

# BLACKFOOT CHALLENGE

## WEEKLY IRRIGATION REPORT

Friday June 14, 2019



Last week was warm and sunny with a little rain. Next week looks sunny but without the rain. Crops grew significantly and most used about 1 ½ inches of water over the week. Crop should use a little more next week. Soils not yet irrigated are mostly dry except for deep soil layers. Most folks have sprinklers running this week. Blackfoot River flow is dropping fast (critical levels this year?).

### NOW IS THE TIME FOR ALL GOOD IRRIGATORS TO MAKE HAY – SO POUR IT ON!

These reports, provide weekly summaries of weather, crop water use and soil moisture conditions plus tips for irrigation, soil health and crops. Hints for the entire irrigation season are on the last page. For other irrigation information please contact Jennifer Schoonen - Blackfoot River Steward (360-6445) or Barry Dutton – Soil and Irrigation Consultant (240-7798).

### WEATHER - SUNNY AND WARM - MAKE HAY WHILE THE SUN SHINES



Warm and sunny weather dominated this week with a few brief rainstorms that left up to ½ inch on some croplands. Next week looks warm and sunny with temperatures in the upper 70s then cooling off slightly by weeks end. The 30-day prediction is for above average temperatures and average rainfall. The 90-day prediction says above average temperatures and rainfall.

### CROP WATER USE - INCREASING FAST - TIME TO POUR IT ON!

Crop water use continues to increase with most crops using over 1 ½ inches this week. Early-planted spring grains have caught up with winter wheat and hay in crop water use. Water use will be high with the coming warm, sunny weather so pour it on while the sun shines. The table below provides a quick summary of crop water use last week and an estimate for next week. The table and chart on Page 2 summarize the entire irrigation season and compare it with average, hot and cool conditions so you can plan ahead.



<b>WATER USE IN INCHES</b>	<b>LAST 7 DAYS</b>	<b>NEXT 7 DAYS TOTAL<sup>1</sup></b>	<b>NEXT 7 DAYS DAILY AVE<sup>2</sup></b>	<b>SEASON TOTAL<sup>3</sup></b>
<b>HAY CROPS</b>	<b>1.5</b>	<b>1.6</b> (1.4 - 1.8)	<b>.23</b>	<b>8.0</b>
<b>PASTURE</b>	<b>1.4</b>	<b>1.5</b> (1.3 - 1.6)	<b>.21</b>	<b>7.4</b>
<b>SPRING GRAINS</b>	<b>1.5</b>	<b>1.7</b> (1.5 - 1.8)	<b>.24</b>	<b>3.6</b>
<b>WINTER WHEAT</b>	<b>1.7</b>	<b>1.8</b> (1.6 - 1.9)	<b>.26</b>	<b>8.6</b>
<b>LAWNS</b>	<b>1.5</b>	<b>1.6</b> (1.4 - 1.7)	<b>.23</b>	<b>8.0</b>

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

<sup>2</sup>Expected average daily water use over the next week (compare this with your soil moisture content)

<sup>3</sup>Beginning April 1

**BLACKFOOT 2019 GROWING SEASON WEEKLY RAINFALL & CROP WATER USE (INCHES OF WATER)**

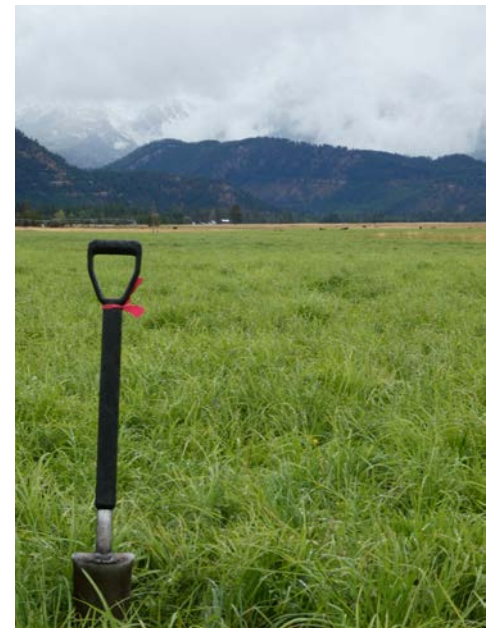
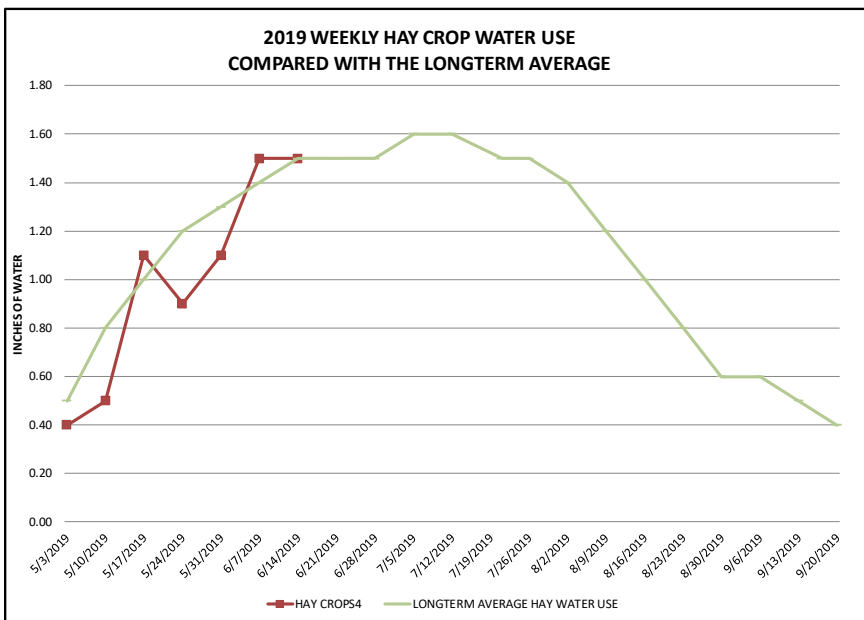
WEEK ENDING	RAIN <sup>1</sup>	2019 WEEKLY POTENTIAL CROP WATER USE <sup>2</sup>						AVERAGE POTENTIAL CROP WATER USE <sup>3</sup>		
	RAIN	HAY CROPS <sup>4</sup>	PASTURE	SPRING GRAINS 5-1 START	SPRING GRAINS 5-15 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE HAY WATER USE	HOT WEEK HAY WATER USE	COOL WEEK HAY WATER USE
5/3/2019	0.30	0.40	0.50	0.10	0.10	0.40	0.50	0.50	0.80	0.30
5/10/2019	0.30	0.50	0.40	0.10	0.10	0.50	0.50	0.80	1.00	0.50
5/17/2019	0.40	1.10	0.90	0.10	0.10	1.10	1.00	1.00	1.10	0.60
5/24/2019	0.10	0.90	0.80	0.20	0.10	1.00	0.90	1.20	1.30	0.80
5/31/2019	0.75	1.10	0.90	0.50	0.20	1.20	1.00	1.30	1.40	0.90
6/7/2019	0.30	1.50	1.30	1.00	0.60	1.60	1.40	1.40	1.50	1.00
6/14/2019	0.50	1.50	1.40	1.50	1.10	1.70	1.50	1.50	1.70	1.00
6/21/2019								1.50	1.90	1.10
6/28/2019								1.50	2.00	1.20
7/5/2019								1.60	2.10	1.30
7/12/2019								1.60	2.00	1.20
7/21/2019								1.50	2.00	1.20
7/26/2019								1.50	2.20	1.10
8/2/2019								1.40	1.70	1.00
8/9/2019								1.20	1.50	0.90
8/16/2019								1.00	1.30	0.70
8/23/2019								0.80	1.00	0.50
8/30/2019								0.60	0.80	0.40
9/6/2019								0.60	0.70	0.30
9/13/2019								0.50	0.70	0.30
9/20/2019								0.40	0.60	0.20
9/30/2019								0.40	0.60	0.20
<b>TOTAL</b>	<b>4.15</b>	<b>8.00</b>	<b>7.40</b>	<b>3.60</b>	<b>2.40</b>	<b>8.60</b>	<b>8.00</b>	<b>24.80</b>	<b>31.40</b>	<b>17.20</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 drops approximately 2/3 the first week after cutting, 1/2 the second and 1/3 the third.





## SOIL MOISTURE - GOING FAST

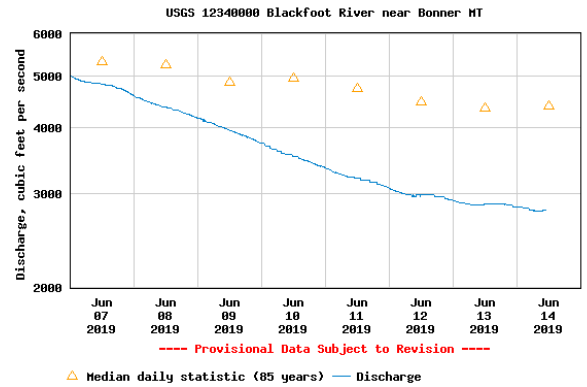
Soil moisture dropped by about 1 ½ inches this week or a little less if you had significant rain. The good news is that there is still a little deep moisture (2-3 foot zone) for those with alfalfa or deep grass root systems. At this point it will take 2-4 inches to fill up most hay and pasture root zones if you haven't yet irrigated.



## STREAMFLOWS

The Blackfoot river flow at Bonner today is **3080 CFS** which is slightly average (5060 CFS). The Highest flow on this date was 13,500 (1899) and the lowest was 1070 CFS (1987).

The snowpack is about gone late season drought is possible. Predictions for the next 30 days are for average rainfall and above average temperatures. The 90 days prediction says warmer and wetter than average.



## WHY DO THEY CALL IT A PLANT?

How many parents went to work at *The Plant*? According to author Dick Gregory's "Defining Moments in Black History" the black scientist George Washington Carver was much more than just an inventor of peanut products. Carver was a friend of Henry Ford and gave Ford a treatise on how plants work. Apparently, the process of roots collecting resources and feeding them into a single stem culminating in an ultimate fruit for harvest was the model Ford used to design his modern "Plant". This became the term for any modern production facility.



## POUR IT ON - NOW IS THE TIME TO MAKE HAY!

Experts from universities, extension services and our own fields agree that now is the most effective time to apply water to local crops. This is the main growth spurt crop plants have been waiting for following cooler May temps. Now is when crops put on the most production for the least water. This is also when water applications are more effective because more goes into the soil and less evaporates than during the peak heat. Plan to build deep soil moisture just before harvest to reduce harm from cutting. To do this apply more than the weekly crop water use.



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)

## THE BLACKFOOT DRAINAGE IRRIGATION SEASON IN BRIEF

This is a summary of general activities and recommendations for the whole season (more detail in the 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. Some years you better start up now.



### 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. Small grains harvested for seed are usually irrigated up to the milk to soft dough stage but be sure soil moisture remains to prevent kernel shriveling. Small grains for forage are often harvested earlier when plants are less dry and seeds soft.

### 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. Stop irrigating if you can.



### 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.