

Heat Units After Planting							
Planted:	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	
2021:	3553	3405	3186	2974	2712	2397	
Normal:	3505	3347	3197	2969	2720	2368	
+/-Norm:	2	2	0	0	0	1	Days
2020:	3482	3373	3234	2990	2709	2373	
Water Use:	1.38	1.57	1.86	1.99	1.99	1.99	"/wk

Temperature & Heat Units								
Last Week					This Week			
	Max	Min	HUs	Rain		Max	Min	HUs
Actual	107	73	191	0.00	2020	101	73	189
Normal	102	74	192		Normal	102	73	190

Cotton Heat Stress						
Date						
8/23	8/24	8/25	8/26	8/27	8/28	8/29
NS	NS	L1	L1	L1	L1	L1

NS: No Stress; L1: Level 1; L2: Level 2

#### Weather Forecast

An approaching trough of low pressure will combine with moisture from former tropical storm Nora to produce wet conditions Tuesday through Thursday. This system has the potential to produce very heavy rains, beginning Tuesday in western AZ with the rains progressing into central & eastern Arizona Wednesday & Thursday. Below normal temperatures are expected beginning Tuesday & continuing for the rest of the week. Drier conditions with warmer temperatures are forecast for the weekend. Longer term, forecasts suggest monsoon activity will return next week.

## Agronomy Update

The last steps in the production of an Arizona cotton crop involves the making the last, or terminal, irrigation of the season & then making the application of defoliant to prep the crop for harvest. Identifying the last set of blooms & bolls to mature for harvest is the critical part of that process. Development from flower to a full-sized mature green boll requires 600 HUs & an additional 400 HUs are then required for a full-sized green boll to fully open (1,000 HUs total; see table below). Irrigations are needed to maintain good soil moisture from a bloom to full-sized green boll stage for full fiber development. The presence of a tan seedcoat is a good indication of sufficient boll maturity. Defoliation is the next & final step of the crop season in preparation of the crop for harvest. A general rule of thumb is to evaluate a field for defoliant application at ~ 2X the normal in-season irrigation interval. The plants need to be stressed & senescing but still alive and physiologically active.

## Boll Maturity Projections for Selected Late Season Flower Dates

Location	Flower Date													
	Aug 12		Aug 19		Aug 26		Sep 2		Sep 9		Sep 16		Sep 23	
	Mature	Open	Mature	Open	Mature	Open	Mature	Open	Mature	Open	Mature	Open	Mature	Open
Aguila	Sep 5	Sep 24	Sep 13	Oct 3	Sep 21	Oct 13	Sep 30	Oct 28	Oct 10	Nov 19	Oct 20	NA	Nov 4	NA
Buckeye	Sep 3	Sep 18	Sep 10	Sep 27	Sep 18	Oct 6	Sep 26	Oct 17	Oct 5	Oct 30	Oct 15	Nov 16	Oct 26	Dec 19
Coolidge	Sep 5	Sep 23	Sep 12	Oct 1	Sep 21	Oct 11	Sep 29	Oct 24	Oct 8	Nov 8	Oct 19	Dec 2	Oct 30	NA
Harquahala	Sep 3	Sep 20	Sep 11	Sep 29	Sep 19	Oct 9	Sep 28	Oct 22	Oct 7	Nov 7	Oct 18	Dec 2	Oct 31	NA
Marana	Sep 5	Sep 22	Sep 12	Sep 30	Sep 21	Oct 11	Sep 28	Oct 20	Oct 7	Nov 4	Oct 16	Nov 22	Oct 28	Dec 30
Maricopa	Sep 4	Sep 20	Sep 11	Sep 29	Sep 19	Oct 8	Sep 27	Oct 19	Oct 6	Nov 3	Oct 16	Nov 23	Oct 27	NA
Mohave Val.	Sep 4	Sep 21	Sep 12	Oct 1	Sep 20	Oct 11	Sep 29	Oct 24	Oct 8	Nov 9	Oct 19	Dec 9	Oct 31	NA
Paloma	Sep 3	Sep 19	Sep 11	Sep 28	Sep 19	Oct 7	Sep 27	Oct 18	Oct 5	Oct 31	Oct 15	Nov 19	Oct 26	Dec 24
Parker	Sep 2	Sep 20	Sep 11	Sep 28	Sep 19	Oct 7	Sep 27	Oct 18	Oct 6	Oct 30	Oct 15	Nov 16	Oct 25	Dec 16
Queen Ck.	Sep 4	Sep 21	Sep 12	Sep 30	Sep 21	Oct 11	Sep 29	Oct 23	Oct 8	Nov 7	Oct 18	Nov 24	Oct 29	NA
Roll	Sep 3	Sep 18	Sep 10	Sep 27	Sep 18	Oct 5	Sep 26	Oct 16	Oct 4	Oct 28	Oct 14	Nov 14	Oct 25	Dec 18
Safford	Sep 8	Sep 29	Sep 16	Oct 10	Sep 25	Oct 23	Oct 4	Nov 11	Oct 15	NA	Oct 28	NA	Nov 11	NA
Yuma Val.	Sep 2	Sep 17	Sep 10	Sep 25	Sep 17	Oct 3	Sep 25	Oct 13	Oct 3	Oct 18	Oct 12	Nov 6	Oct 21	Nov 23

NA: Projected Boll Opening Date is After December 31.

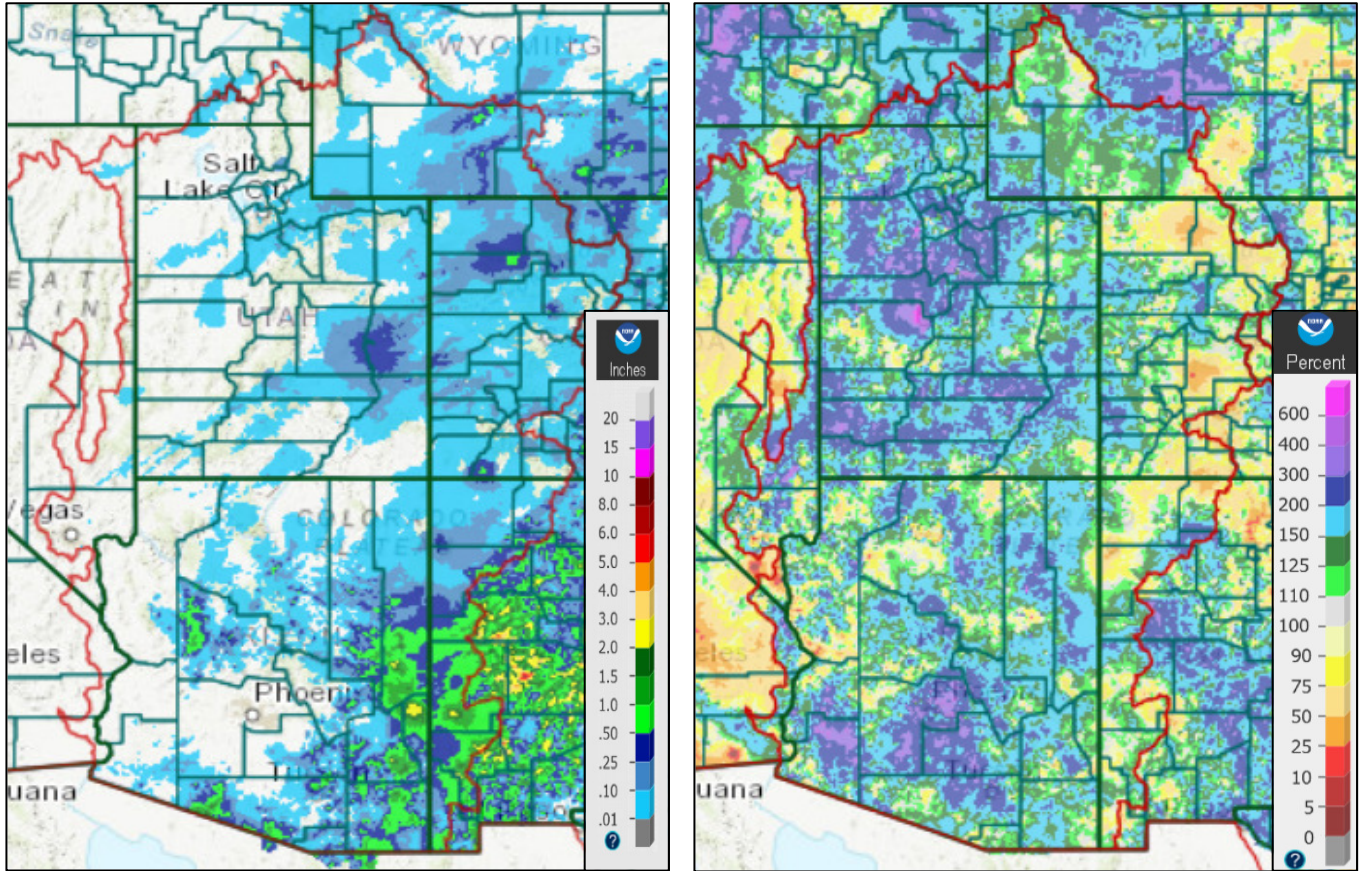
## Final Advisory Notice

This will be the final Cotton Development Advisory for the 2021 growing season & represents the end of my involvement with the program. I have enjoyed putting these advisories together during the two growing seasons since my retirement but feel it is time for the grower community and our current Extension professionals to evaluate this program and, if warranted, develop a new and improved product.

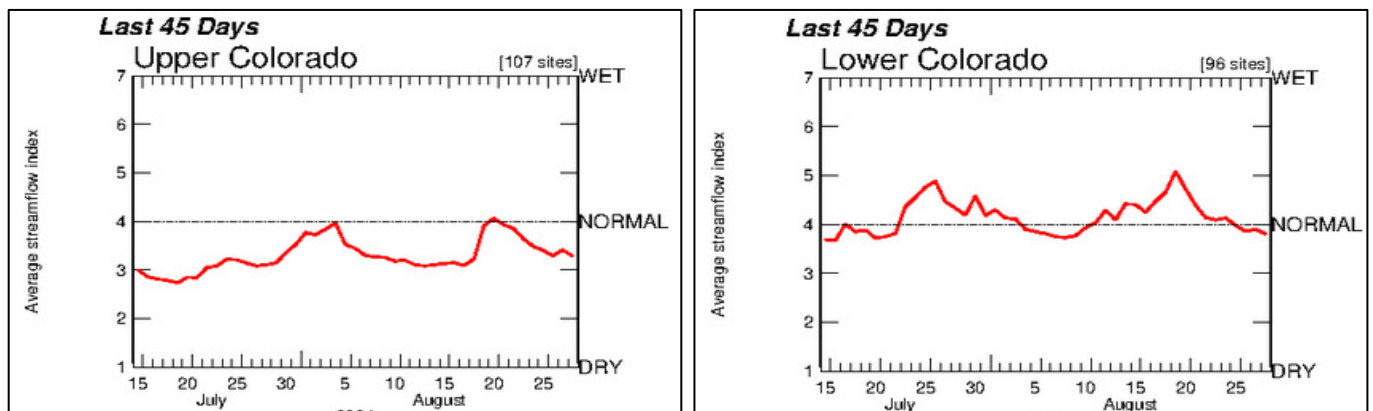
This program was initiated in 1991 following the difficult 1990 growing season that included a severe outbreak of pink bollworm & wet weather that resulted in flooding in central Arizona. Credit for the development of this program goes to Sam Stedman, the former Agricultural Agent & County Director in Pinal County, who pushed his Extension colleagues to develop a more effective & timely means of disseminating information on cotton production. Since that time the advisories have been developed by the Arizona Meteorological Network (AZMET) using local weather data collected by AZMET stations & input from Drs. Jeff Silvertooth & Peter Ellsworth. A special word of thanks goes to Bruce Russell, the long-time AZMET Program Coordinator, who assembled & disseminated the advisories each week.

Paul Brown

**Precipitation & Water Supply Update**

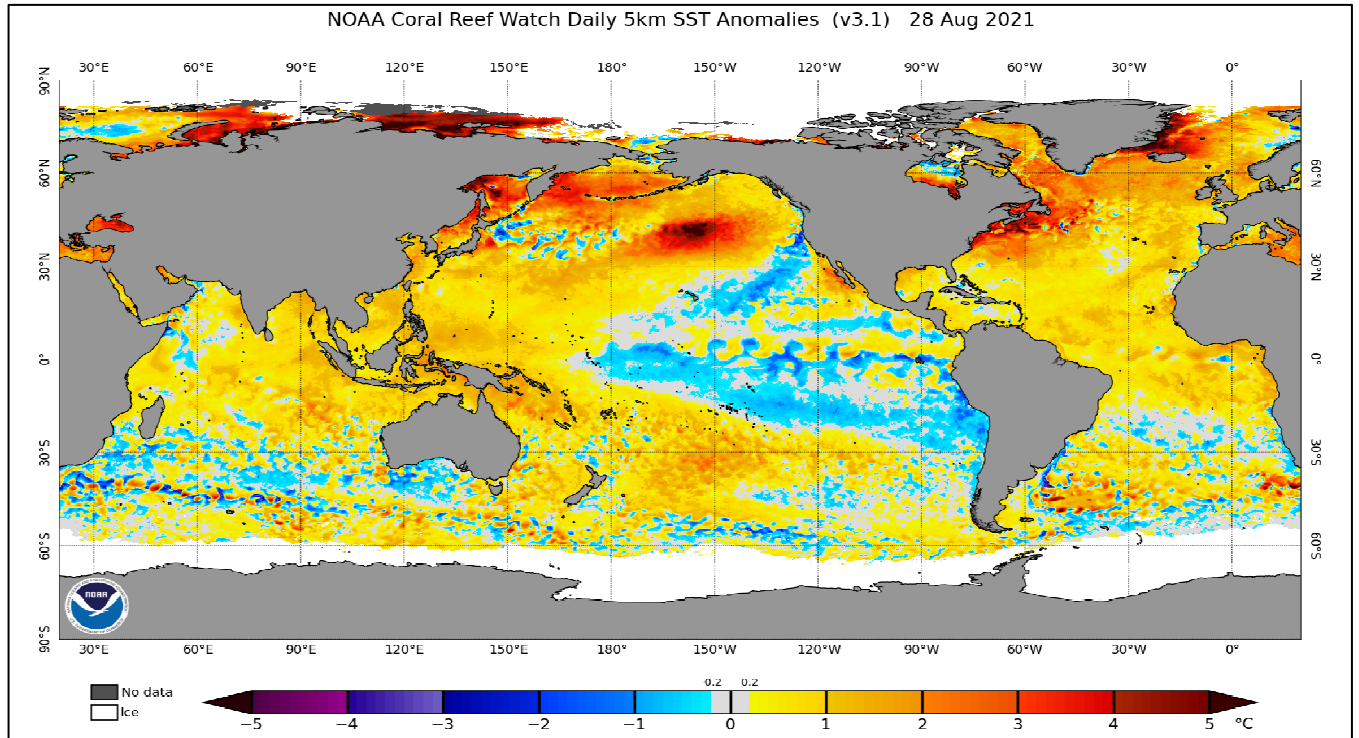


Precipitation was generally light across the entire Colorado Basin last week (left). Exceptions to this trend were found in the higher elevations of Arizona and New Mexico. Precipitation since the beginning of the monsoon (right; presented as % of normal) is running well above normal in much of the Basin. However, the important source regions for spring runoff along the Continental Divide are generally running below normal. Source: National Weather Service Advance Hydrological Prediction Service.



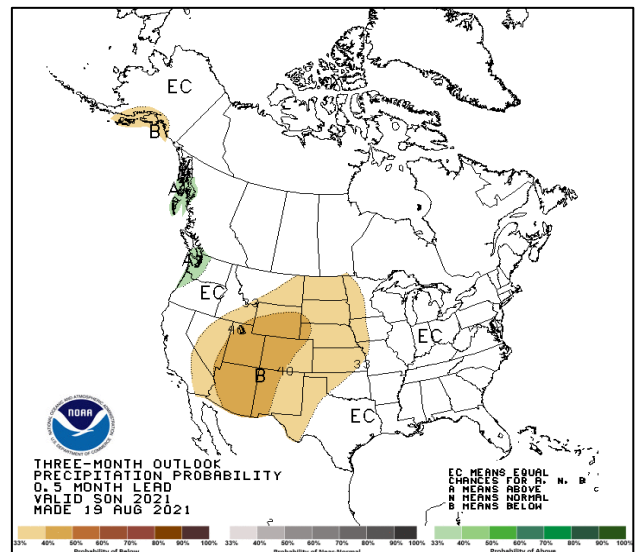
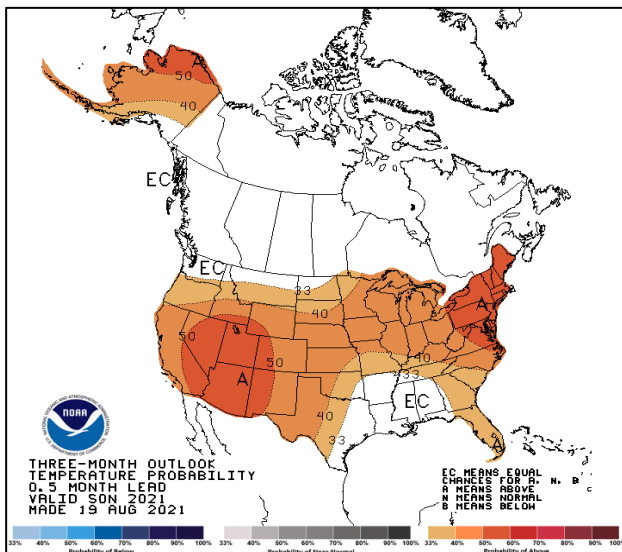
Streamflow continues to run below normal in the Upper Basin (left). Flow in the Lower Basin has declined in recent days but remains near long-term normals (right). Source: USGS WaterWatch.

**Fall & Winter Forecast**



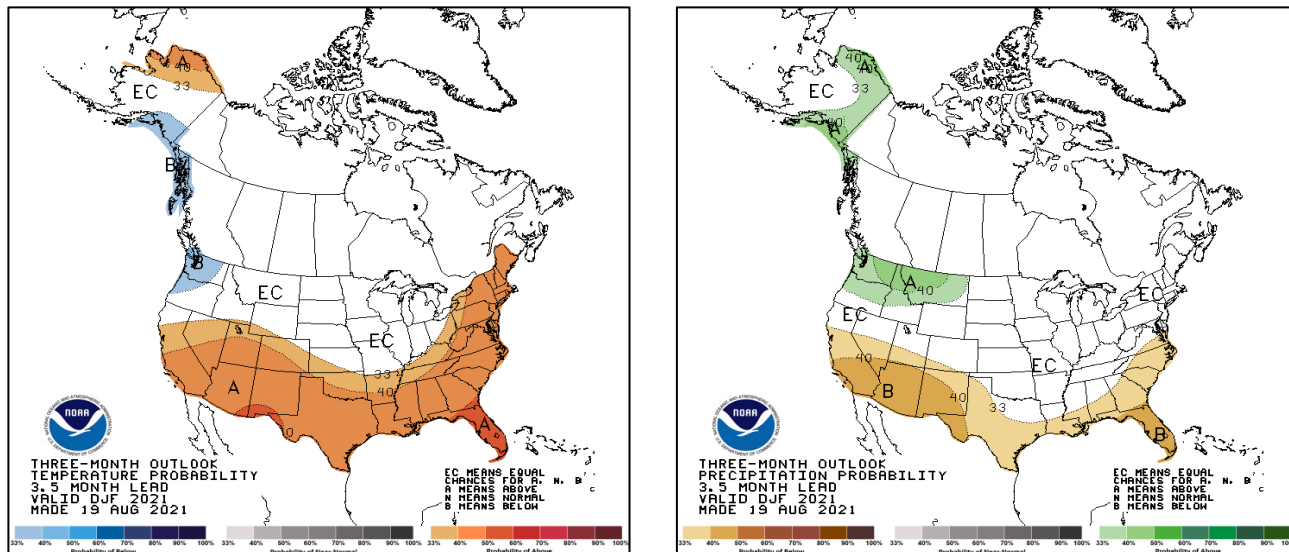
Forecasters believe La Niña conditions will develop this winter in the tropical Pacific. An area of below normal sea surface temperatures is already evident along the equator west of South American (above). La Niña conditions are associated with below normal winter precipitation in the Southwestern U.S. The impact of La Niña on winter precipitation is less certain in the Upper Basin, providing some hope for a more normal snow pack in the important source region for the Colorado River. Source: NOAA OSPO

**September through November Outlook**



The current 90-day outlook exhibits a strong bias for above normal temperatures (left) & a moderate bias for below normal precipitation (right). Note that the below normal precipitation bias extends across the entire Colorado Basin. Source: NOAA/NWS Climate Prediction Center

## December through February Outlook



The outlook for December through February exhibits a moderate bias for above normal temperatures (left) & a moderate bias for below normal precipitation (right). Much of the Upper Basin remains in the Equal Chances (EC) designation suggesting precipitation could approach normal. Source: NOAA/NWS Climate Prediction Center