Weather Update

A wet early start to the week was followed by warm and very dry conditions late in the week. Temperatures averaged near normal (Fig. 1) while the cloudy and humid weather early in the week kept evaporative demand at below normal levels (Fig. 2). Heavy precipitation was reported across portions of the area Monday and Tuesday as the remnants of a tropical disturbance passed over the area. Precipitation at the local AZMET stations totaled 1.64” at Bonita, 0.78” at Bowie and 0.72” at San Simon. Precipitation since 1 January at Bonita is now running 55% above normal (Fig. 4).

High pressure will dominate local weather conditions this week. Expect clear, warm and dry conditions with near record high temperatures by the middle of the week. Night temperatures will remain moderate due to very low humidity. Tropical activity continues to develop off the west coast of Mexico, but none of the current systems is expected to impact Arizona during the next week.

This will be the final report for the 2015 growing season. Please note that a strong El Niño has developed in the tropical Pacific and forecasters are calling for above normal fall and winter precipitation.

Figure 1. Average weekly air temperature for the period 31 July through 26 September 2015. The black line provides the long term average value for each period.
Figure 2. Total weekly evaporative demand for the period 31 July through 26 September 2015. The black line provides the long term average value for each period.

Figure 3. Weekly precipitation totals for Arizona as estimated by the National Oceanic and Atmospheric Administration. Source: http://water.weather.gov/precip/
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.

CHILE

<table>
<thead>
<tr>
<th>Bonita</th>
<th>Last Week: Chile Water Use By Planting Date, Inches</th>
<th>This Week: Chile Water By Planting Date, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pivot Speed</td>
<td>Apr 1</td>
</tr>
<tr>
<td></td>
<td>1-Day, B</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>1 Day, C</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>2 Day, B</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>2 Day, C</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>3 Day, B</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>3 Day, C</td>
<td>1.0</td>
</tr>
</tbody>
</table>

B: Planted into bare soil; C: Planted into cover crop
### ALFALFA

<table>
<thead>
<tr>
<th>Cut On &gt;&gt;</th>
<th>Sep 2</th>
<th>Sep 9</th>
<th>Sep 16</th>
<th>Sep 23</th>
<th>Sep 9</th>
<th>Sep 16</th>
<th>Sep 23</th>
<th>Sep 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonita</td>
<td>1.2</td>
<td>1.2</td>
<td>0.7</td>
<td>0.7</td>
<td>1.6</td>
<td>1.5</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Bowie</td>
<td>1.1</td>
<td>1.1</td>
<td>0.6</td>
<td>0.6</td>
<td>1.5</td>
<td>1.4</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>San Simon</td>
<td>1.2</td>
<td>1.1</td>
<td>0.7</td>
<td>0.6</td>
<td>1.9</td>
<td>1.8</td>
<td>1.0</td>
<td>1.2</td>
</tr>
</tbody>
</table>

### NUTS & APPLES

<table>
<thead>
<tr>
<th>Location</th>
<th>Pecan Last Wk</th>
<th>Pecan This Wk</th>
<th>Pistachio Last Wk</th>
<th>Pistachio This Wk</th>
<th>Apples Last Wk</th>
<th>Apples This Wk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonita</td>
<td>1.2”</td>
<td>1.3”</td>
<td>0.9”</td>
<td>1.0”</td>
<td>1.0”</td>
<td>1.2”</td>
</tr>
<tr>
<td>Bowie</td>
<td>1.2”</td>
<td>1.5”</td>
<td>0.8”</td>
<td>0.9”</td>
<td>0.9”</td>
<td>1.2”</td>
</tr>
<tr>
<td>San Simon</td>
<td>1.4”</td>
<td>1.8”</td>
<td>0.9”</td>
<td>1.2”</td>
<td>0.9”</td>
<td>1.5”</td>
</tr>
</tbody>
</table>

### WINE GRAPES

<table>
<thead>
<tr>
<th>Location</th>
<th>Wine Grapes</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>6' Rows</td>
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<tr>
<td></td>
<td>Last Wk</td>
</tr>
<tr>
<td>Bonita</td>
<td>1.0”</td>
</tr>
<tr>
<td>Bowie</td>
<td>0.9”</td>
</tr>
<tr>
<td>San Simon</td>
<td>0.9”</td>
</tr>
</tbody>
</table>
# PIVOT RUN TIMES (Days/Week) FOR VARIOUS RATES OF CROP WATER USE

<table>
<thead>
<tr>
<th>Crop Use</th>
<th>Pumping Days Per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches/Week</td>
<td>500 GPM</td>
</tr>
<tr>
<td>0.35</td>
<td>1.9</td>
</tr>
<tr>
<td>0.70</td>
<td>3.7</td>
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<tr>
<td>1.05</td>
<td>5.6</td>
</tr>
<tr>
<td>1.40</td>
<td>7.0</td>
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<tr>
<td>1.75</td>
<td>7.0</td>
</tr>
<tr>
<td>2.10</td>
<td>7.0</td>
</tr>
<tr>
<td>2.45</td>
<td>7.0</td>
</tr>
<tr>
<td>2.80</td>
<td>7.0</td>
</tr>
</tbody>
</table>

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.