

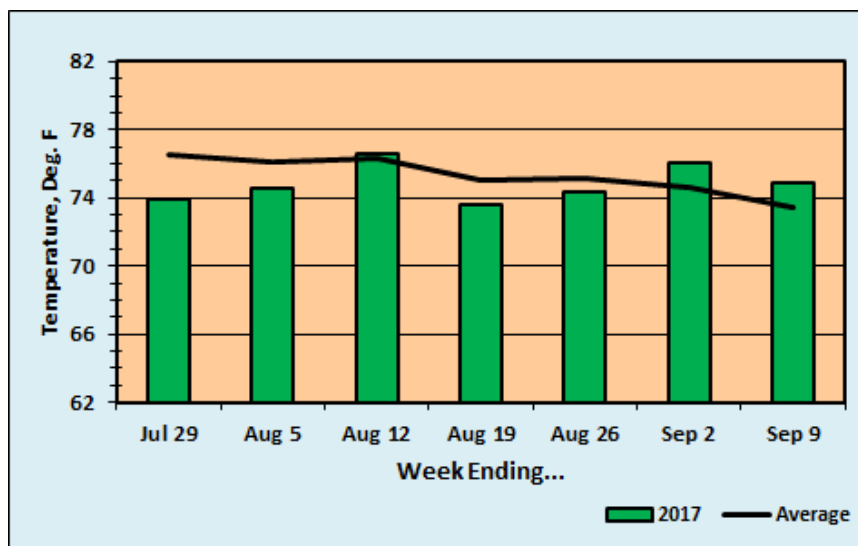
**SOUTHEAST ARIZONA CROP WATER USE REPORT**  
**September 10, 2017**

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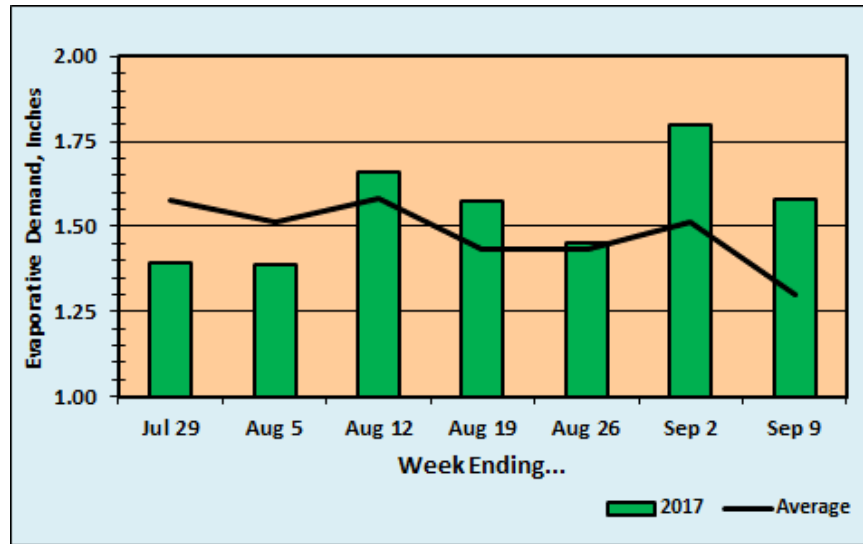
**Weather Update**

Warm and moderately dry conditions continued across the region last week. Temperatures averaged nearly 2 degrees above normal (Fig. 1) and the relatively clear and dry weather produced another week of above normal evaporative demand (Fig. 2). Precipitation was light in most regions (Fig. 3). Precipitation at local AZMET stations totaled 0.07” at Bonita, 0.08” at Bowie, 0.08” at San Simon and 0.42” at Willcox Bench. Year-to-date precipitation totals remain unchanged at 5.53”, 6.45”, 4.75” and 6.67” for Bonita, Bowie, San Simon and Willcox Bench, respectively. Precipitation since 1 January at Bonita now stands at 69% of normal (Fig. 4).

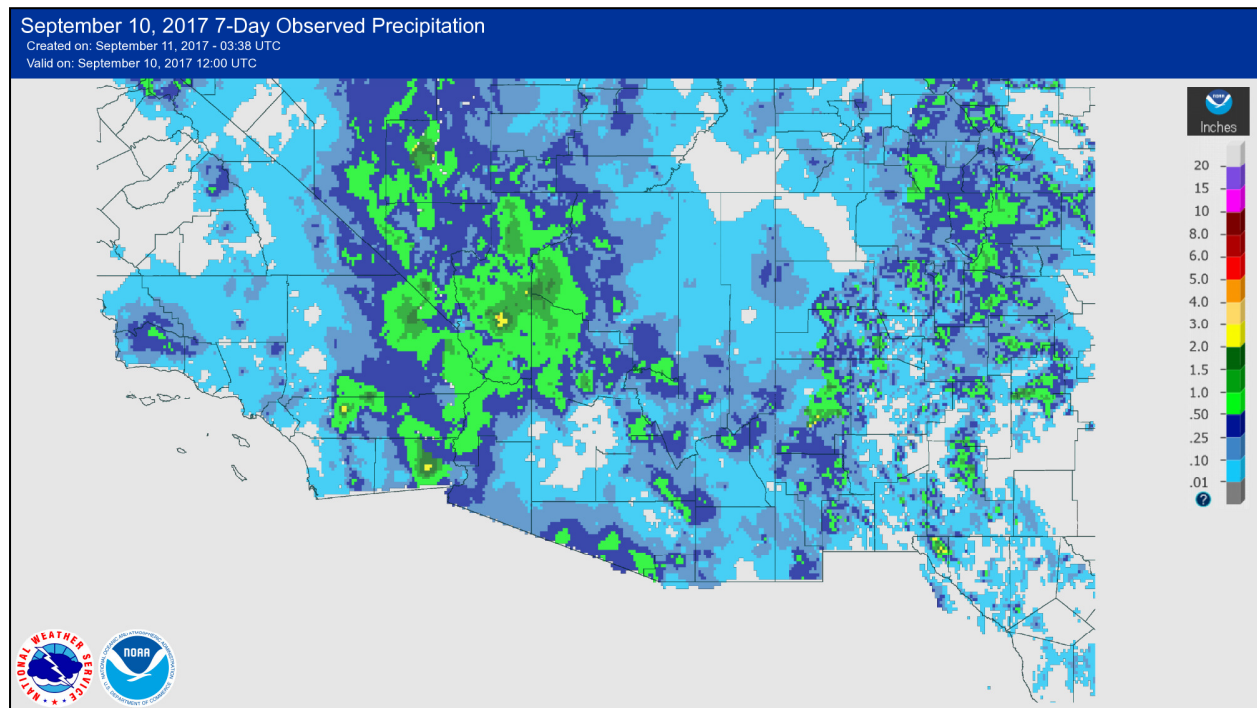
High pressure will limit moisture and the potential for precipitation for much of the week. Expect above normal temperatures with only a slight chance for precipitation through mid-week. Temperatures will moderate to near normal levels during the latter half of the week. Longer range forecasts suggest moisture and precipitation will return this coming weekend.



**Figure 1. Average weekly air temperature for the period 29 July through 9 September 2017. The black line provides the long term average value for each period.**



**Figure 2. Total weekly evaporative demand for the period 29 July through 9 September 2017. The black line provides the long term average value for each period.**



**Figure 3. Estimated precipitation for last week as reported by the National Weather Service.**

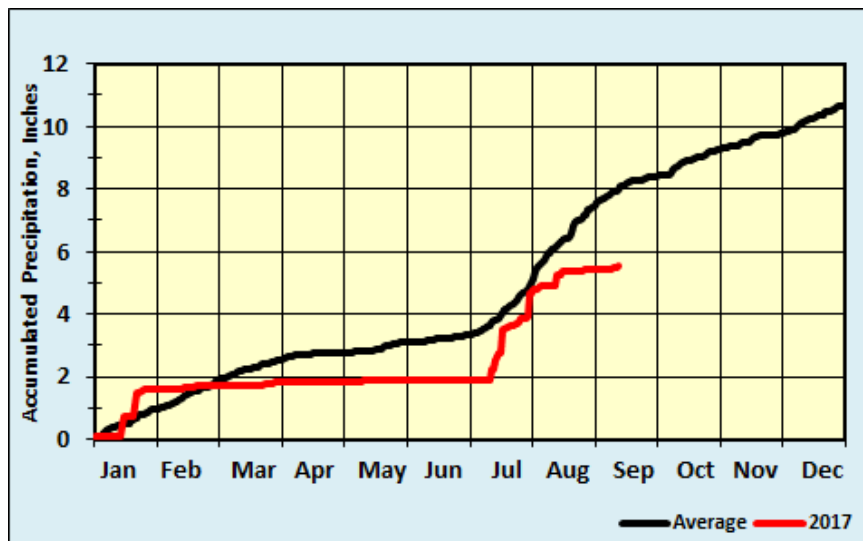


Figure 4. Cumulative precipitation for Bonita since 1 January 2017 (red line). The black line shows the average cumulative precipitation trend for Bonita.

### Crop Water Use Update

The tables below provide estimates of crop water use for the past and upcoming week for selected crops in southeast Arizona. Water use was estimated by applying crop-specific coefficients (Kc) to values of reference evapotranspiration (ETo) generated by local AZMET weather stations. Estimates for the upcoming week were computed using historical averages of ETo for this time of year. See table at the end of this report to translate inches of water into pivot run times.

### ALFALFA

Alfalfa Water Use By Cutting Date								
Cut On >>	Water Use Last Week, Inches				Water Use This Week, Inches			
	Aug 19	Aug 26	Sep 2	Sep 9	Aug 26	Sep 2	Sep 9	Sep 16
Bonita	1.9	1.5	0.7	1.7	1.6	1.3	0.6	1.4
Bowie	1.6	1.3	0.6	1.5	1.7	1.3	0.7	1.5
Willcox Ben.	1.8	1.4	0.7	1.6	1.9	1.5	0.7	1.7
San Simon	1.8	1.4	0.7	1.6	1.8	1.4	0.7	1.6

**NUTS & APPLES**

Location	Pecan		Pistachio		Apples	
	Last Wk	This Wk	Last Wk	This Wk	Last Wk	This Wk
Bonita	1.9"	1.6"	1.8"	1.4"	1.6"	1.2"
Bowie	1.6"	1.7"	1.5"	1.5"	1.3"	1.3"
Willcox Ben.	1.8"	1.6"	1.7"	1.4"	1.5"	1.4"
San Simon	1.6"	1.8"	1.5"	1.6"	1.3"	1.3"

**CORN**

<b>Bonita</b>	Last Week: Water Use By Planting Date, Inches				This Week: Water By Planting Date, Inches			
Pivot Speed	Apr 1	Apr 15	May 1	May 15	Apr 1	Apr 15	May 1	May 15
1-Day	M	M	M	0.9	M	M	M	0.1
2-Day	M	M	M	0.9	M	M	M	0.1
3-Day	M	M	M	0.9	M	M	M	0.1
<b>Willcox Bench</b>	Last Week: Water Use By Planting Date, Inches				This Week: Water By Planting Date, Inches			
Pivot Speed	Apr 1	Apr 15	May 1	May 15	Apr 1	Apr 15	May 1	May 15
1-Day	M	M	M	0.5	M	M	M	M
2-Day	M	M	M	0.5	M	M	M	M
3-Day	M	M	M	0.5	M	M	M	M

M: Crop Mature

**WINE GRAPES**

Location	6' Trellis Spacing		8' Trellis Spacing		10' Trellis Spacing	
	Last Wk	This Wk	Last Wk	This Wk	Last Wk	This Wk
Bonita	1.4"	1.2"	1.0"	0.9"	0.8"	0.7"
Bowie	1.2"	1.2"	0.9"	0.9"	0.7"	0.7"
Willcox Ben.	1.3"	1.1"	1.0"	0.9"	0.8"	0.7"
San Simon	1.1"	1.3"	0.8"	1.0"	0.7"	0.8"

**CHILE**

<b>Bonita</b>	Last Week: Water Use By Planting Date, Inches				This Week: Water By Planting Date, Inches			
	Apr 1	Apr 15	May 1	May 15	Apr 1	Apr 15	May 1	May 15
<b>Pivot Speed</b>								
1-Day	1.8	1.9	1.9	1.9	1.4	1.5	1.6	1.6
2-Day	1.8	1.9	1.9	1.9	1.4	1.5	1.6	1.6
3-Day	1.8	1.9	1.9	1.9	1.4	1.5	1.6	1.6
<b>Willcox Bench</b>	Last Week: Water Use By Planting Date, Inches				This Week: Water By Planting Date, Inches			
	Apr 1	Apr 15	May 1	May 15	Apr 1	Apr 15	May 1	May 15
<b>Pivot Speed</b>								
1-Day	1.6	1.7	1.8	1.8	1.4	1.5	1.6	1.6
2-Day	1.6	1.7	1.8	1.8	1.4	1.5	1.6	1.6
3-Day	1.6	1.7	1.8	1.8	1.4	1.5	1.6	1.6

**PIVOT RUN TIMES (Days/Week) FOR VARIOUS RATES OF CROP WATER USE**

Crop Use Inches/Week	Pumping Days Per Week				
	500 GPM	600 GPM	700 GPM	800 GPM	900 GPM
0.35	1.9	1.6	1.3	1.2	1.0
0.70	3.7	3.1	2.7	2.3	2.1
1.05	5.6	4.7	4.0	3.5	3.1
1.40	<i>7.0</i>	6.2	5.3	4.7	4.1
1.75	<i>7.0</i>	<i>7.0</i>	6.7	5.8	5.2
2.10	<i>7.0</i>	<i>7.0</i>	<i>7.0</i>	7.0	6.2
2.45	<i>7.0</i>	<i>7.0</i>	<i>7.0</i>	<i>7.0</i>	<i>7.0</i>
2.80	<i>7.0</i>	<i>7.0</i>	<i>7.0</i>	<i>7.0</i>	<i>7.0</i>

Example: assume crop water use is 1.4"/week and your well supplies 900 GPM. Pivot would need to run 4.1 days during the week. Numbers in italics indicate system capacity is insufficient to offset crop water use and the crop must make up the deficit by using stored soil moisture.