

BLACKFOOT CHALLENGE WEEKLY IRRIGATION REPORT



Friday June 28, 2024

Last week was mostly hot and dry then ended cooler with a little rain. Next week will be a mix of showers and sun. Crops had a growth spurt this week with warmer conditions and used over 1½ inches of water. Crop water use should be similar next week. Streamflows continue to be 1/3 of average and are unlikely to improve this season. The Drought Committee is now meeting regularly, and **we have the potential to see some of the lowest flows on record** this year. 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. Have a great independence day!

WEATHER - MIX OF SHOWERS AND SUN

It felt quite hot for most of this week after the cool weather we were having. The week ended cooler with scattered rain showers. Most local croplands had a trace to ¼ inch of rain last week, but a few spots had almost ½ inch. We may get a similar amount early next week which will have a mix of showers and sun. Highs will be in the 70s and 80s and lows in the 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 - HIGH LAST WEEK AND NEXT

Crop water was above average last week due to much warmer temperatures. Most crops used slightly more than 1½ **inches of water**. Next week crop water use will be similar. Despite a low snowpack, we have had some well-timed rains and cool temperatures which should result in good production this year, especially from the first cutting of hay crops.

WATER USE IN INCHES	LAST 7 DAYS	NEXT 7 DAYS TOTAL¹	NEXT 7 DAYS DAILY AVE²	SEASON TOTAL³
HAY CROPS	1.7	1.7	.23	9.0
PASTURE	1.4	1.4	.19	8.2
SPRING GRAINS	1.6	1.6	.23	5.2
WINTER WHEAT	1.8	1.8	.26	10.0
LAWNS	1.6	1.6	.21	9.5

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

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

³Beginning 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)

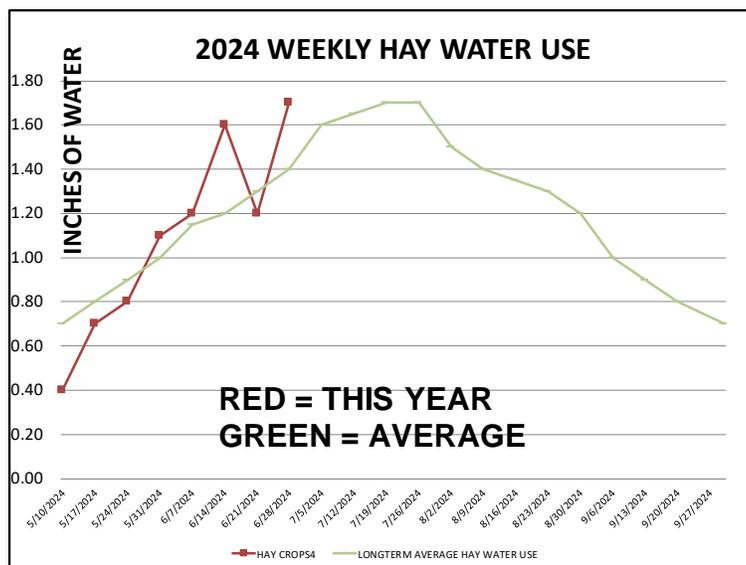
WEEK ENDING	RAIN ¹	2024 WEEKLY POTENTIAL CROP WATER USE ²						AVERAGE WEEKLY CROP WATER USE ³		
	RAIN	HAY CROPS ⁴	PASTURE	SPRING GRAINS 5-1 START	SPRING GRAINS 5-15 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE HAY WATER USE	HOT WEEK HAY WATER USE	COOL WEEK HAY WATER USE
APRIL	0.50	0.25	0.25			0.25	0.25			
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								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	2.56	8.95	8.15	5.20	4.30	9.95	9.45	25.25	35.60	17.00

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

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

³ Longterm average water use for each crop each week based on long-term historic data.

⁴ 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.



WE ARE LUCKY TO HAVE SIMPLE INFRASTRUCTURE

The saying “Keep It Simple Stupid” applies as well to irrigation as anything. We are fortunate in the Blackfoot Watershed that we don’t rely on complex infrastructure to supply our water. At aging irrigation projects across the nation age, we are seeing more and more people losing water to leaks, blowouts, dam failures and other calamities. Most Blackfoot irrigators take water directly from streams or from ditch systems they maintain themselves. Just one more reason to be cheerful and thankful for the place we live and work.



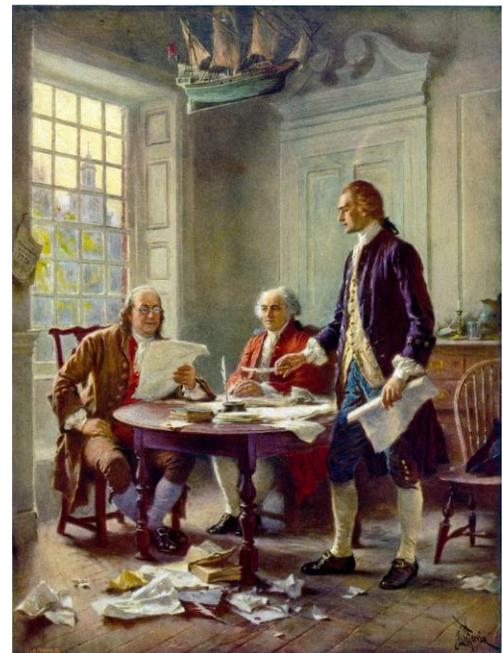
St Mary Canal Siphon Blowout 2024

DECLARATION OF IRRIGATION

When in the course of human events, it becomes necessary for one people to dissolve the reliance on rainfall and irrigate crops, it impels us to work together to share water for the benefit of all.

We hold these truths to be self-evident that all water users are created equal, and they are endowed by their creator with certain inalienable water rights and among these are the right to fish, float and irrigate.

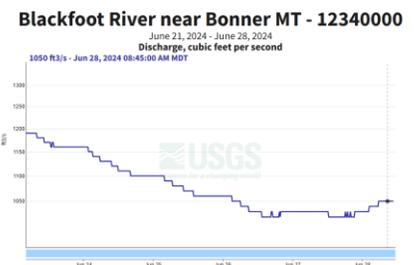
To secure these rights, governments are instituted among men, deriving their power from the consent of the water uses. When governments fail to meet the needs of all, it falls on the people to work together to share the resources bestowed upon us. With an independent spirit and a shared respect for our fellow man, we will grow excellent crops, foster prolific fisheries and endow floaters with enjoyable recreation in one of the greatest watersheds on earth. Have a wonderful 4th of July holiday!



Founding Fathers Discuss Water

STREAMFLOW - TAKING A NOSEDIVE

Blackfoot River flows continued a downward trend this week with a slight uptick due to rain on Thursday. Flow at Bonner is now 1,050 CFS. This is only about 1/3 of the average for this date (3,270 CFS). The highest flow on this date was 12,100 CFS in 1899 while the lowest flow was 660 CFS in 1977. Weather predictions for the next 30 days are for average temperatures and rainfall so streamflows are expected to remain well below average.



For further information contact Clancy Jandreau, Blackfoot Challenge Water Steward, 406-304-5423 or Barry Dutton, Soil Scientist, 406-240-7798 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.