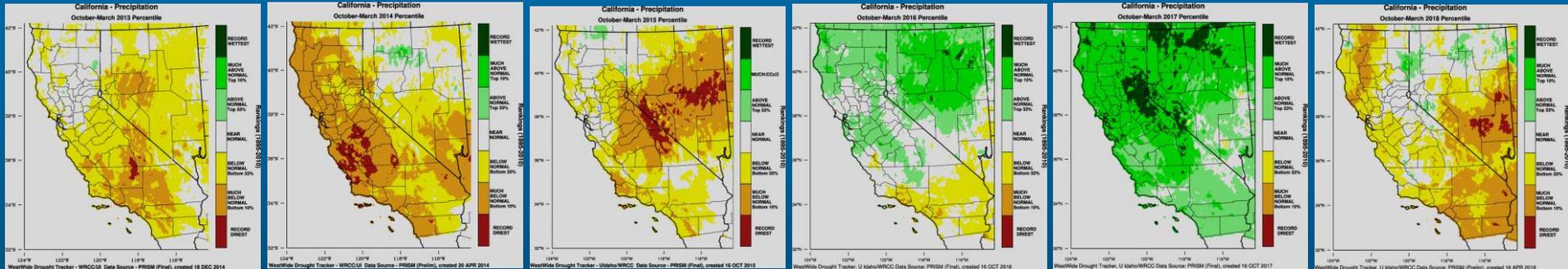
# How's the Winter Snowpack Starting Off?



# Compared to Water Years 2018 and 2017??



# Recent Winters variable Water, Consistently Warm!



2012-13

2013-14

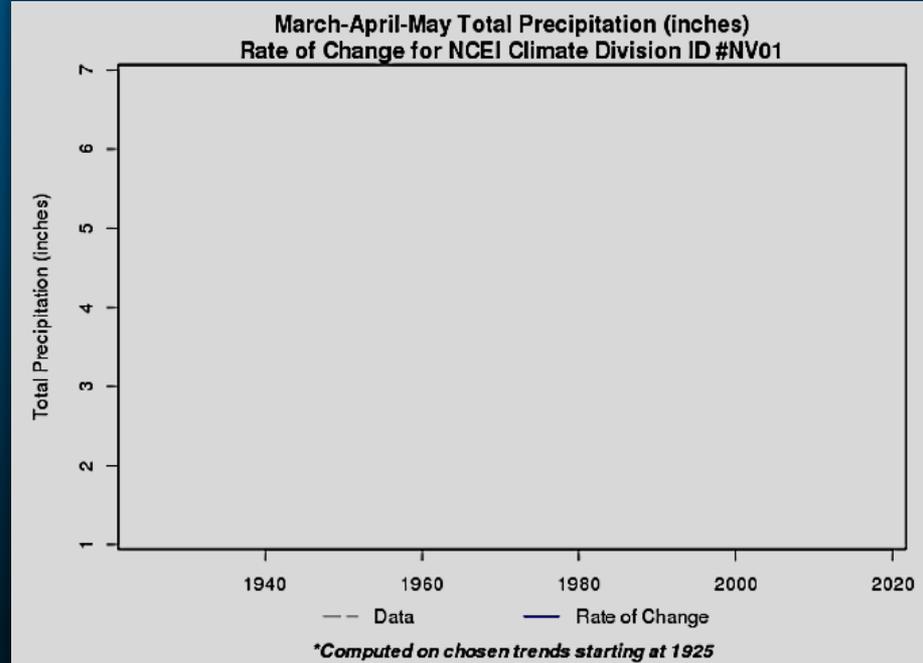
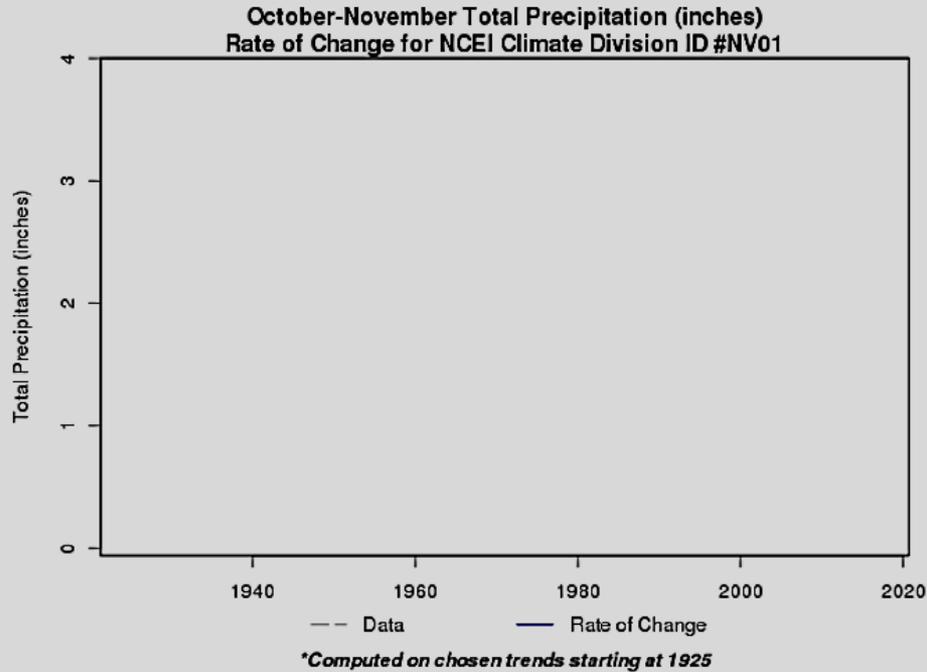
2014-15

2015-16

2016-17

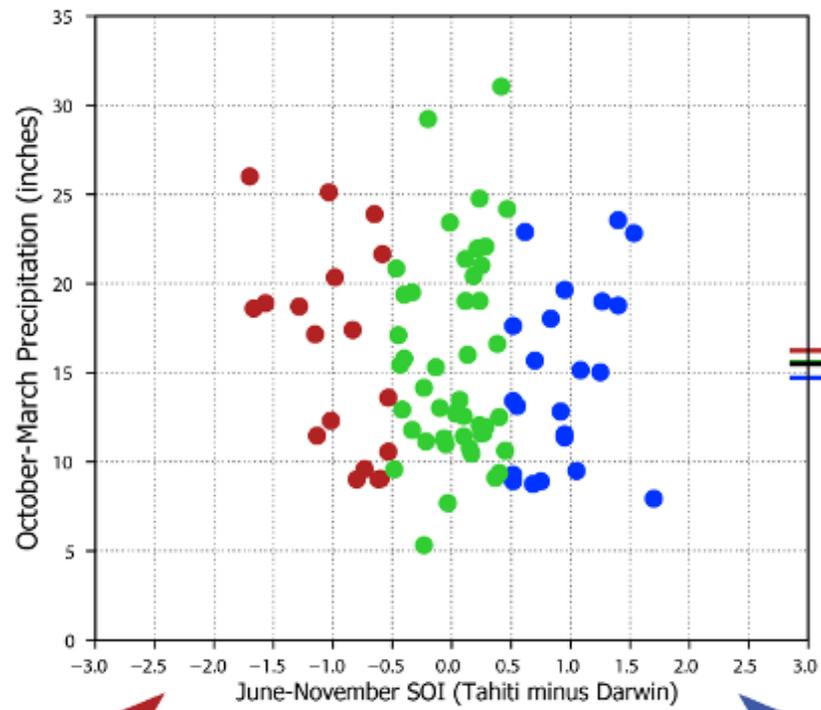
2017-18

# Are Western Nevada Falls Getting Drier, and Springs Trending Wetter?



# El Niño Everyone's Favorite Winter Topic

**CA Division 3 October-March Precipitation**  
(versus Southern Oscillation Index for prior year June-November)



Years 1933/1934 - 2017/2018  
 $r^2 = 0.01$   
 Correlation = -0.09

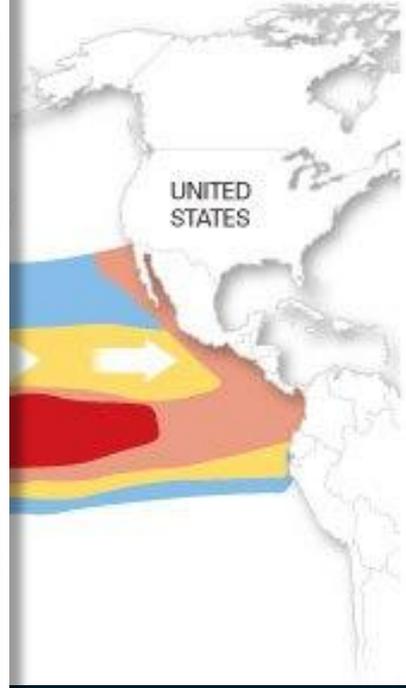
Mean = 16.24 in  
 Mean = 15.59 in  
 Mean all = 15.50 in  
 Mean = 14.71 in



Western Regional Climate Center



NOAA Climate.gov  
 Data: ESRL/NCEI



# Hazard Focus Off-Season Wildfire

## WORRY SOME SCENARIO

**Prepare Now!** WILDFIRE KNOWS NO SEASON **FALL**   
 LivingWithFire.info Caughlin Ranch Fire November 2011

One week before Thanksgiving around midnight...



- 1) 70+ MPH wind gusts
- 2) Humidity below 20%
- 3) Delayed start to winter storms and/or prolonged dry period

**Prepare Now!** WILDFIRE KNOWS NO SEASON **WINTER**   
 LivingWithFire.info Round Fire February 2015

Just a week before Valentine's Day...



Photos: Inyo County Sheriff, looking for the Sierra and working for the Sierra Nevada since 1905

Rend National Weather Service  

# Hazard Focus Post-Wildfire Debris Flow & Flash Flooding



## WORRY SOME SCENARIOS

- 1) **RAPID:** Thunderstorms or cold frontal rain band with 15 minutes of intense rainfall.  $\frac{1}{4}$ " in 15 minutes is enough to trigger **debris flows**.
- 2) **GRADUAL:** Atmospheric river with 6-12 hours of moderate rain slowly saturating soils to point where they give way in **flash flooding**.

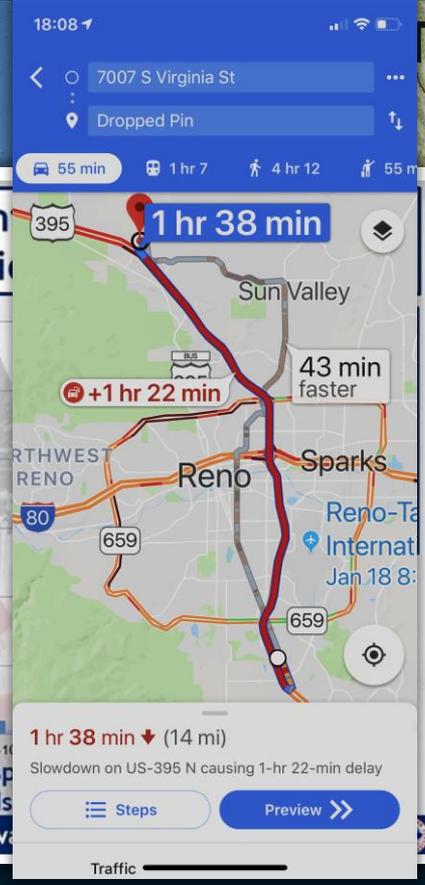
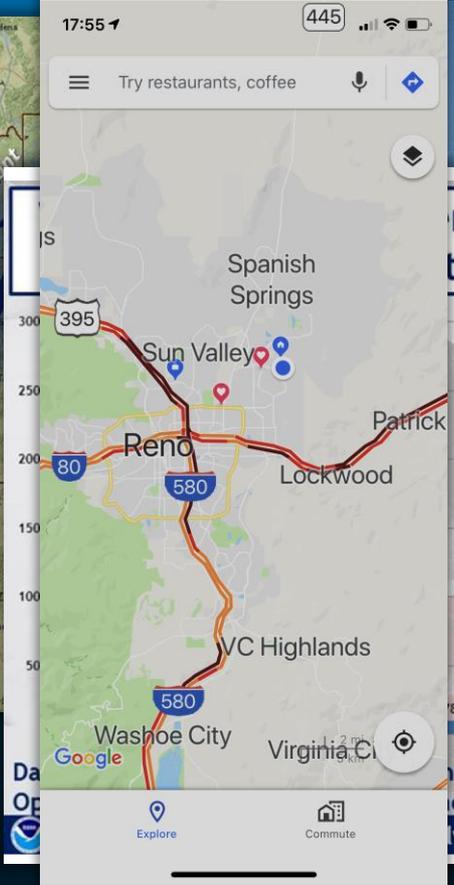


Map created: Mon October 22, 2018 10:26 AM PDT

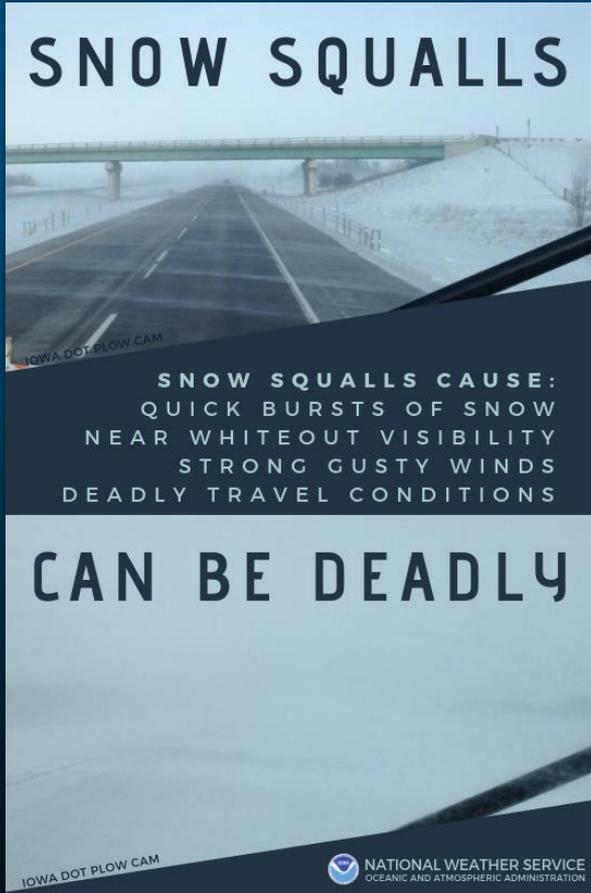
Reno National Weather Service  
Forecasting for the Sierra and western Nevada since 1905



# Least Predictable Snow Hazards



# NEW – Snow Squall Warning



**SNOW SQUALLS**

SNOW SQUALLS CAUSE:  
QUICK BURSTS OF SNOW  
NEAR WHITEOUT VISIBILITY  
STRONG GUSTY WINDS  
DEADLY TRAVEL CONDITIONS

**CAN BE DEADLY**

IOWA DOT PLOW CAM

NATIONAL WEATHER SERVICE  
OCEANIC AND ATMOSPHERIC ADMINISTRATION



**WHAT IS A  
SNOW SQUALL  
WARNING?**

Issued when a snow squall occurring  
or happening in near future

Small, targeted area

Typically in effect for 30-60 minutes

Similar to tornado or severe  
thunderstorm warnings

NATIONAL WEATHER SERVICE  
WWW.WEATHER.GOV/WINTER

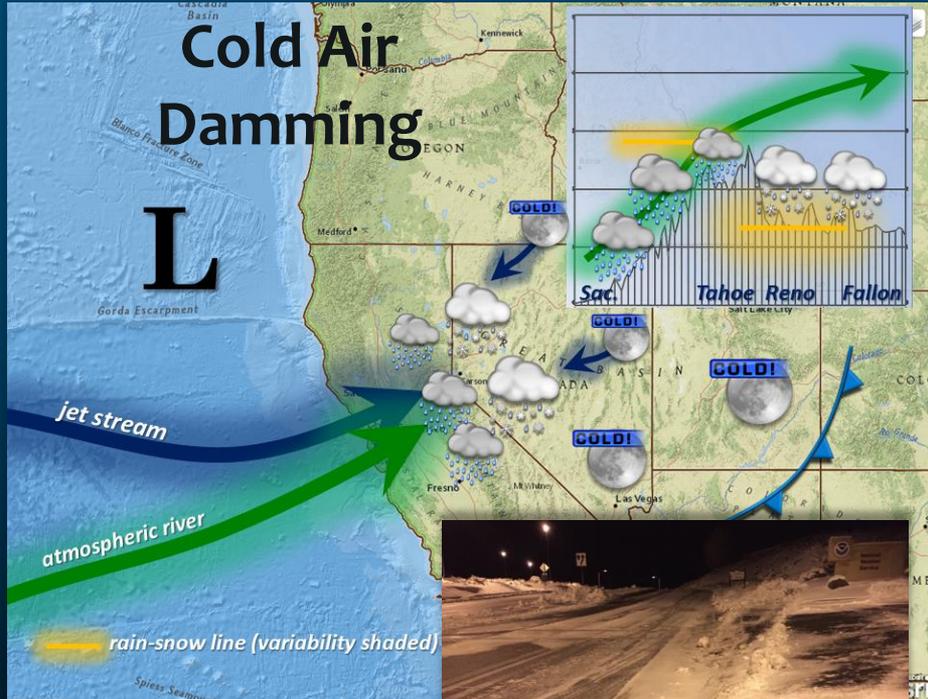
## Sierra + Western Nevada Notes

- 1) Most likely scenarios to be used: **heavy lake effect snow**  
OR **fast moving inside slider**  
OR **Donner Pass squalls.**
- 2) We'll focus on highest impact scenarios such holiday travel periods and commutes.
- 3) Will alarm NOAA Weather Radio between 5 AM and 9 PM. Uses SQW SAME Code but not an official EAS warning.
- 4) Available on cell phone alerts (WEA) after this winter. Starting May 2019.

# Least Predictable Snow Hazards



**Lake Effect**



# Public Messaging for Snow?

 **Washoe Sheriff** @WashoeSheriff

Multiple vehicles no Rd. above Dog Vall alternative, do not t #nvflood17



RETWEETS 94 LIKES 64

8:51 AM - 9 Jan 2017

 **Lawrence Police** @LawrenceKS\_PD

This is the law enforcement center downtown. That building you can barely see is the courthouse 250 feet away. Visibility is poor, road conditions are poor, and your decision making is poor if you're able to stay on your couch and you don't.



 **Cleveland Police** @CLEpolice

NASA sent a space ship from Earth THREE HUNDRED MILLION MILES to Mars and landed it perfectly. You guys can drive in the snow. #SlowDown #CLE #weather 🌨️❄️

11/26/18, 16:49

1,477 Retweets 3,797 Likes



# Ask a Meteorologist (Almost) Anything

*Chris Smallcomb*

*Meteorologist (PIO) – NWS Reno*

*[chris.smallcomb@noaa.gov](mailto:chris.smallcomb@noaa.gov)*

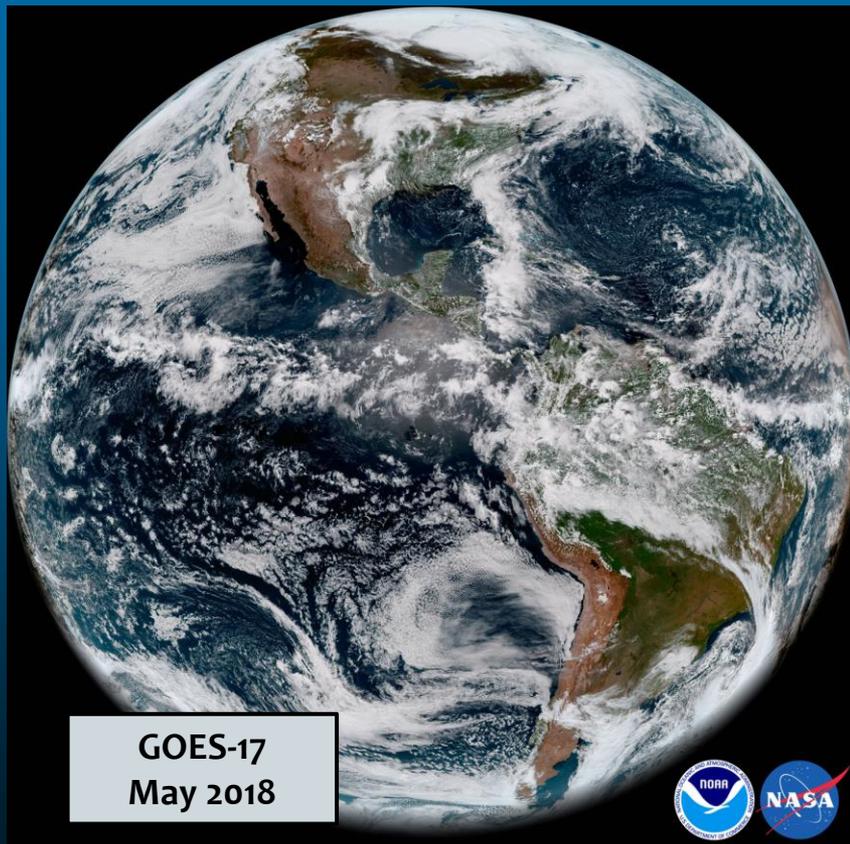


# Shiny New Satellite – GOES 17



GOES-1  
October 1975

GOES-1 DPT 298 1645Z 25 OCT. 75



GOES-17  
May 2018



Reno National Weather Service  
Forecasting for the Sierra and western Nevada since 1905



# GOES 17 – Who Cares!?

## High Resolution, Rapid Scans

Wildland fire detection, dust storms, t-storm formation

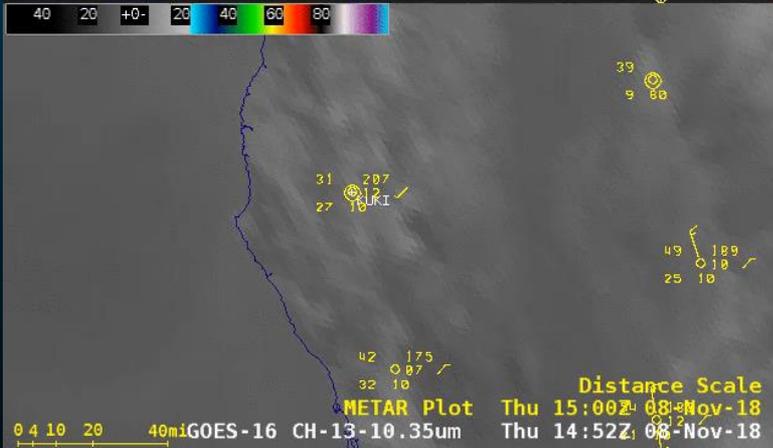
## Lightning Detection

In-cloud lightning = lead time on severe storms in poor radar areas

## Improved Global Forecast Simulations

9-10x more data vs older GOES – 1TB/day – 16 channels

# GOES – Wildfire Detection Camp Fire – Nov 2018



irville-Axis-19 X:+126.30 Y:+0.01 Z:1.4 © Nevada Seismo Lab 2018/11/08 07:26:53.84 North Fork irville-Axis-19 X:+126.30 Y:+0.01 Z:1.4 © Nevada Seismo Lab 2018/11/08 07:37:38.48 North Fork



# GOES 17 – Fog & Low Clouds

