SPOTTER NEWSLETTER

NWS PHOENIX SKYWARN NEWSLETTER

JANUARY 2022

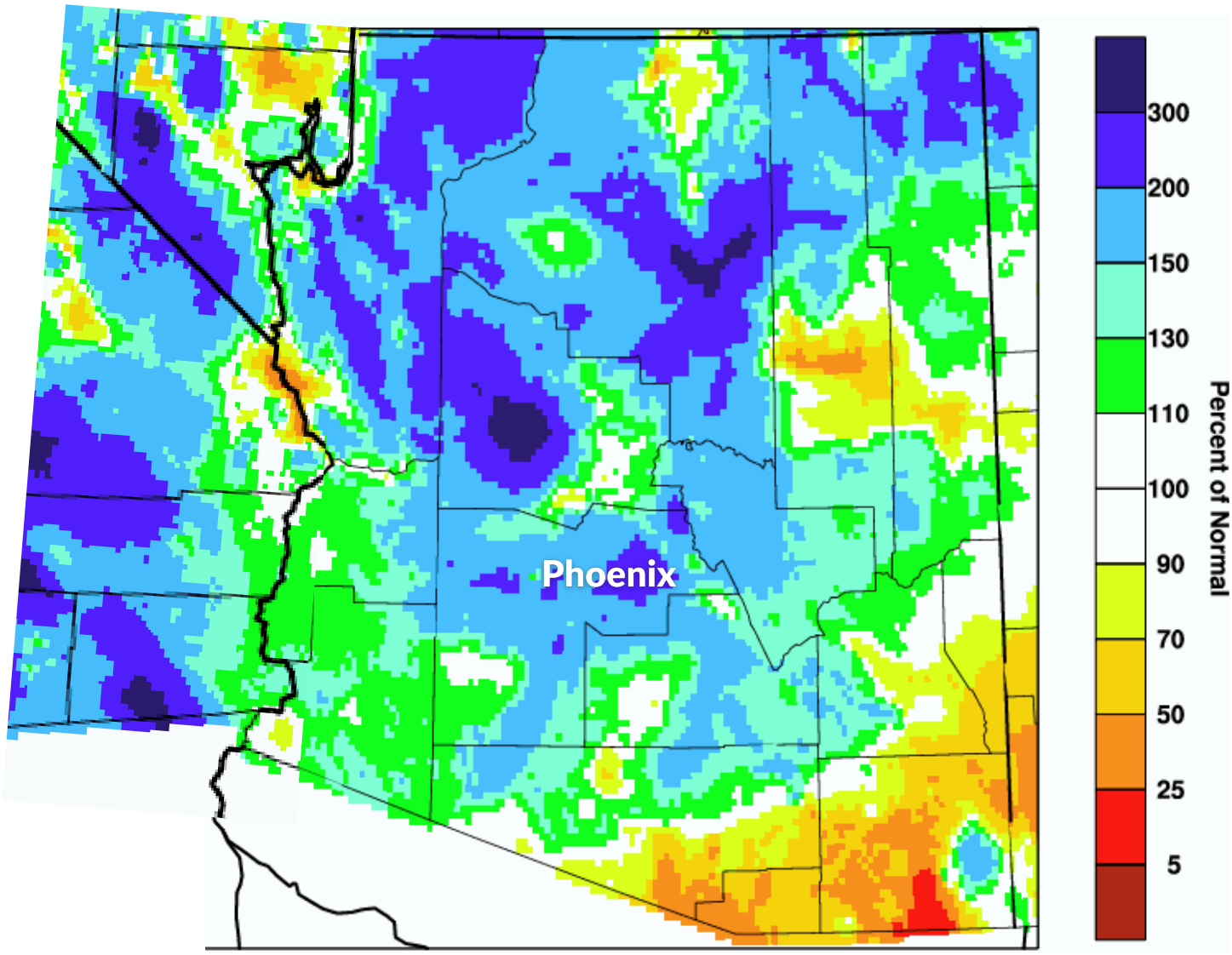
WHAT'S INSIDE

Winter '21-'22 Update

The Winter season (Dec-Jan-Feb) has gotten off to a good start in terms of precipitation with a lot of places getting above average rainfall in December - despite the backdrop of La Nina conditions in the Pacific. It's a big change from the previous month which was very dry. It's an example of how La Nina (at other times El Nino) is not the only factor in the weather/climate system. We'll examine December's precipitation, review the drought status, and take a look at the biggest rainfall event from last month.

Winter Update - December Review

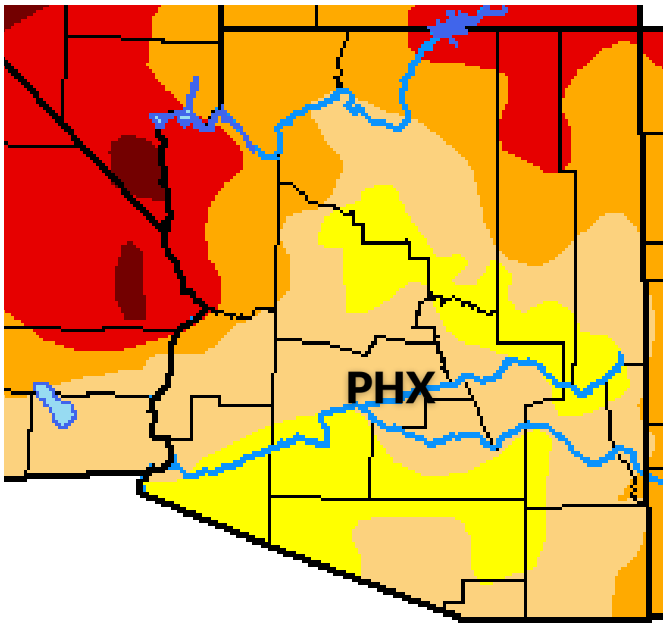
The parameter that is probably of the most interest in an arid region is precipitation. The map below is for percent of normal for the month of December. By and large, except for portions of southeast Arizona, most places were above normal. In fact, a lot of places were more than 150% above normal.



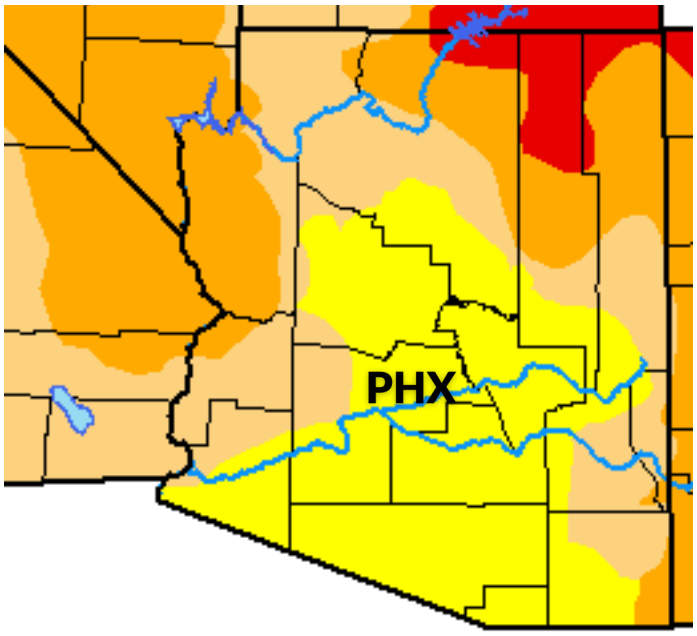
December Review - continued

There was enough rain in recent weeks to put a bit of a dent in the long term drought in some areas. The maps below show the drought status at two different points in time. The one on the left is from December 7th and the one on the right is from January 4th. The D3 (Extreme Drought) and D1 (Moderate Drought) categories saw the most improvement in terms of areal coverage.

December 7, 2021



January 4, 2022



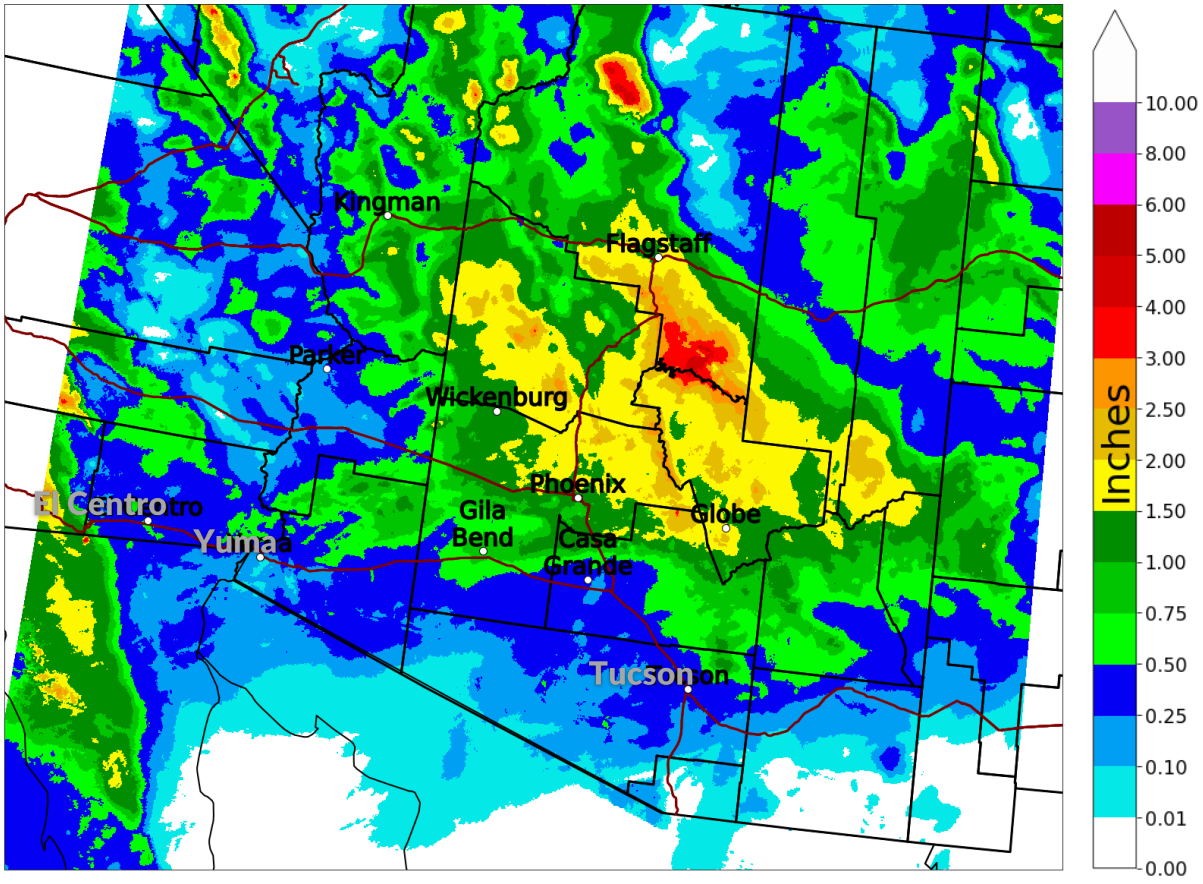
Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

December Review - continued

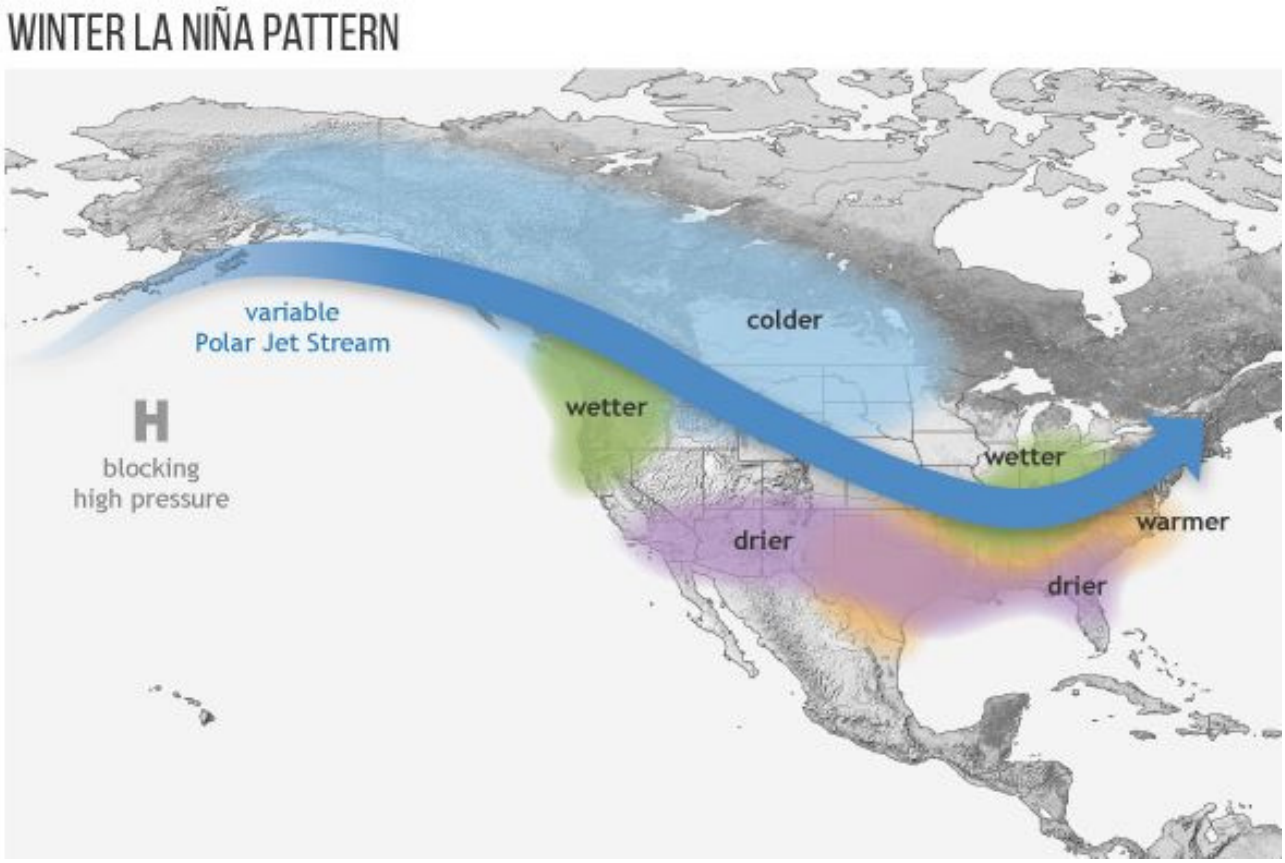
Let's take a look at the biggest precipitation event of December. The causative storm system started producing rainfall over northwest Arizona and southeast California on the afternoon of the 23rd. It spread rain west to east and wrapped up over Arizona on the 25th with some isolated light showers. The core of the rain and high elevation snow fell on the 24th. For a large majority of locations, it was the single wettest calendar day of the month by a large margin. The system was "warm" in the sense that it didn't originate from high latitudes. Plus, it was tapping into moisture from tropical latitudes. So, snow levels were quite high for much of the event.

Multi-Sensor Rainfall Estimate from
6 AM Dec 23, 2021 to 6 AM Dec 25, 2021



Outlook for the Rest of the Winter

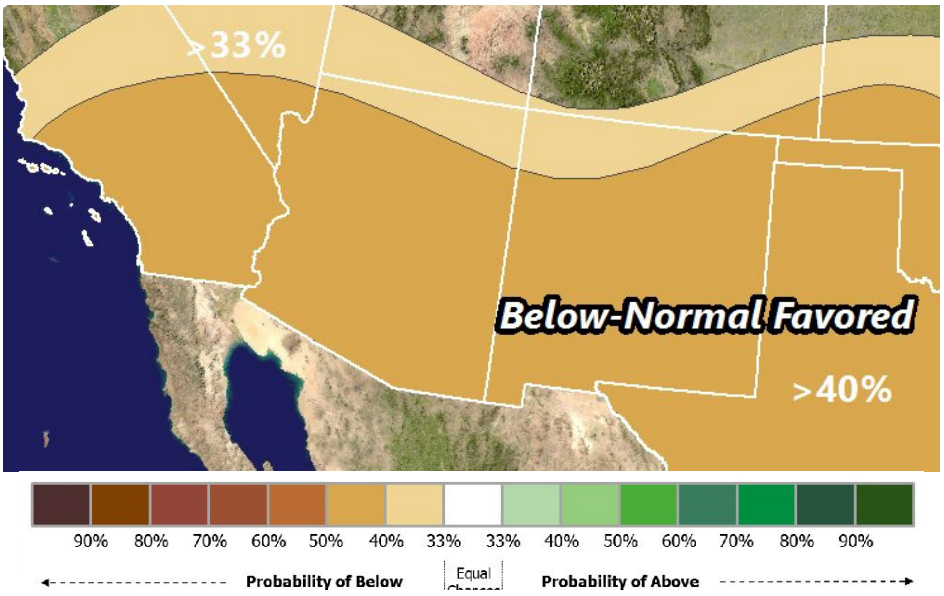
So, what is the outlook for the rest of the season? While we know that La Nina (nor El Nino) doesn't account for everything in the weather/climate system, it is still an important consideration to take into account when making long range (multi-week, multi-month) projections. As a quick review, La Nina refers to cooler than average sea surface temperatures (SSTs) near the Equator in the central and eastern Pacific Ocean (learn more). The conceptual map below depicts a common atmospheric pattern during La Nina conditions. The NWS's Climate Prediction Center (CPC) forecasts La Nina to continue through winter then weaken and reach Neutral conditions in the Aril - June time frame.



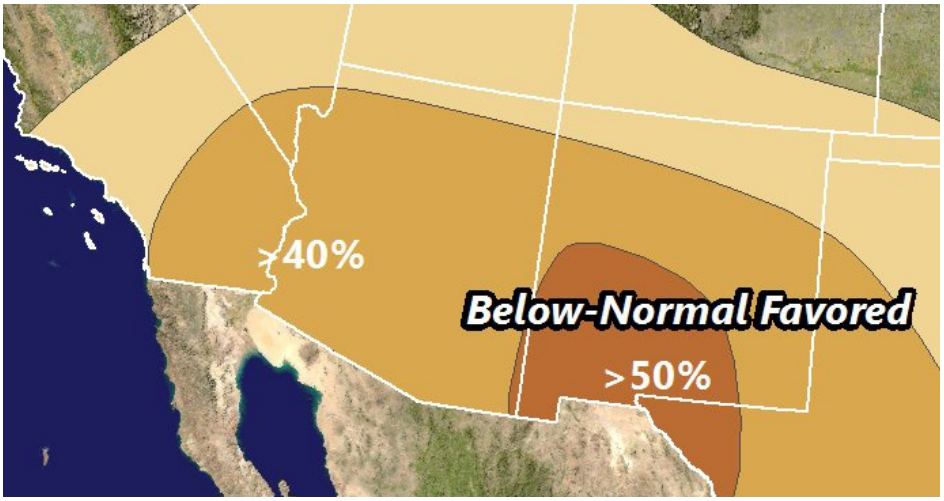
Rest of Winter - Continued

The maps below depict the CPC outlooks for **precipitation** for January as a whole and for the current three month period of January through March. There are a variety of other inputs that go into the forecast beyond just the "La Nina factor." But, as you may have guessed, the most likely outcome for total precipitation the rest of the winter is Below Normal as opposed to Above Normal or Near Normal. However, that just means those latter categories are less likely - not impossible.

January



January through March

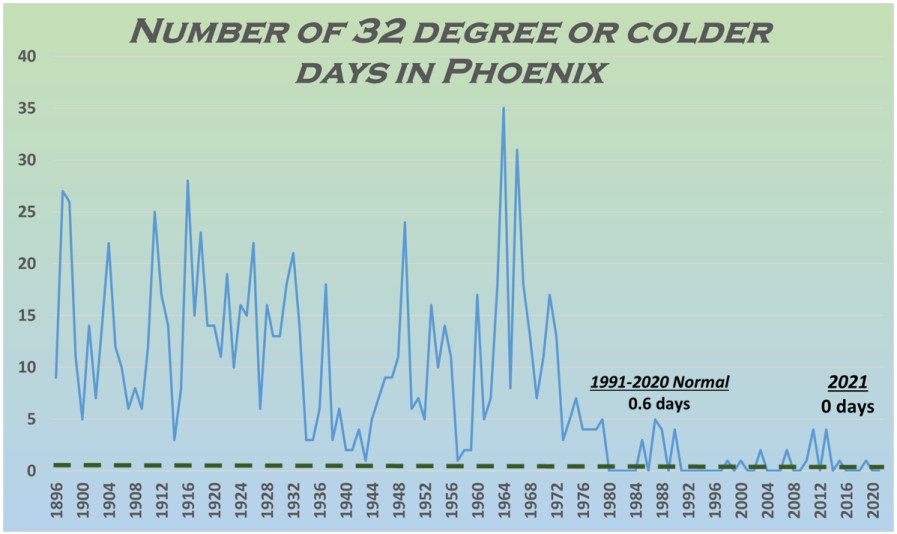


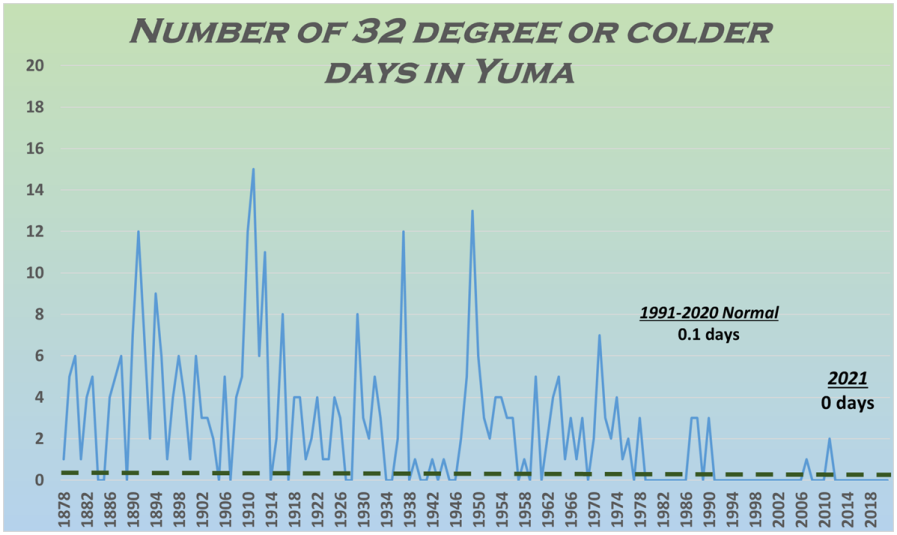
2021 Climate Review

For those that love the classic climate stats and factoids, we have a summary of 2021. The full write-up can be found here. Below are some snippets from the report.

The year 2021 ended up being tied for the 10th warmest year recorded in the history of Phoenix, Arizona, 8th warmest at El Centro, CA, and tied for 8th warmest in Yuma.

Freezing temperatures are getting more rare at both Phoenix and Yuma. See the graphs below.





Product Changes

Over the past year or two, the NWS has had changes to some of our Warnings, Watches, and Advisories (WWAs). One of the more exciting developments is that last year we acquired the ability to disseminate Severe Thunderstorm Warnings over the Wireless Emergency Alert system (delivered to cell phones) if the storm met certain criteria (wind speed and/or hail size). Previously, we already had Tornado, Flash Flood, and Dust Storm Warnings being carried on the WEA. There have been more recent changes that involve streamlining flood related Watches and Advisories. We'll summarize the changes below.

Severe Thunderstorm Warnings (SVRs) have Damage Threat categories. The top two categories ("Destructive" and "Considerable") will have additional Tags (labels) at the bottom of the text that aids downstream dissemination systems in parsing out the information. "Destructive" level storms are carried on the Wireless Emergency Alert system (cell phone notices)***. All SVRs will still activate the Emergency Alert System (broadcast TV/Radio).

- **Destructive**: storms producing hailstones that are 2.75" in diameter (baseball size) or larger and/or 80+ mph straight line winds.
- **Considerable**: hail of 1.75" or larger (but less than 2.75") and/or 70+ mph winds (but less than 80 mph).
- For situations not meeting Destructive or Considerable thresholds ("Base"), there won't be an additional Tag.

***On August 16th, our office issued its first "Destructive" level Severe Thunderstorm Warning (for the winds).

Product Changes - Continued

Flash Flood Warnings (FFWs) have Threat categories akin to SVRs. The top two categories are "Catastrophic" and "Considerable". They are both carried on the Wireless Emergency Alert system***. All FFWs will still activate the Emergency Alert System (broadcast TV/Radio).

- **Catastrophic**: Also known a Flash Flood Emergency. These are the kind of situations that have multiple swift water rescues, homes destroyed, and/or a total failure of a major dam.
- **Considerable**: Includes situations with one or more water rescues, highways washed out, one or more buildings with flood water getting inside, mud slide, debris flow, levee failure.
- For situations not meeting Catastrophic or Considerable thresholds ("Base"), there won't be an additional Tag for the WEA. But, it doesn't mean it's not a significant situation.

***On July 29th and August 18th of this past year, our office issued its first two "Catastrophic" level Flash Flood Warnings. There were both related the Telegraph Burn Scar with torrents flowing downstream through the Globe/Miami area.

Flash Flood Watches (FFAs) will be limited to burn scar and dam break (or levee failure) situations. Watches involving more common flooding situations will just be called **Flood Watches**.

Flood Advisories (FLSs): All flooding Advisory types (Urban, Small Stream, Arroyo, etc.) will just be called **Flood Advisory**.

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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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

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