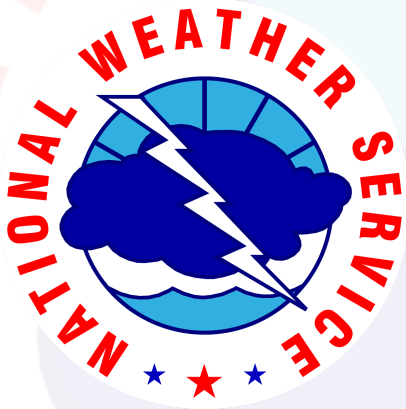


# SPOTTER NEWSLETTER

NWS PHOENIX SKYWARN NEWSLETTER

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SEPTEMBER 2024



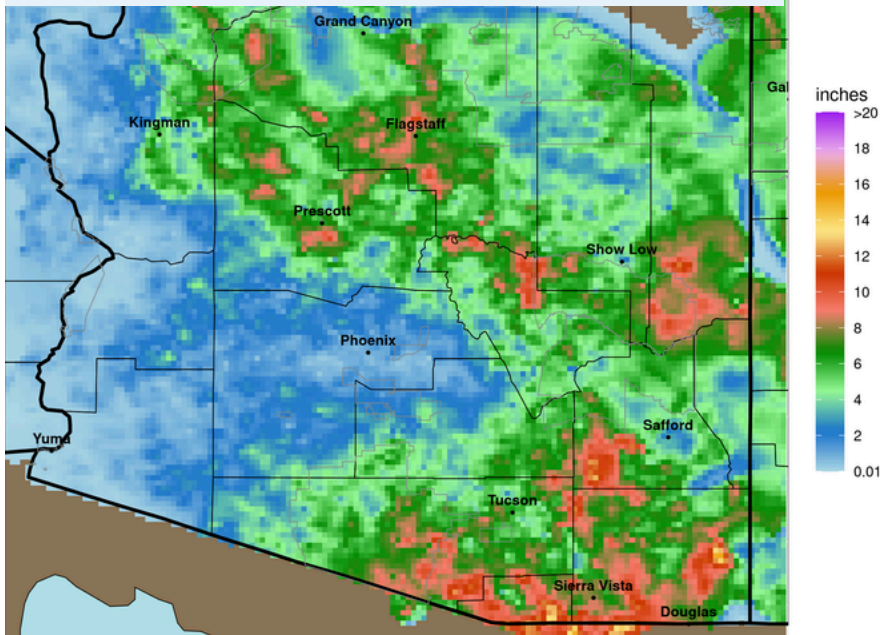
## What's Inside

- Monsoon Update
- Summer Temps
- September Outlook
- Downburst Events
- New Satellite
- Storm Report review
- Update your contact information

Monsoon season got off to a good start with rain and thunderstorms across Arizona in June. But, for a lot of places, notably the lower deserts, precipitation has been disappointing so far. We'll look at Monsoon precipitation through August, and get a look at the September outlook from the Climate Prediction Center. Also in this issue, we will take a quick look at a couple of downburst events.

# MONSOON SO FAR

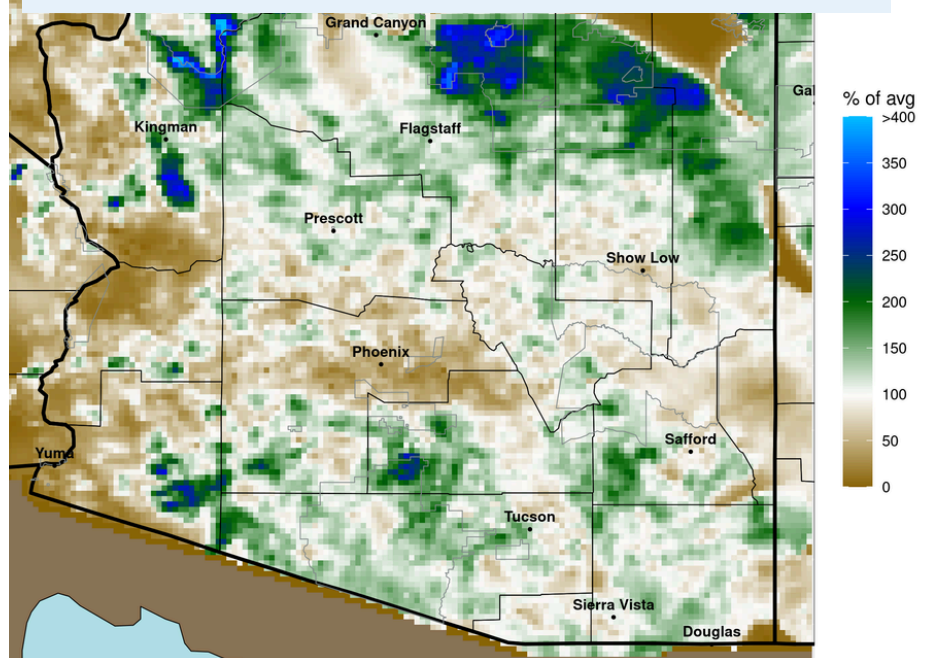
Total Rainfall June 15 - Aug 31



The map at left is for accumulated precipitation from June 15th - August 31st. In general, the areal distribution aligns pretty well with what we commonly see with higher terrain areas of central, northern, and southeast AZ receiving the most. And conversely, the lower deserts seeing the least.

So, how do the numbers from above compare to normal for this point in the Monsoon? As you can see on the map at right, it's a mixed bag. For much of the Phoenix area, we are on the low side (except for a pocket in the northwest Valley). But, some areas in northwest and southwest Maricopa, western Pinal, and southeast Yuma County have fared well.

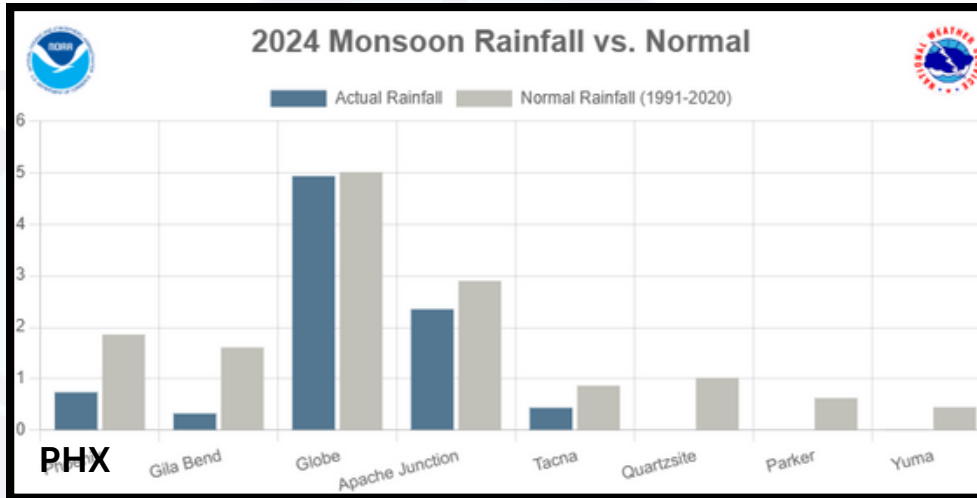
Percent of Average June 15 - Aug 31



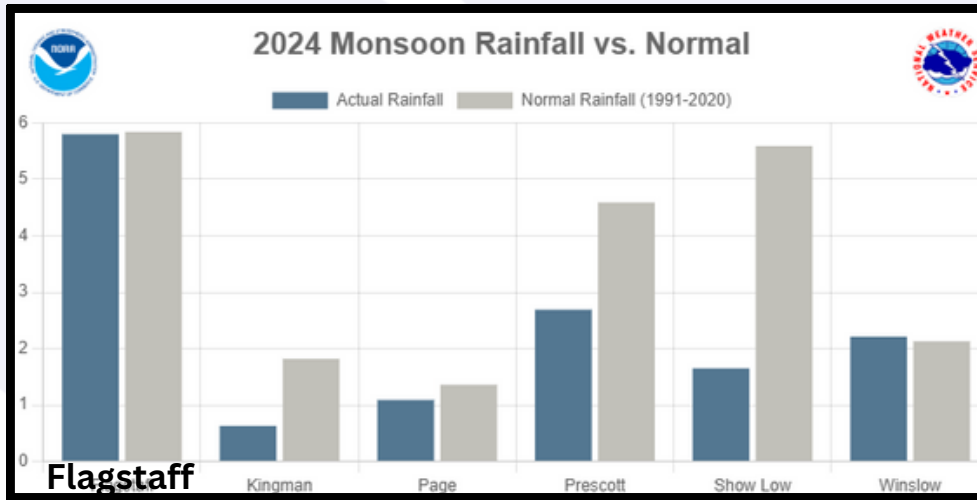
# MONSOON SO FAR (CONT.)

The bar charts below are another way of looking at the mapped data but for individual locations.

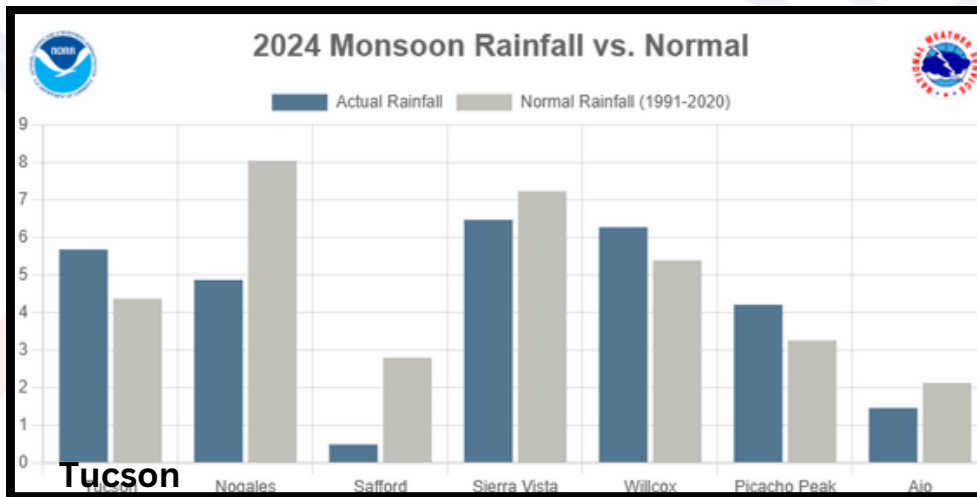
South-central and Southwest AZ



Northern AZ



Southeast AZ



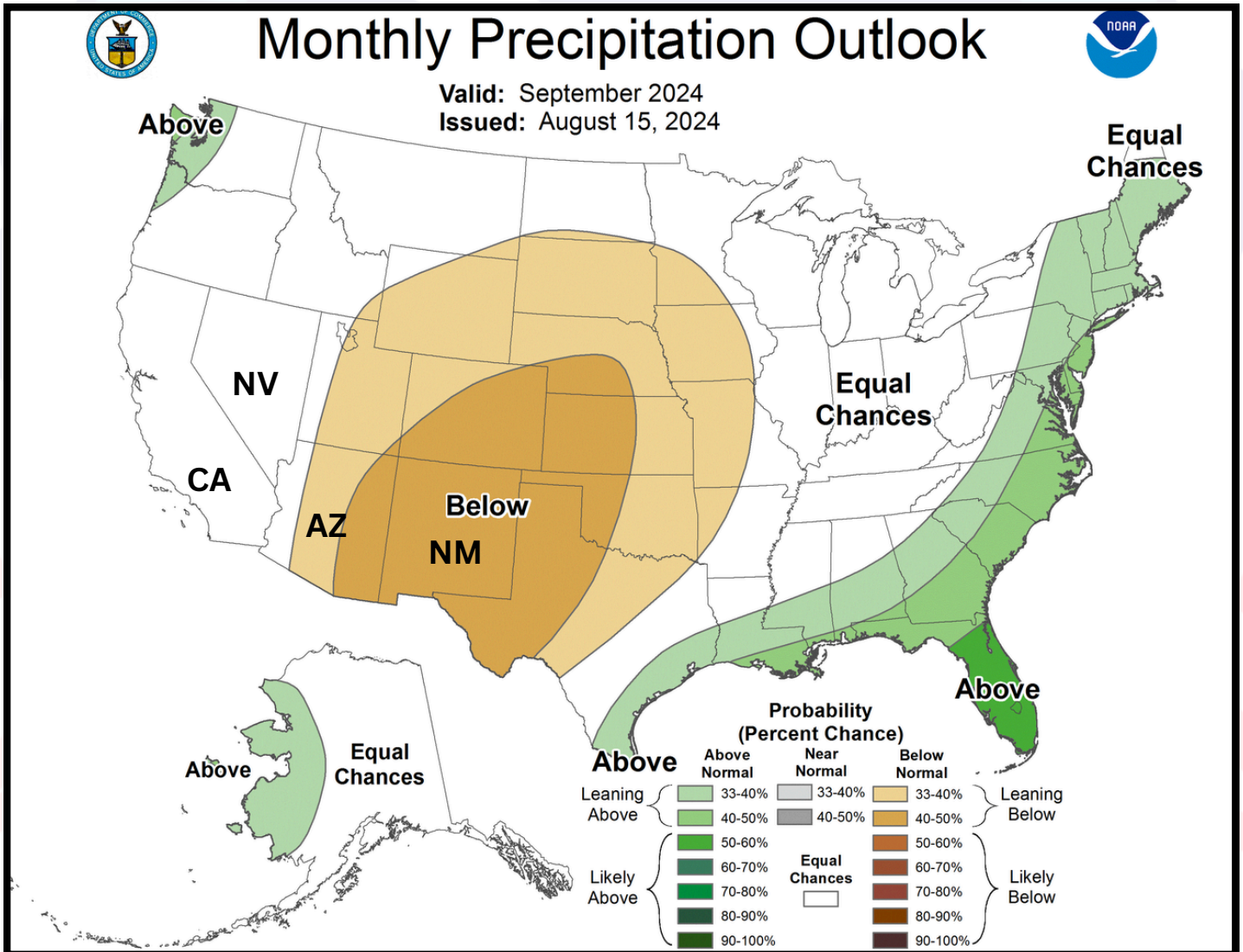
# NOTEWORTHY SUMMER TEMPERATURES (JUNE-AUG)

For much of Arizona and southeast CA, 2024 will be the hottest summer on record. Below is some record information from select locations.

Hottest Summers	1st	Avg Temp	2nd	Avg Temp	3rd	Avg Temp
Phoenix	2024	98.9	2023	97.0	2020	96.7
Yuma	2024	95.7	1994	95.3	2006	95.0
Casa Grande Nat. Mon.	2024	92.4	1994	91.7	1981	91.1
Imperial	2021	95.0	2024	94.8	2022	94.6
Blythe	2024	97.4	1981	96.3	2021	95.5
Tucson	2024 (tied)	90.0	2020	90.0	1994	89.9
Douglas	2024	81.2	2011	81.2	1994	81.2
Flagstaff	2024	68.4	1981	66.6	2002	66.3
Kingman	2024	86.0	2021	84.7	2020	84.1
Winslow	2024	80.7	2021	79.4	2018	79.1

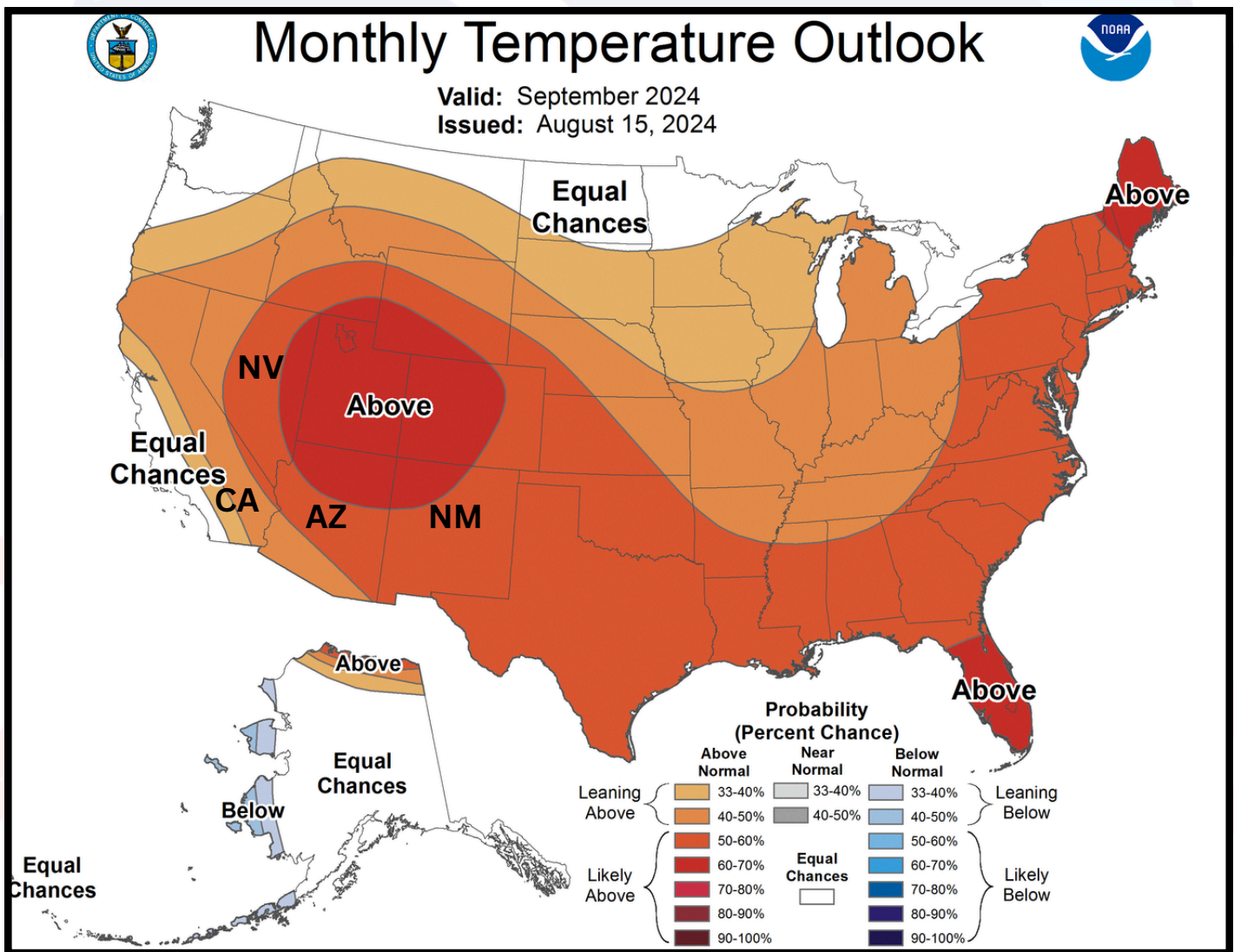
# SEPTEMBER OUTLOOK

The outlook for this month may not generate a lot of excitement. Of three outcomes (Below Normal, Near Normal, and Above Normal), Below Normal once again edges out the others as the more likely outcome - except for western AZ and SE CA. For those areas, each outcome has just as much chance of occurring as the others. In other words, ‘anything goes.’ For central AZ, the chances are 33% - 40% for Below Normal; 34% for Near Normal; 26% - 33% for Above Normal. Bear in mind, these are broad estimates of probability and struggle to depict the localized nature of the rainfall coverage.



# SEPTEMBER OUTLOOK (CONT.)

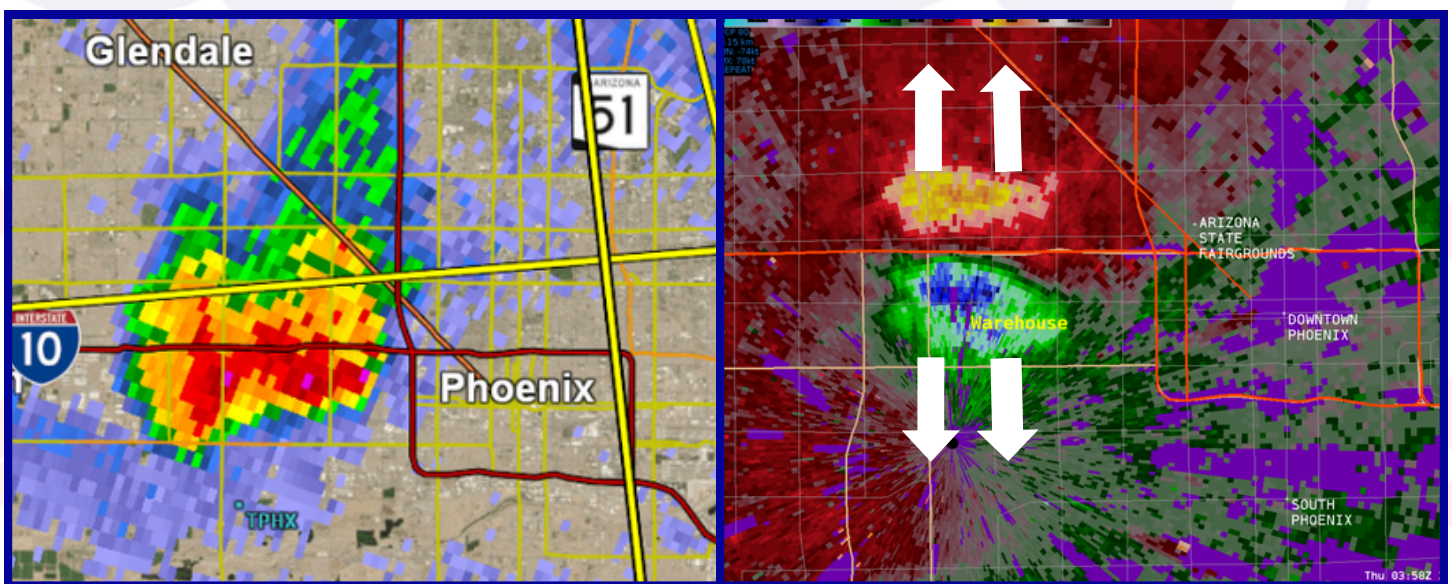
For the temperature outlook, you may have guessed it. Above Normal is the favored outcome - though not the only possible outcome. For AZ, that means at least 40-50% likelihood the month of September as a whole will be above normal (60-70% for parts of N. AZ). That leaves 34% chance for Near Normal and no more than 16-26% chance for Below Normal. Southeast CA has a little less distinct tilt in the odds for Above Normal.



# DOWNBURST EVENTS: JULY 24TH, 2024

On July 24th, there were a large number of downbursts in the Greater Phoenix area - primarily west of I-17. The most powerful of these occurred near 43rd Ave. and I-10.

In the graphic below, there are two parameters shown that are taken from an FAA Terminal Doppler Radar: reflectivity (left) and velocity (right). Reflectivity is representing returned energy from the rain and cloud droplets. Velocity is actually radial velocity which is the portion of the particle movement that is parallel with the radar beam. Green is movement toward the radar and red is away from the radar. Note: the radar can't detect vertical movement - it's the horizontal movement being picked up. However, we can infer vertical motions from signatures in the data. Notice, the very strong winds moving away from each other (divergence) which is occurring in the lower levels of the atmosphere. It arises from a potent downdraft that hits the ground and spreads out horizontally. That's a very distinct downburst signature. Find more about this event [here](#).



Downburst on radar on July 24, 2024

## DOWNBURSTS: JULY 24 (CONT.)

Here are a few pictures of the damage done by this downburst. Unfortunately, there was a fatality of an employee at a heavily damaged warehouse.



Semi-truck flipped on its side near Werner Enterprises located at 49th Ave and Lower Buckeye Rd. Photo by David Grostick



Large uprooted tree bringing down a brick fence in the area of 43rd Ave and Union Hills Dr. Photo by Rachel Maw.



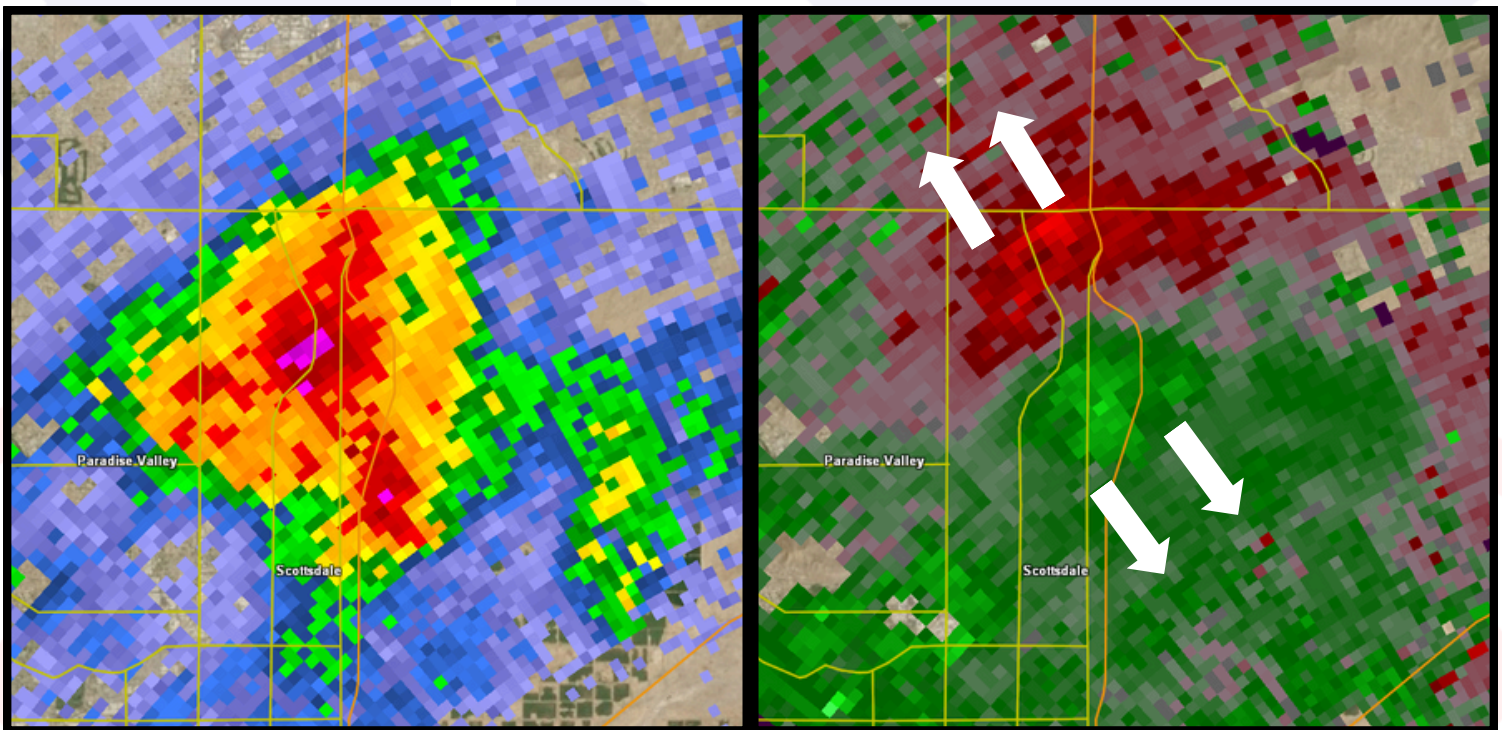
Complete collapse of warehouse roof near 47th Ave and Van Buren St. Photo by Cindy Kobold.



# DOWNBURST EVENTS: AUGUST 6, 2024

On August 6th, an isolated storm produced a downburst over the McCormick ranch neighborhood. This thunderstorm as well as others that developed around the same time appear to have been initiated by a gust front from distant storms to the southeast. The storm developed very quickly and produced a downburst quickly as well.

In the graphic below, as with the previous example, there are two parameters shown: reflectivity (left) and radial velocity (right). Notice, the couplet of inbound (green) and outbound (red) movement. That is a very clear divergence signature from a downburst. You can find more radar imagery as well a meteorological analysis in a write-up [here](#).



Downburst on radar in Scottsdale on August 6, 2024

# DOWNBURSTS: AUGUST 6 (CONT.)

Here are a few pictures of the damage done by this downburst.



Large uprooted tree.  
Photo by Troy Lynch/12News



Storm damages at Avia McCormick  
Ranch Apartment Homes.  
Photo by Mark Henle/The Republic



Large uprooted tree at the Avia McCormick Ranch Apartment  
Homes. Photo by Mark Henle/The Republic

# NEW GOES SATELLITE

On June 25th, a Geostationary Orbiting Earth Satellite (GOES) was launched from the Kennedy Space Center on a SpaceX Falcon Heavy (video [here](#)). This satellite was known as GOES-U until July 7th when it reached a position 22,236 miles above Earth's equator. At that point, it was renamed GOES-19. It is currently located between GOES-East and GOES-West at 89.5 degrees west longitude and is undergoing a checkout and testing phase of its instruments and systems. Later this month, the first images are expected to be received. When all of the testing is complete, it will be drifted to 75.2 degrees west longitude and become the new GOES-East replacing GOES-16. That is projected for April 2025. More information on the launch and orbit attainment process can be found [here](#).



# SPOTTER REPORTS

Though a weather event may not bring much in the way of thunderstorms, it can still lead to other hazards. See below for a review of reporting criteria and methods.

## Reporting Criteria:

- Tornado
- Funnel Cloud
- Storm Damage (broken tree limbs, shingles off roofs, etc.)
- Flooding (streets, running washes, etc.)
- Low Visibility
  - less than 1 mile due to dust, sand, fog, etc. (not rain though)
- Rotating Wall Cloud
- Heavy Rainfall
  - measured ½ inch or more accumulation in 30 min. or less
- Hail (diameter of largest stone - any size)
- Snow (accumulating or not)

## Reporting Methods (for trained Spotters only):

- Web: <https://inws.ncep.noaa.gov/report/>
- Email: [psr.spotters@noaa.gov](mailto:psr.spotters@noaa.gov)
- Voice Hotline (unlisted - just for Spotters): 1-800-697-0655
- HAM Radio NET

Sector 2 - Maricopa and Pinal Counties: 443.050 MHz (PL 100.0)

Sector 6 - Southern Gila County: 147.200 MHz (PL 162.2)

Sector 7 - Yuma County: 146.780 MHz (PL 103.5)

Sector 8 - Imperial County: 146.670 MHz (PL 103.5)

Sector 9 - La Paz County and Blythe: 145.310 (PL 107.2) and 147.06 (PL 203.5)

# STAYING CONNECTED

## SOCIAL MEDIA

Be sure to stay up to date with the weather and our other programs by following us on social media.



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@NWSPhoenix



/NWSPhoenix

## HAS YOUR INFORMATION CHANGED?

If your email, phone number, or address has changed since your last class, please click the link to help us keep that information up to date.

[GOOGLE FORM TO CHANGE CONTACT INFORMATION](#)

## FORGOT YOUR SPOTTER ID?

It happens to the best of us! Send Austin an email he will email you back with your information.

[AUSTIN.JAMISON@NOAA.GOV](mailto:AUSTIN.JAMISON@NOAA.GOV)

## NO LONGER WANT TO BE A SPOTTER?

If you would no longer like to be one of our trained weather spotters, you can fill out this google form and we will remove you from our database of spotters.

[GOOGLE FORM TO BE TAKEN OFF SPOTTER DATABASE](#)