

# BLACKFOOT CHALLENGE

## WEEKLY IRRIGATION REPORT

Friday May 29, 2020



Most Blackfoot Valley croplands had only a trace of rain this week. Crop water use was again low at about 1 inch but will increase next week with warmer temperatures. Surface soil moisture is mostly depleted where irrigation has not begun. Irrigators seeking to boost soil moisture levels continued to apply more water than the weekly crop water use. Blackfoot River flows dropped to near average while the snowpack is still 147% of normal. Drought conditions and water restrictions could still happen this season due to the warm/dry weather expected in July-September.

We provide weekly summaries of weather, crop water use and soil moisture conditions as well as tips for irrigation, soil health and crop production. A condensed overview of suggestions for the entire irrigation season is presented on the last page of this report. Use it to look ahead and plan or to compare what you're doing now. If you would like other information please contact Jennifer Schoonen - Blackfoot River Steward (360-6445) or Barry Dutton – Soil and Irrigation Consultant (240-7798).



### WEATHER - WARMING

We had mostly cool temperatures that warmed throughout the week and only a trace of rain on most croplands. Temperatures varied widely this week with lows in the 30s and 40s and highs in the 50s to 70s. Next week looks warmer and drier with lows in the 40s and highs in the 70s. There may be a little rain over the weekend. The 30-day forecast says average temperatures and rainfall. The 90-day forecast says above average temperatures and below average rainfall.

### CROP WATER USE - LOW - INCREASING SLOWLY

Crop water use was low again this week except on a few warmer days. Note that at the start of the season, crop water use varies more across the drainage. Crop water use was below average at 1 inch or less for most crops. The table below provides a quick summary of crop water use this 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. This table and chart are updated weekly all season.

<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>1.0</b>	<b>1.1</b> (1.0 - 1.2)	<b>.16</b>	<b>4.5</b>
<b>PASTURE</b>	<b>0.8</b>	<b>1.0</b> (0.8 - 1.1)	<b>.14</b>	<b>4.0</b>
<b>SPRING GRAINS</b>	<b>0.7</b>	<b>0.9</b> (0.8 - 1.2)	<b>.13</b>	<b>1.3</b>
<b>WINTER WHEAT</b>	<b>1.2</b>	<b>1.4</b> (1.3 - 1.5)	<b>.20</b>	<b>4.9</b>
<b>LAWNS</b>	<b>0.9</b>	<b>1.0</b> (0.9 - 1.2)	<b>.14</b>	<b>4.5</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 – note in 2010-13 we started our seasonal total on May 1 but since include April

**BLACKFOOT 2020 GROWING SEASON WEEKLY RAINFALL & CROP WATER USE** (INCHES OF WATER)

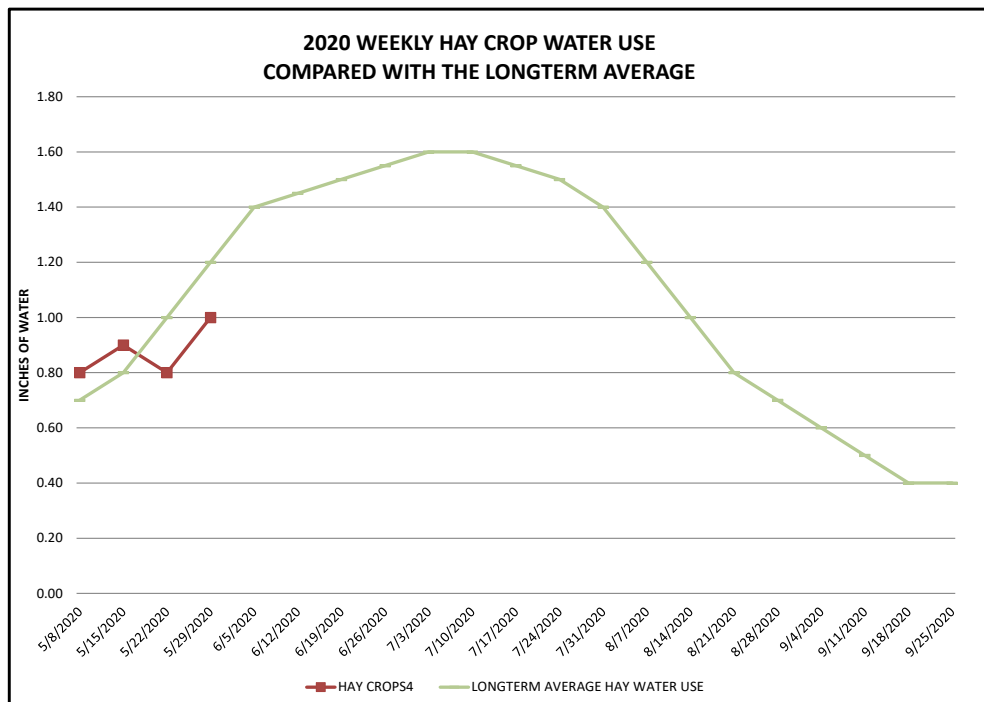
WEEK ENDING	RAIN <sup>1</sup>	2020 WEEKLY POTENTIAL CROP WATER USE <sup>2</sup>						AVERAGE WEEKLY CROP WATER USE <sup>3</sup>		
	RAIN	HAY CROPS <sup>4</sup>	PASTURE	SPRING GRAINS 5-1 START	SPRING GRAINS 5-15 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE HAY WATER USE	HOT WEEK HAY WATER USE	COOL WEEK HAY WATER USE
5/8/2020	0.01	0.80	0.70	0.10	0.10	0.90	0.90	0.70	1.00	0.30
5/15/2020	0.30	0.90	0.80	0.10	0.10	0.90	0.90	0.80	1.10	0.50
5/22/2020	1.25	0.80	0.70	0.30	0.20	0.80	0.80	1.00	1.20	0.60
5/29/2020	0.01	1.00	0.80	0.70	0.40	1.20	0.90	1.20	1.30	0.80
6/5/2020								1.40	1.50	1.00
6/12/2020								1.45	1.70	1.00
6/19/2020								1.50	1.90	1.10
6/26/2020								1.55	2.00	1.10
7/3/2020								1.60	2.10	1.30
7/10/2020								1.60	2.00	1.20
7/17/2020								1.55	2.00	1.20
7/24/2020								1.50	2.20	1.10
7/31/2020								1.40	2.20	1.10
8/7/2020								1.20	1.50	0.90
8/14/2020								1.00	1.30	0.70
8/21/2020								0.80	1.20	0.60
8/28/2020								0.70	1.10	0.50
9/4/2020								0.60	1.00	0.40
9/11/2020								0.50	0.90	0.40
9/18/2020								0.40	0.70	0.30
9/25/2020								0.40	0.70	0.30
<b>TOTAL</b>	<b>2.82</b>	<b>4.50</b>	<b>4.00</b>	<b>1.30</b>	<b>0.90</b>	<b>4.90</b>	<b>4.50</b>	<b>22.85</b>	<b>30.60</b>	<b>16.40</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)  
(This rainfall figure is an average across all Blackfoot croplands - use your own rain gauge for better accuracy)

<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 - DROPPING SLOWLY

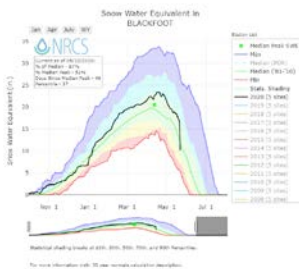
Soil moisture levels throughout the drainage are dropping slower than usual due to low crop water use. Surface soils were mostly dried out this week unless irrigated. Now is the easiest time to increase soil moisture where it has been depleted by applying more than weekly crop use.



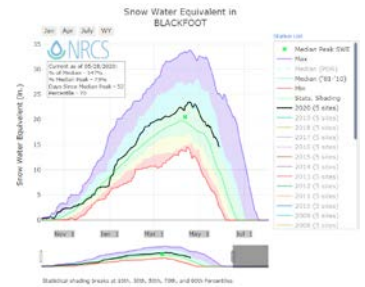
Soil near 100% of its water holding forms a ball when squeezed and leaves the hand moist. Water is visible on the surface of the soil and the hand as a shiny surface. Bouncing the soil in the hand usually brings water to the surface. Soil near 75% of its water holding capacity also forms a ball and leaves the hand moist but no actual water is visible on the hand or soil when bounced.

## WEEKLY TIPS

### We Cry "WOLF" Over Faulty Water Supply Graphs



Last week we reported a sudden drop in the snowpack based on the NRCS website (left graph) which showed the snowpack falling to 87% of normal. It turns out the NRCS data is posted before quality control checks. The graph was later corrected (right) and our snowpack is now listed as 147% of normal. The hot/dry 90-day forecast suggests water supply shortages are likely later in the season. Sorry for the heartburn.

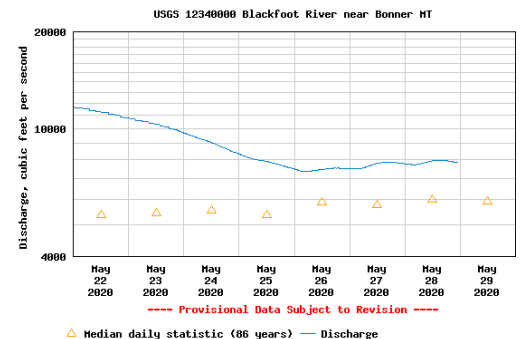


### Blackfoot River Flow Hits a Peak



**TODAY:** 7,840 CFS  
**AVERAGE:** 6,040  
**HIGHEST:** 13,200 (1948)  
**LOWEST:** 1,060 (1941)

River flow dropped this week due to less rainfall and slower melt of the snowpack and should continue to drop next week. Flows should remain near average through June but are likely to drop significantly later in the season.



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.



### 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.