

## South Carolina: State-Wide Flood Catastrophe, Billions in Losses

South Carolina is known as the Palmetto State, but the month of October suggests the name should temporarily be changed to the Pontoon State. Widespread and severe flooding was an indirect effect of Hurricane Joaquin and brought all-time record rainfall and flooding in many areas, including Columbia and Charleston. The mayor of Columbia states there are “billions” in damage in that area alone.

These buildings are just a few of thousands flooded across the state:



*Flooded business district in Columbia, S.C. / Getty Images*



*Five-foot-deep water in Columbia offers up a no-brainer: a total vehicle loss.*



*Record floods in Columbia, S.C. pushed water more than 6 feet deep into this apartment complex.*

In Columbia, the 2-day event produced 10.28 inches of rain, the highest 48-hour total ever. Numerous small dams burst or overflowed from the October 3-4 floods.

Even more remarkable rainfall totals were measured farther south: Mount Pleasant, just northeast of downtown Charleston, racked up more than two FEET of rain in three days. Charleston usually gets about 51 inches of rain in a whole year.

At least 17 people died in various weather-related incidents: 15 in South Carolina and two in North Carolina.

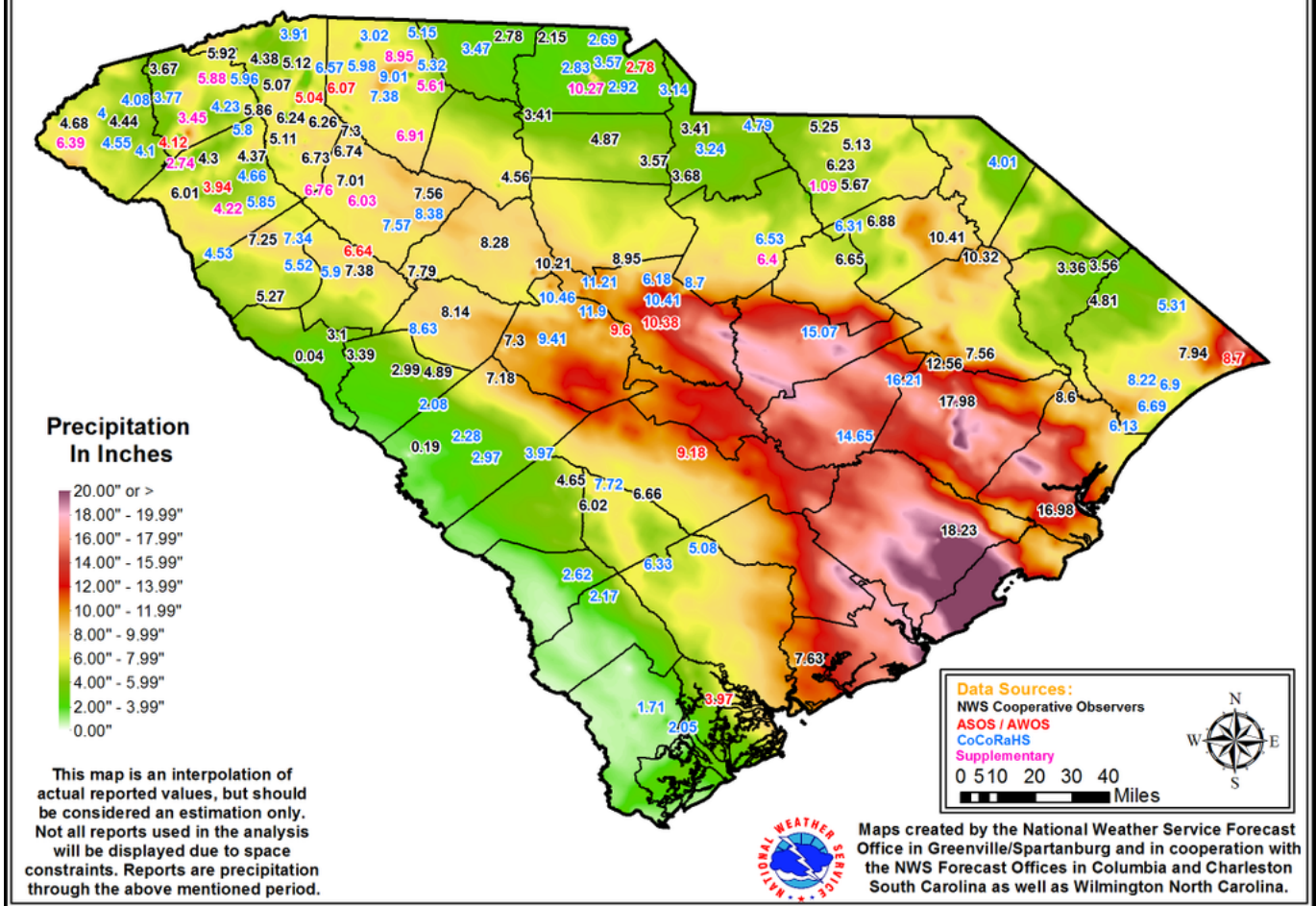
The epic rains began as an upper trough over the southeastern U.S. tapped into outflow moisture from “Joaquin”, which was over the Bahamas as a Category 4 hurricane, the strongest of the season. While the hurricane remained at sea, it’s “moisture train” ran over South Carolina with damage that may top \$10 billion (estimate released October 17).

Damage to highways and roads has been severe-70 miles of I-95 were closed for days due to washouts and floodwaters. Eighteen bridges required repair along the route; the crucial highway did re-open about a week later. Travelers had to deal with a 100-mile detour during the Interstate’s down time.

Crop damage alone has been estimated at more than \$300 million.



## South Carolina Precipitation 96 Hours Ending 7AM October 4th, 2015



It is unknown at press time how much of the loss is insured.

## Southern California Mud-pocalypse

A "freaky" intense rain hit southern California on October 15 sending massive mudflows onto highways, piling cars upon one another in a scene you might expect to find in a disaster movie. *Hundreds* of vehicles were trapped in mud up to 20 feet deep; in some cases, motorists were stranded overnight.

"It was terrifying," 51-year-old Rhonda Flores of Bakersfield told The Associated Press. "It was a raging river of mud. I've never experienced anything like it, ever."

Ladders and tarps were used as bridges to span mud up to 6 feet deep and help hundreds of trapped people from cars that got caught in the surging river of mud along State Route 58 (about 30 miles east of Bakersfield) a major trucking route, California Highway Patrol officials said.

Interstate 5 reopened a day after another mega-mudslide pushed up to five feet of mud across that busy highway on the same day, trapping cars and forcing crews to close the highway in both directions for nearly 40 miles.



*Southern California travel paralyzed by a sea of mud / Robert Rocha / AP*

A weather station near Lancaster, California, tallied 2.99 inches of rain in just 30 minutes on Oct 15. That's a rare total for California and a recipe for erosive mudflows after years of drought with barren hillsides.

According to the NWS office in Los Angeles, this was a 1000-yr rainfall event, meaning only one chance in a thousand it will happen in any given year.

"It's absolutely incredible," said Robbie Munroe, a meteorologist with the National Weather Service in Oxnard.





Reporters look at vehicles stuck on a road after being trapped by a mudslide on California Highway 58 in Mojave on Saturday.

Mark Ralston /AFP/Getty Images



Image from KTLA-TV coverage of the mud-pocalypse.

## Lone Star Floods: Texas Soaked Again

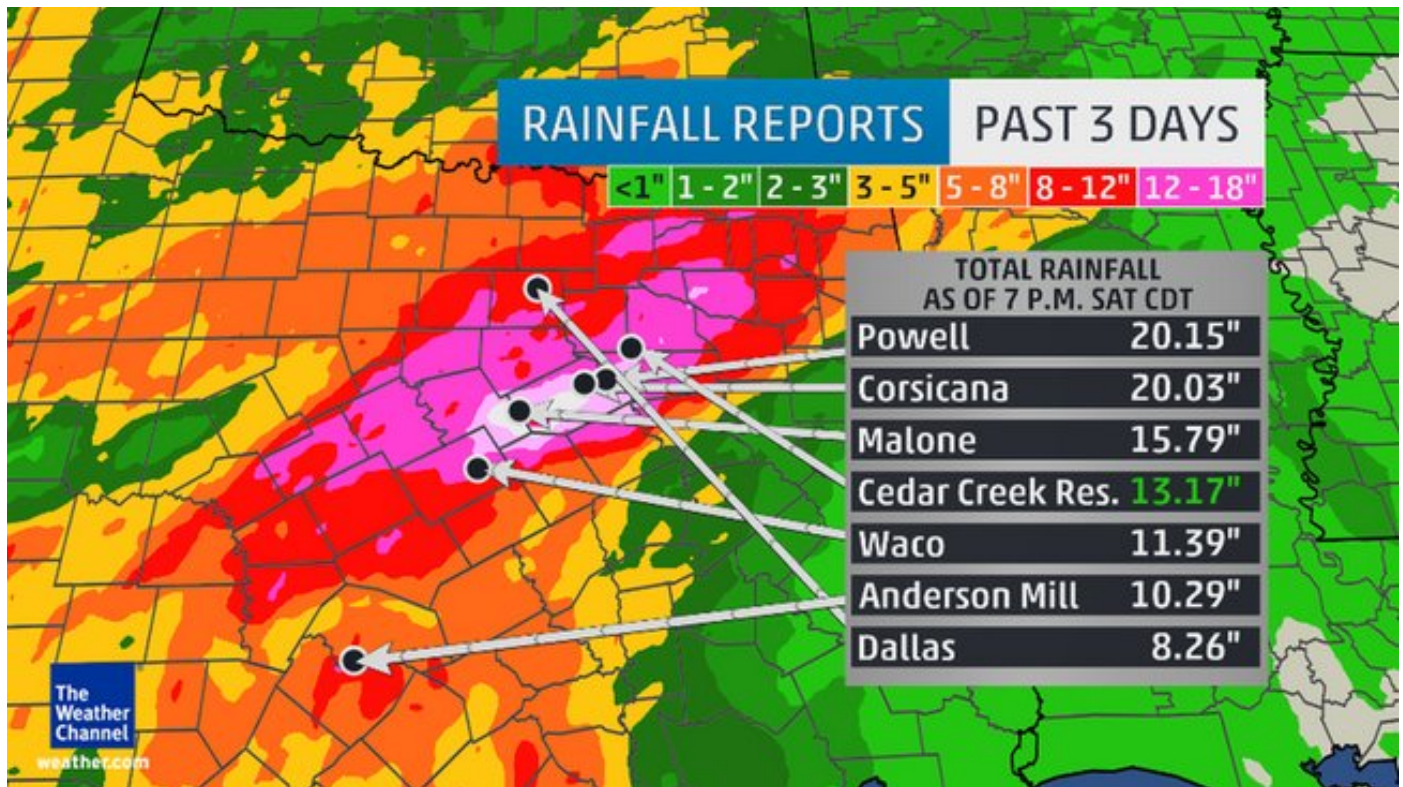
Texas endured flooding for the second time in just four months when a slow-moving upper level system intersected a fierce surge of moisture from the Gulf Oct 22 through 24. The Dallas-Fort Worth Metroplex experienced widespread 5 to 8 inch rainfall with lots of flooding, but mainly of roadways and creeks. Building damage was minimal. Further south, Corsicana racked up 20 inches of rain in just 30 hours; here the force of the water derailed a freight train and flooded scores of buildings.



*This train, carrying cement, was pushed off of the tracks by record floods in Corsicana, TX / NBC News*

Houston also found itself dealing with floods when as much as 10 inches of rain pummeled the “Energy Capital” in just 24 hours.





*North and Central Texas Rainfall Oct 22-24/ The Weather Channel*

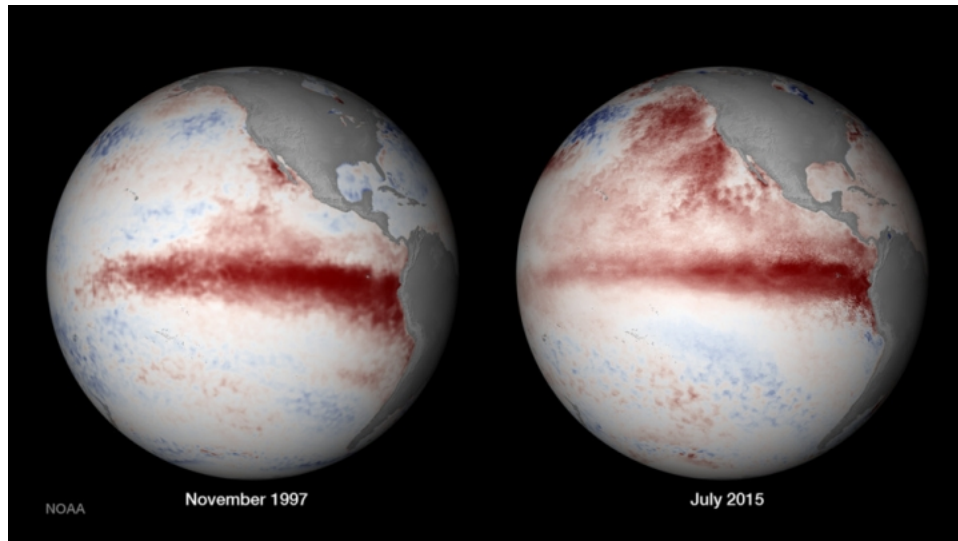
## World Record Hurricane: Patricia

The waters of the eastern Pacific are running 5 to 7 degrees warmer than average because of 2015's strong El Nino, and this played a role in brewing up Hurricane Patricia, the most intense tropical cyclone in world history. It was by no means the largest, but it generated the highest sustained tropical cyclone wind speed on record: 201 mph. Patricia's central pressure also fell to 880 mb, one of the top five lowest ever measured in a hurricane (at sea level).

Luckily, the area of extreme wind in Patricia was very compact, just 15 miles across; the storm missed larger cities and made landfall on a relatively isolated stretch of Mexican coastline on October 23. Moisture from this hurricane helped give Houston the 10 inches of rain, but hurricane winds were long gone before the remnants reached Texas. Overall, Texas floods were much less severe than those seen in May.

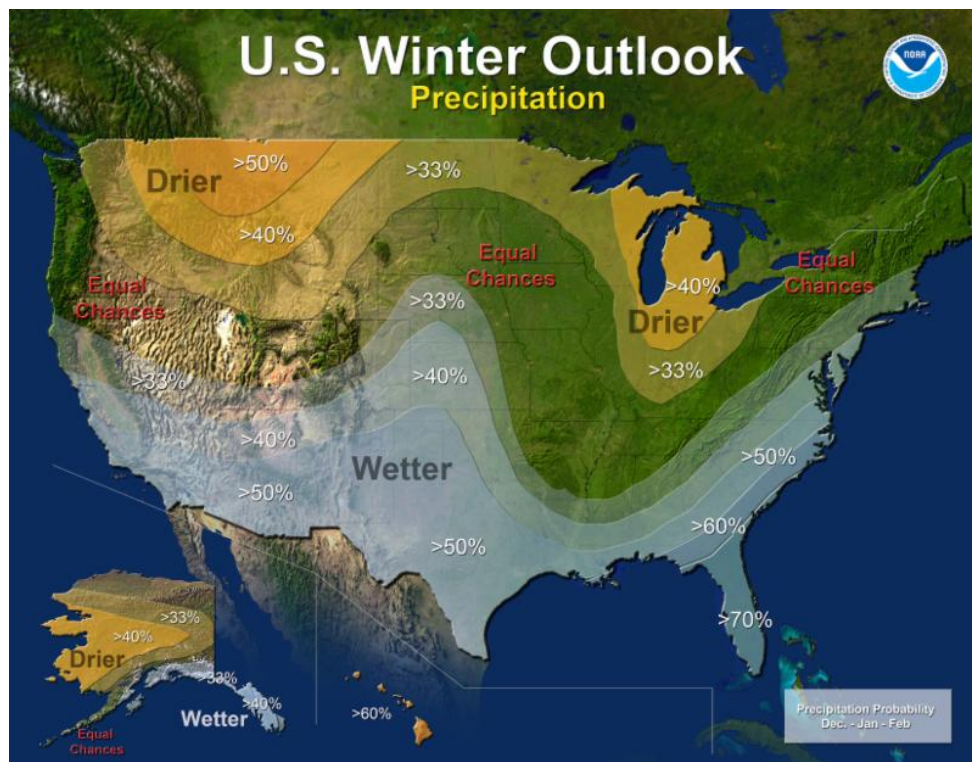
## Speaking of El Nino....

This one is running wide-open, already one of the top few strongest on record and destined to make for a stormy winter across the western and southern U.S. Below is a comparison of the 1997 El Nino and this year's. The red areas show warmer-than-normal sea temperatures. Note they're very similar:

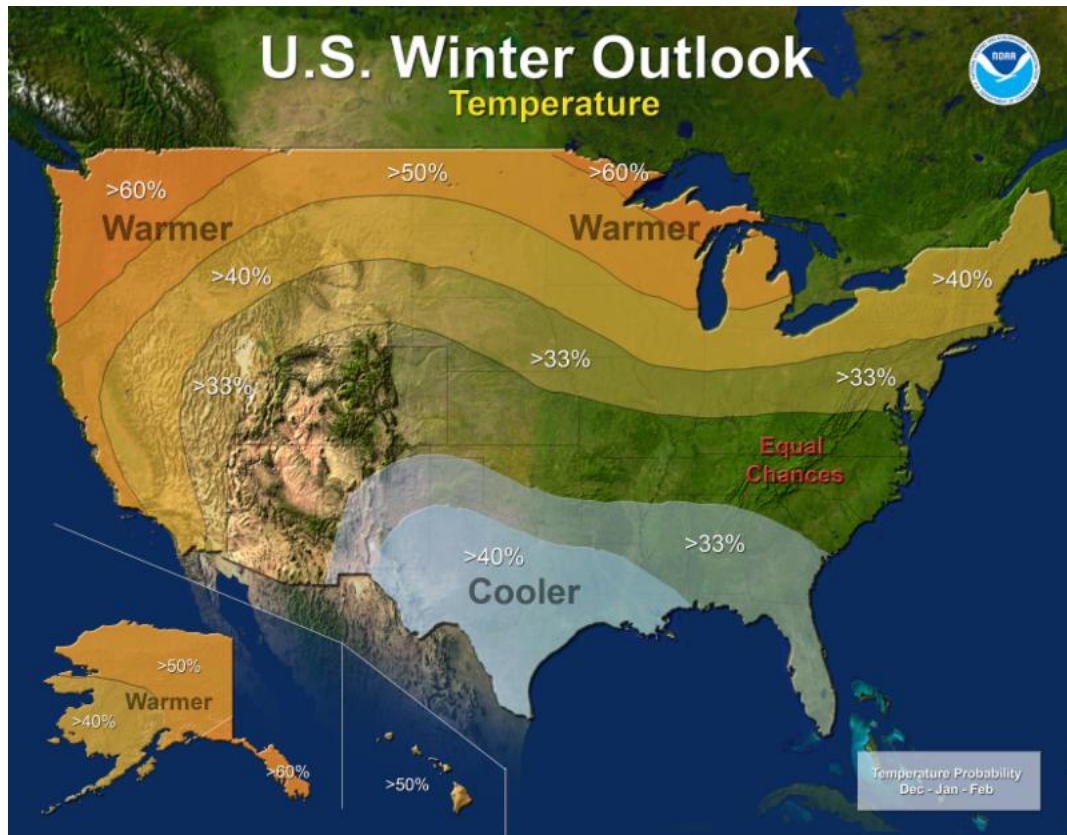


So far the 2015 Nino is just a bit less intense than '97, but it's still gathering strength. Expected impacts, as shared for the past few months, have not changed: Floods from California to Texas and severe weather over the Deep South. If enough cold air gets southward we could also see major southern snow or ice storms as we did in 2009's moderate El Nino.

Here are the latest NOAA Outlooks, essentially no change from last month:







This outlook is bad news for western Canada ski resorts and those in the northeast U.S., and for the parched Pacific NW forests; it's a good thing for California in the sense of filling drought-depleted reservoirs and restoring soil moisture. However as we saw with the mud-pocalypse, very heavy rainfall sometimes makes more problems than it solves. California is ripe for disaster with fire-ravaged areas offering no erosion control from heavy rainfall.

2015 has seen several expensive disasters:

The Jan-Feb Boston snow-blitz which cost about \$1 billion

Several major tornadoes from Texas to Illinois which collectively did about \$500 million in damage

The Washington State, Oregon and California fires which racked up another \$1 billion,

Top honors: the South Carolina floods which may hit \$10 billion.

Floods are the most likely threat through early spring in the U.S., but a significant secondary issue will be the potential for tornadoes and severe storms thanks to El Nino moisture and wind shear. It could make for some busy times!

Take Care,

*Steve LaNore, CBM*

Author, "Twister Tales" and "Weather Wits and Science Snickers"

Both available on Amazon: great Christmas gifts!