



# BLACKFOOT CHALLENGE WEEKLY IRRIGATION REPORT

Friday June 17, 2016

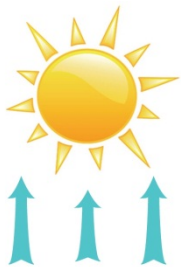
Weather this week included days with cool temps and a little rain mixed with warmer and sunnier days. Crop water use dropped below normal due to the cooler weather to about 1¼ inch for most crops. Showers and cloudy weather is supposed to start the next week and yield to sunnier skies and much warmer temperatures by Tuesday. Drought conditions are expected to develop by next month so dust off those drought management plans and be ready. The last page of this report is a summary of recommendations for the entire irrigation season.



## WEATHER - COOL TO START THEN MUCH WARMER

A wide array of weather hit Blackfoot croplands this week with 1/10<sup>th</sup> inch to 4/10<sup>th</sup> inch of rain at most sites plus some scattered larger amounts. Temperatures into the 30s were common for lows with a little frost and ice in spots. The coming week should start with showers and midweek clear to sunny skies and much warmer temperatures (80s).

The 30 day forecast indicates above normal temperatures and rainfall. The 90 forecast indicates above normal temperatures and below normal rainfall.



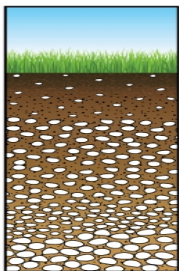
## CROP WATER USE-BELOW NORMAL LAST WEEK, NORMAL NEXT

Overall cooler-than-normal weather made crop water use drop below normal last week. It will increase to normal levels next week due warmer and drier weather conditions. Crop water use was much higher than average throughout April and early May then bounced below and above average for two weeks in May and June (chart page 3).

<b>WATER USE IN INCHES</b>	<b>LAST 7 DAYS</b>	<b>NEXT 7 DAYS<sup>1</sup></b>	<b>SEASON TOTAL<sup>2</sup></b>
<b>HAY CROPS</b>	<b>1.3</b>	<b>1.5</b> (1.3 - 1.7)	<b>8.6</b>
<b>PASTURE</b>	<b>1.2</b>	<b>1.4</b> (1.2 - 1.6)	<b>7.7</b>
<b>SPRING GRAINS - EARLY PLANTED</b>	<b>1.3</b>	<b>1.6</b> (1.2 - 1.4)	<b>5.3</b>
<b>WINTER WHEAT</b>	<b>1.4</b>	<b>1.6</b> (1.4 - 1.8)	<b>9.7</b>
<b>LAWNS</b>	<b>1.2</b>	<b>1.5</b> (1.3 - 1.7)	<b>8.1</b>

<sup>1</sup>Expected water use (range if weather becomes cooler or hotter than expected)

<sup>2</sup>Beginning April 1 – note in 2010-13 we started our seasonal total on May 1 but now include April



## SOIL MOISTURE - TIME TO FILL IT UP

Showers this last week contributed little to soil moisture. Soils that were not irrigated this week mostly lost about 1 ½ inches of water to crop use. This is why we irrigate so get to it.

## WEEKLY TIPS

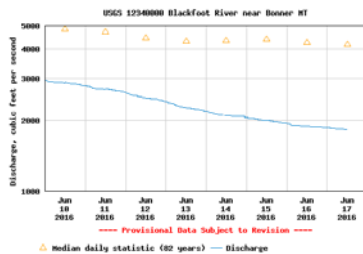
### Now Is the Month for All Good Irrigators to Pour It On

Yes – I sound like a *broken record* for those of you who know what a record is and what it sounded like with the needle skipping back off a scratch to repeat the same phrase again and again and again. But this is an especially important year to irrigate now in anticipation of drought conditions next month.

June is the main growing season for all local crops and the time to pour on the water! The best thing irrigators can do for their crops and the basin-wide water supply is to irrigate well now and be prepared to cut back when streamflows fall to critical levels. Check your soil moisture with a soil probe or shovel and if it looks and feels moist – you're good. If it's dusty and dry – keep irrigating. This applies to both sprinkler and flood systems. Then give it a few days and look again - you will be surprised how much water a crop can use and how quickly soils dry out!

### REMEMBER JUNE CROP WATER USE IS 6-8 INCHES!

### DROUGHT 2016!



The Blackfoot River at Bonner dropped like a rock this week – 1,000 cfs in the last 7 days. Today's flow is about 1,820 compared with 2,860 cfs last week. The average flow for this date is 4,870 cfs. The low flow for this date was 1,360 cfs in 1987 and the high was 13,600 cfs in 1899.

The May *Water Supply Outlook Report* has the May 1 snowpack at 78% of normal in the upper Clark Fork drainage. Blackfoot streamflows are predicted to be 72% of average for June-July and 75% of average for June-September. This forecast could change quickly if hot dry weather dominates as predicted by the 30 and 90 day weather forecasts. Right now the drought committee is planning for drought measure implementation so dust off those drought plans.

Here are some examples for reducing water use taken from our irrigation guide. The guide has more detail and is available at: <http://blackfootchallenge.org/Articles/wp-content/uploads/2013/06/BFIrrigationGuideFinalv3.0.pdf>

- Fill Up Your Soil - NOW - and Try to Keep it Near Full
- Know how much you apply – check with rain gauges or flow meter
- Apply More Water At Each Application if you can
- Improve Irrigation System Performance
- Concentrate your efforts on the first cutting and then relax
- Reduce irrigated acreage and irrigate that well

For further information contact Jennifer Schoonen, Blackfoot Challenge Water Steward, 406-360-6445 or Barry Dutton, Professional Soil Scientist, 406-240-7798 [barry@landandwaterconsulting.net](mailto:barry@landandwaterconsulting.net)

**BLACKFOOT 2016 GROWING SEASON WEEKLY RAINFALL & CROP WATER USE (INCHES OF WATER)**

	RAIN <sup>1</sup>	2016 WEEKLY POTENTIAL CROP WATER USE <sup>2</sup>						AVERAGE POTENTIAL CROP WATER USE <sup>3</sup>		
	RAIN	HAY CROPS <sup>4</sup>	PASTURE	SPRING GRAINS 5-1 START	SPRING GRAINS 5-15 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE HAY WATER USE	HOT WEEK HAY WATER USE	COOL WEEK HAY WATER USE
5/6/2016	0.20	0.80	0.70	0.25	0.25	0.90	0.70	0.50	0.80	0.20
5/13/2016	0.30	0.90	0.80	0.25	0.25	1.10	0.80	0.80	1.00	0.50
5/20/2016	0.01	1.00	0.90	0.50	0.25	1.10	1.00	1.00	1.10	0.70
5/27/2016	1.00	0.60	0.50	0.30	0.25	0.70	0.60	1.20	1.20	0.80
6/3/2016	0.20	1.00	0.90	0.70	0.40	1.10	1.00	1.30	1.30	0.90
6/10/2016	0.10	1.50	1.40	1.25	0.70	1.60	1.50	1.40	1.50	1.00
6/17/2016	0.20	1.25	1.20	1.30	0.70	1.40	1.20	1.50	1.70	1.10
6/24/2016								1.50	1.90	1.10
7/1/2016								1.50	2.00	1.20
7/8/2016								1.60	2.10	1.30
7/15/2016								1.60	2.00	1.20
7/22/2016								1.50	1.90	1.20
7/29/2016								1.50	2.20	1.10
8/5/2016								1.40	1.70	1.00
8/12/2016								1.20	1.50	0.90
8/19/2016								1.00	1.30	0.70
8/26/2016								0.80	1.00	0.50
9/2/2016								0.60	0.80	0.40
9/9/2016								0.60	0.70	0.30
9/16/2016								0.50	0.70	0.30
9/23/2016								0.40	0.60	0.20
9/30/2016								0.40	0.60	0.20
<b>TOTAL</b>	<b>2.71</b>	<b>8.55</b>	<b>7.65</b>	<b>5.30</b>	<b>3.55</b>	<b>9.65</b>	<b>8.05</b>	<b>24.80</b>	<b>31.10</b>	<b>17.30</b>

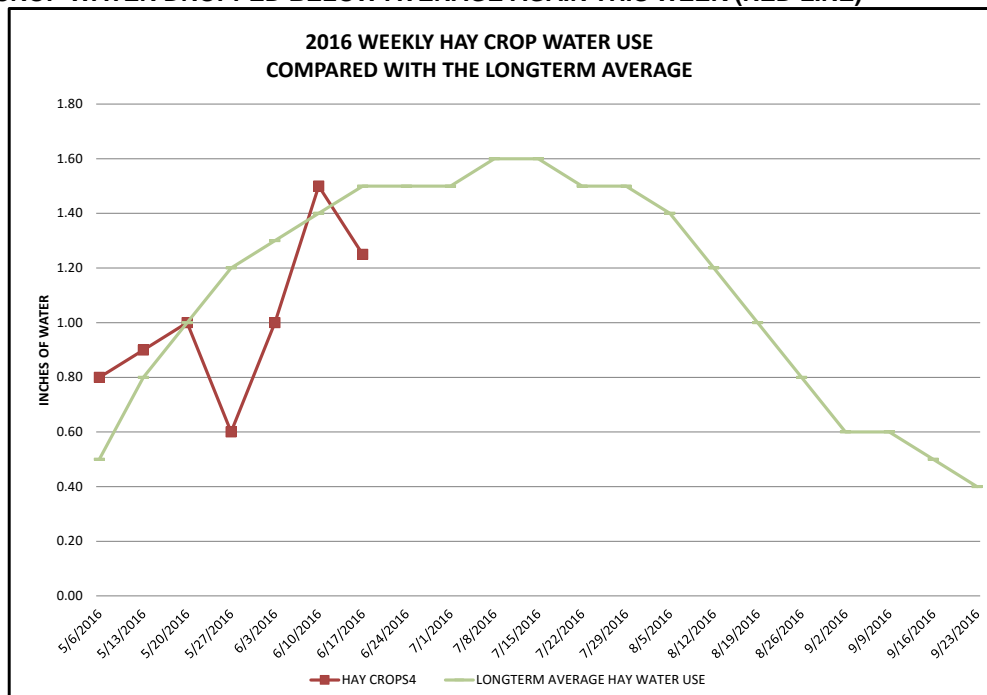
<sup>1</sup> Rainfall should be reduced to account for immediate evaporation from crop and soil surfaces (0.1-April,May and Sept, 0.15-June and August, 0.2-July)

<sup>2</sup> **This years** maximum water use by healthy crops that are well-fertilized and irrigated, disease and insect-free. Will vary slightly across the drainage.

<sup>3</sup> **Longterm average** water use for each crop each week based on long-term historic data.

<sup>4</sup> Hay Crop water use is reduced by approximately 2/3 the first week after cutting, 1/2 the second and 1/3 the third.

**CROP WATER DROPPED BELOW AVERAGE AGAIN THIS WEEK (RED LINE)**



## THE BLACKFOOT DRAINAGE IRRIGATION SEASON IN BRIEF

This is a summary of general activities and recommendations with more detail provided throughout our irrigation guide.

### APRIL – GET READY AND PLAN YOUR IRRIGATION STRATEGY!

- Get your irrigation system ready – perform maintenance and test system.
- Evaluate soil moisture conditions and weather predictions then plan for irrigation and drought if needed.



### MAY – CHECK SOIL MOISTURE & BE READY FOR UNUSUAL HEAT OR COLD!

- Check the soil moisture content at the start of growing season and fill up the soil to its water holding capacity during early irrigations (2-4 inches).
- Watch for dry soil conditions, especially with new plantings and apply water to ensure good germination and emergence.
- Irrigate deeply at least once early in the season to promote deep root growth.
- Apply 2-5 inches of irrigation to hay and pasture crops in May depending on weather. Apply 0-2 inches to spring grains and new plantings as needed based on weather and growth. Apply extra water to fill up the soil (2-4 in).

### JUNE – THIS IS THE TIME TO MAKE YOUR BIGGEST EFFORT SO POUR IT ON!

- Apply 6-8 inches of irrigation in June to hay and pasture crops and winter wheat depending on weather. Apply 5-8 inches to spring grains and new plantings as needed based on weather and growth.
- Consider irrigating deeply to fill up soil root zone and promote deep root growth.
- Be sure small grains are irrigated well during their critical periods of boot, bloom and early heading.



### JULY – POUR IT ON UNTIL HARVEST AND RETURN QUICKLY

- Apply 1 - 2 ½ inches of irrigation per week in July to all crops - depending on weather.
- Cutting is a critical stress period for hay crops, especially alfalfa so irrigate deeply to fill up the root zone before cutting then get back across the field quickly after cutting. Crop water use declines when hay is cut so this is a good opportunity to fill up the soil again. Irrigate at least once after cutting.
- Stop irrigating small grains at the milk to soft dough stage but be sure there are 1- 2 inches of soil moisture left at this stage to prevent kernels from shrinking.

### AUGUST- KEEP IRRIGATING SMALL GRAINS UNTIL KERNELS MATURE, BE DROUGHT AWARE!

- Apply 1 - 2 inches of irrigation per week in August to hay and pasture crops for full production depending on weather. Irrigate new plantings as needed.
- Many folks irrigate for pasture following their one hay cutting. Irrigate according to how much pasture you seek and with consideration for other water needs in the drainage, especially in drought years.
- Reduce river withdrawals by rotating systems and reducing the amount of irrigation at one time.



### SEPTEMBER – APPLY AS NEEDED/AVAILABLE & GET READY FOR SPRING!

- Apply ½ - 1 ½ inches of irrigation per week in September to hay and pasture crops for full production depending on weather. Irrigate new plantings as needed. Prepare the system for winter and an early start next spring.