

# BLACKFOOT CHALLENGE WEEKLY IRRIGATION REPORT

Friday May 24, 2024



It's hard to tell if it's winter or spring some days as snow continues to fall across the watershed. Next week looks cool again with a chance of rain. Crops are equally confused with growth spurts on warmer days and slow growth when cold. Soil moisture and streamflows got a boost from 1 to 1½ inches of rain/snow across most of the watershed. The snowpack and streamflows continue to be far below average. 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 - COOLER AGAIN NEXT WEEK

Most local croplands had about an inch of rain this last week with some reporting 1½ inches. The cool temperatures of last week will continue next with highs in the 60s and low 70s and with lows in the 30s and 40s. 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 NEXT

Crop water use did not change much this last week due to cool temperatures and rain. Most crops used a little less than an inch which was about how much rain we had. Next week crop water use should be slightly higher due to slightly warmer temperatures and only a chance of rain.

<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>0.8</b>	<b>1.0</b>	.14	2.2
<b>PASTURE</b>	<b>0.8</b>	<b>0.9</b>	.13	2.4
<b>SPRING GRAINS</b>	<b>0.3</b>	<b>0.4</b>	.06	0.0
<b>WINTER WHEAT</b>	<b>0.9</b>	<b>1.2</b>	.17	2.7
<b>LAWNS</b>	<b>0.9</b>	<b>0.9</b>	.13	2.8

<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)

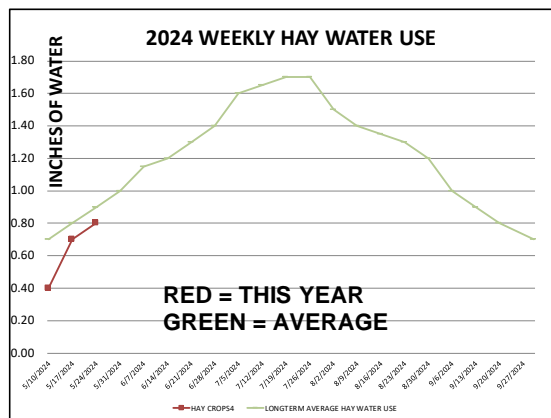
WEEK ENDING	RAIN <sup>1</sup>	2024 WEEKLY POTENTIAL CROP WATER USE <sup>2</sup>						AVERAGE WEEKLY CROP WATER USE <sup>3</sup>		
	RAIN	HAY CROPS <sup>4</sup>	PASTURE	SPRING GRAINS 5-1 START	SPRING GRAINS 5-15 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE HAY WATER USE	HOT WEEK HAY WATER USE	COOL WEEK HAY 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								1.00	1.30	0.70
6/7/2024								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
<b>TOTAL</b>	<b>1.60</b>	<b>2.15</b>	<b>2.35</b>	<b>0.30</b>	<b>0.20</b>	<b>2.65</b>	<b>2.75</b>	<b>25.25</b>	<b>35.60</b>	<b>17.00</b>

<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 - ABOUT THE SAME THIS WEEK!

Soil moisture levels throughout the drainage were about the same as last week unless irrigated. The rainfall we had was equal to or slightly more than crop water use for the week. Crops slowed growth with cool temperatures and some snow. Subsoil moisture didn't change much and is still quite good. A chance of rain is predicted throughout the coming week but will likely not be as much as crop water use so soil moisture levels are likely to drop without irrigation. Next week's weather (cool and moist) will be good conditions for filling up your soil to its water-holding capacity.

## WEEKLY TIPS

### SNOWPACK AND WATER SUPPLY

The Blackfoot watershed is at about 58% of normal snowpack. Reservoir storage is below average. Blackfoot river flows are still predicted to be below average throughout this season. Irrigation districts across the region have indicated there will be less water for distribution this year. We are currently listed as in *Severe Drought* conditions throughout the Blackfoot watershed.



### STREAMFLOW

The Blackfoot river flow at Bonner was up to start the week but dropped due to cool temperatures and is now at about 2,120 CFS. This is less than half of the average for this date (5,960 CFS). The highest flow for this date was 13,000 CFS in 1948 while the lowest flow was 975 CFS in 1941. Weather predictions for the next 30 days are for below average temperatures and rainfall so streamflows are expected to remain well below average.

**Blackfoot River near Bonner MT - 12340000**



### THE GOOD WORD IS SPREADING

The Blackfoot Challenge tries to be an inspiration for good management of our natural resources. Water management and irrigation has been an integral part of the Challenge program for decades. Recently the Confederated Salish and Kootenai Tribes, Montana Extension Service and DNRC have begun to initiate an irrigation education program on reservation lands including workshops and soil moisture sensor installations. These activities are part of the Water Rights Compact signed into law in recent years. The Challenge soil and irrigation consultant Barry Dutton has been helping with this effort by sharing knowledge and experiences from the Blackfoot watershed. We have some of the best irrigators in Montana and their expertise will help others make similar improvements in water management and crop production. Thanks for doing a great job and sharing your practices for the benefit of all!

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.