

# BLACKFOOT CHALLENGE WEEKLY IRRIGATION REPORT

Friday June 7, 2024



Last week started cool and ended hot. Next week is going to be similar with a chance of rain to start, then sunny skies and warm temperatures. Crops have been slow to grow this year due to cool temperatures but are poised for a growth spurt this week. Streamflows got a boost from warmer weather melting out the last of the snowpack. Streamflows continue to be far below average and are unlikely to improve much this season. Once again, we will provide weekly summaries of weather and crop water use along with predictions for the upcoming week. Please send us any ideas or questions on these or other subjects. We will respond and share them with everyone.

## WEATHER - MOSTLY WARM AND SUNNY

Most local croplands had a trace of rain this last week and a warming trend. Next week will start with a slight chance of rain then warm, sunny skies. Highs will be in the 70s and 80s with lows in the 40s and 50s. The 30-day and 90-day forecasts say **below average rainfall and above average temperatures.**



*Your own rain gauge is your best source of rainfall information.*

## CROP WATER USE - MODERATE LAST WEEK AND HIGHER NEXT

Crop water use increased slightly last week with little rain and warmer temperatures. Most crops used over an inch of water. Next week crop water use will be higher due to much warmer temperatures. Despite a low snowpack we could still see some good production this year, especially from the first cutting of hay crops.

<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>1.2</b>	<b>1.3</b>	<b>.19</b>	<b>4.5</b>
<b>PASTURE</b>	<b>1.0</b>	<b>1.1</b>	<b>.16</b>	<b>4.3</b>
<b>SPRING GRAINS</b>	<b>0.6</b>	<b>0.7</b>	<b>.10</b>	<b>1.3</b>
<b>WINTER WHEAT</b>	<b>1.3</b>	<b>1.4</b>	<b>.20</b>	<b>5.2</b>
<b>LAWNS</b>	<b>1.2</b>	<b>1.3</b>	<b>.19</b>	<b>5.2</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

The table on Page 1 provides a quick summary of crop water use this last week and an estimate for next week. The table and chart below summarize the entire irrigation season and compare it with average, hot and cool conditions so you can plan ahead. This table and chart will be updated weekly all season.

**BLACKFOOT 2024 GROWING SEASON WEEKLY RAINFALL & CROP WATER USE** (INCHES OF WATER)

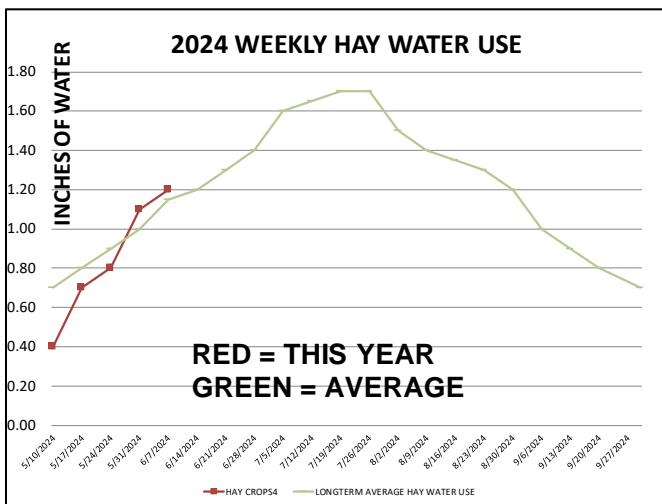
WEEK ENDING	RAIN <sup>1</sup>	2024 WEEKLY POTENTIAL CROP WATER USE <sup>2</sup>						AVERAGE WEEKLY CROP WATER USE <sup>3</sup>		
	RAIN	HAY CROPS <sup>4</sup>	PASTURE	SPRING GRAINS 5-1 START	SPRING GRAINS 5-15 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE HAY WATER USE	HOT WEEK HAY WATER USE	COOL WEEK HAY WATER USE
APRIL	0.50	0.25	0.25			0.25	0.25			
5/10/2024	0.50	0.40	0.50			0.50	0.60	0.70	1.00	0.40
5/17/2024	0.10	0.70	0.80			1.00	1.00	0.80	1.10	0.60
5/24/2024	1.00	0.80	0.80	0.30	0.20	0.90	0.90	0.90	1.20	0.70
5/31/2024	0.50	1.10	0.90	0.50	0.40	1.20	1.20	1.00	1.30	0.70
6/7/2024	0.10	1.20	1.00	0.70	0.50	1.30	1.20	1.15	1.50	0.80
6/14/2024								1.20	1.70	0.80
6/21/2024								1.30	1.90	0.90
6/28/2024								1.40	2.00	1.00
7/5/2024								1.60	2.10	1.10
7/12/2024								1.65	2.20	1.10
7/19/2024								1.70	2.20	1.10
7/26/2024								1.70	2.20	1.10
8/2/2024								1.50	2.20	1.00
8/9/2024								1.40	2.20	1.00
8/16/2024								1.35	2.00	0.90
8/23/2024								1.30	2.00	0.90
8/30/2024								1.20	1.80	0.90
9/6/2024								1.00	1.40	0.60
9/13/2024								0.90	1.40	0.50
9/20/2024								0.80	1.20	0.50
9/30/2024								0.70	1.00	0.40
TOTAL	2.20	4.45	4.25	1.50	1.10	5.15	5.15	25.25	35.60	17.00

<sup>1</sup> Average across watershed (50-80% gets to the crop depending on irrigation method, weather, evaporation from crop and soil surfaces)

<sup>2</sup> This years potential water use by healthy crops that are well-fertilized and irrigated, disease and insect-free. Varies across watershed.

<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 from these figures approximately 2/3 the first week after cutting, 1/2 the second and 1/3 the third.



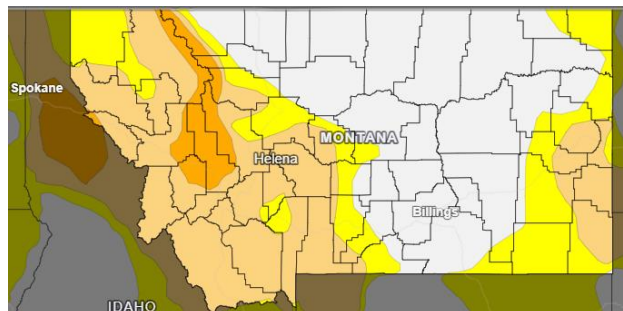
## SOIL MOISTURE - NOW IS THE TIME TO KEEP IT HIGH

With almost no rainfall last week, cropland soils continued to dry out throughout the drainage unless irrigated. Most crops showed significant growth but will really take off this week due to warmer, sunnier weather. Both surface and subsoil moisture are now decreasing steadily. A little rain is predicted early next week but will not be as much as crop water use so soil moisture levels will continue to drop without irrigation. June is the time to “make hay” – when your irrigation is most effective, and crops are growing fastest so **Pour It On!**

## WEEKLY TIPS

### SNOWPACK AND WATER SUPPLY

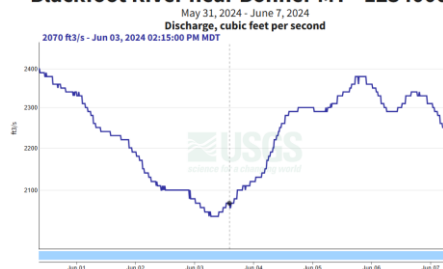
The Blackfoot watershed snowpack has about melted out completely. Reservoir storage is at 77% (Nevada Creek Reservoir). Blackfoot river flows are still predicted to be below average for the rest of this season. We are still listed as in *Severe Drought* conditions throughout the Blackfoot watershed (orange color on map at right).



### STREAMFLOW

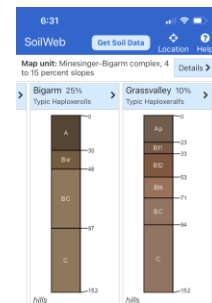
The Blackfoot River flow at Bonner came up with warm temperatures this week but not as high as the peak in mid-May. Flow at Bonner is now 2,240 CFS. This is again less than half of the average for this date (5,870 CFS). The highest flow on this date was 14,100 CFS in 2011 while the lowest flow was 1,340 CFS in 1987. Weather predictions for the next 30 days are for average temperatures and rainfall so streamflows are expected to remain well below average.

Blackfoot River near Bonner MT - 12340000



### NEW SOIL SURVEY APP PROVIDES INSTANT INFORMATION

A new app lets you access USDA-NRCS soil survey information for any location in the country using your smart phone or tablet. The app is called SOILWEB and you can download it free at the Apple store or other app sources. SOILWEB identifies the soil mapped at your location and provides important soil characteristics from soil texture and water holding capacity to rock and root content. Management interpretations for a wide variety of uses can also be viewed from irrigation to roads to septic systems and many more. Remember whenever viewing soil survey information that it usually provides only a *general idea of soil distribution* across the landscape. The soil at your specific site may be different and so it is wise to check with a shovel probe or backhoe.



For further information contact Clancy Jandreau, Blackfoot Challenge Water Steward, 406-304-5423 or Barry Dutton, 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.