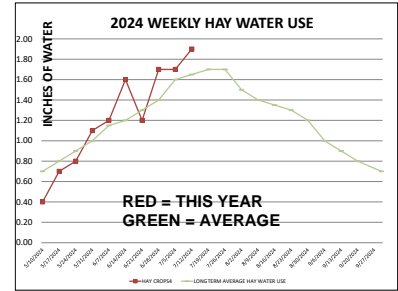


# BLACKFOOT CHALLENGE WEEKLY IRRIGATION REPORT

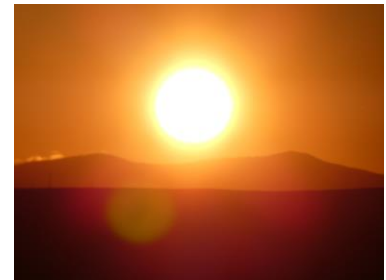
Friday July 12, 2024



Last week was HOT with no rain. Next week will again be very hot (high 90s) and sunny with no rain. Crops are using water at their peak rate of the season so far – some approaching **1/3 inch per day and over 2 inches per week!** Next week mature crops will use about the same amount of water except cut hay. Hay water use is reduced by 2/3 the first week after cutting and 1/3 the second week. Blackfoot River flows dropped below 700 CFS this week **triggering the drought plan**. Temperatures also exceeded trigger levels and FWP has **started Hoot Owl Restrictions**. Flows may get some help as irrigators shut off for haying and drought plans are implemented. 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: HOT AND DRY!

It was just plain HOT last week with a trace of rain or none on local croplands. Next week will be almost as hot so keep lots of water on hand and find shade when you can. Highs next week will be the high 90s and lows in the 50s. Some sites could reach 100F again. Cut hay will be quick to cure. The 30-day and 90-day forecasts still say **below average rainfall and above average temperatures**.



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

## CROP WATER USE - HIGHEST THIS SEASON

This last week crop water use was the highest of the year so far and next week should be similar due to extremely hot temperatures and no rain. Most crops used about 2 inches of water except for cut hay. Despite a low snowpack, we had some well-timed rains and cool temperatures early in the season and first hay cuttings are looking very good. Remember, hay water use is reduced from its potential below by 2/3 the first week after cutting and 1/3 the second week.

<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>1.9</b>	<b>1.9</b>	<b>.27</b>	<b>12.6</b>
<b>PASTURE</b>	<b>1.6</b>	<b>1.6</b>	<b>.23</b>	<b>11.2</b>
<b>SPRING GRAINS</b>	<b>2.1</b>	<b>2.1</b>	<b>.30</b>	<b>9.0</b>
<b>WINTER WHEAT</b>	<b>2.1</b>	<b>2.2</b>	<b>.31</b>	<b>14.0</b>
<b>LAWNS</b>	<b>1.8</b>	<b>1.8</b>	<b>.26</b>	<b>12.9</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)**

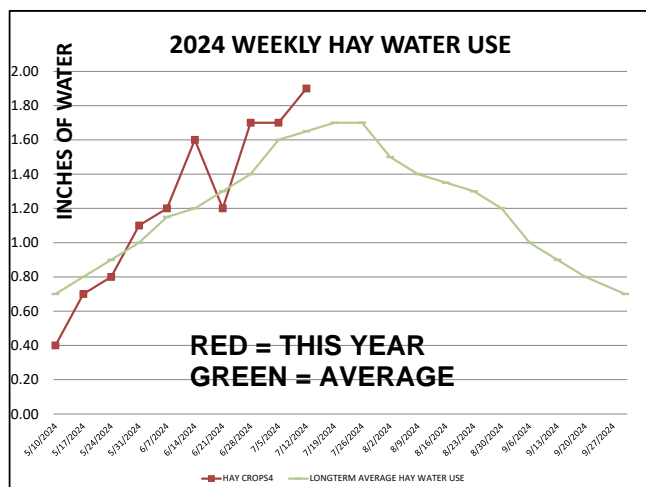
WEEK ENDING	RAIN <sup>1</sup>	2024 WEEKLY POTENTIAL CROP WATER USE <sup>2</sup>						AVERAGE WEEKLY CROP WATER USE <sup>3</sup>		
	RAIN	HAY CROPS <sup>4</sup>	PASTURE	SPRING GRAINS 5-1 START	SPRING GRAINS 5-15 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE HAY WATER USE	HOT WEEK HAY WATER USE	COOL WEEK HAY 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	0.01	1.60	1.40	1.10	0.90	1.70	1.50	1.20	1.70	0.80
6/21/2024	0.25	1.20	1.10	1.00	0.90	1.30	1.20	1.30	1.90	0.90
6/28/2024	0.10	1.70	1.40	1.60	1.40	1.80	1.60	1.40	2.00	1.00
7/5/2024	0.01	1.70	1.40	1.70	1.70	1.90	1.60	1.60	2.10	1.10
7/12/2024	0.01	1.90	1.60	2.10	2.10	2.10	1.80	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>2.58</b>	<b>12.55</b>	<b>11.15</b>	<b>9.00</b>	<b>8.10</b>	<b>13.95</b>	<b>12.85</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.



## THE GOOD NEWS: CROP PRODUCTION LOOKING GOOD!

The final numbers are not in yet, but my observations throughout the watershed are that this first cutting is one of the best despite the low snowpack we had. Cool temperatures and some well-timed rainstorms have made irrigation very effective this year (most of the applied irrigation getting into the soil and contributing to production with little loss to evaporation).



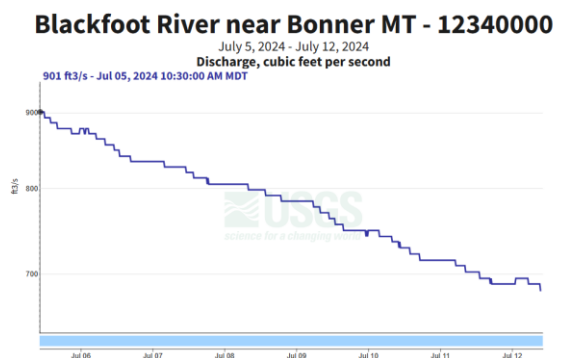
Irrigation effectiveness has dropped dramatically in the past week due to no rain, extremely hot temperatures and some wind. Check your irrigation closely to ensure that you are actually getting water into the soil. Those with soil moisture monitors can check their readings before and after irrigation. Others can use a shovel or soil probe.

Be sure to check the area irrigated during the hot afternoon to see if enough water penetrated the soil. Consider varying start times or start locations to change this area from one pass to the next and avoid stressing the same part of the field each time you irrigate.

Remember that it takes a lot of water to recharge dry soil after cutting. When its hot and dry, crop water use and evaporation are very high. It can take 3-4 inches of applied water to fill just the surface foot of soil to its water holding capacity. Checking after irrigation is the only way to be sure you have applied enough.

## THE BAD NEWS: STREAMFLOWS VERY LOW & TEMPERATURES HIGH

Blackfoot River flows continued a downward trend this week and dropped below the 700 CFS level which triggers drought plan implementation. Flow at Bonner is now 689 CFS. This is less than 1/3 of the average for this date (2,020 CFS). The highest flow on this date was 8,550 CFS in 1899 while the lowest flow was 553 CFS in 1977. Haying may provide a brief respite as irrigators turn off for a short period, and some for the rest of the season. Weather predictions for the next 30 days are for average temperatures and rainfall so streamflows are expected to remain well below average.



## STREAMFLOWS AND WATER TEMPS TRIGGER DROUGHT ACTIONS

Blackfoot River streamflows fell below the initial trigger level of 700 CFS this week. Irrigators with drought plans are asked to implement their plans and prepare for even lower flows in the near future. Streamflow at Bonner is likely to reach 600 CFS in the coming week with hot/dry weather predicted. FWP has begun issuing notices to junior irrigators without drought plans and Hoot Owl restrictions go into effect today on the Blackfoot River below the Cedar Meadow Fishing Access Site. The U.S. Drought Monitor still puts us in the **Severe Drought** Category.

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.