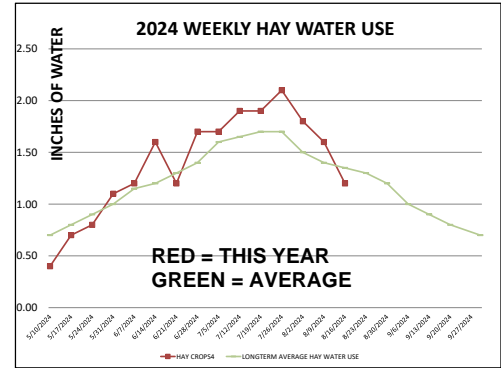


BLACKFOOT CHALLENGE WEEKLY IRRIGATION REPORT

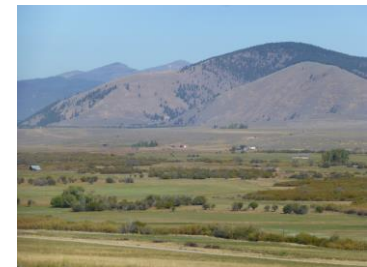
Friday August 16, 2024



We had warm temperatures and scattered thunderstorms with a little rain this week! Next week will be warm and sunny. **Crop water dropped below average for the first time in 7 weeks.** Most crops used about 1 inch of water and will use about the same next week. **Blackfoot River flows remain below 500 CFS this week and continue to be far below normal.** Flows have had some help from irrigators implementing drought plans and from rain. Driving throughout the watershed lately it's obvious that irrigators are sacrificing peak crop production to help maintain streamflows - thanks to all those irrigators! Please send us any ideas or questions to include with these reports. We will respond and share them with everyone.

WEATHER: SLIGHTLY COOLER NEXT WEEK!

It was warm this week with a little scattered rain. Most croplands in the watershed had less than ¼ inch of rain. Next week will be warm and sunny. High temps next week will be the 80s and lows in the 40s. The 30-day and 90-day forecasts still predict **below average rainfall and above average temperatures.**



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

CROP WATER USE - FINALLY BELOW AVERAGE

After 7 weeks of above-average crop water use, cooler temperatures finally dropped it below average (graphs on page 1 & 2). This ends the longest period of above-average crop water use in the 15 years of our weekly irrigation reports. **Most crops used about 1 inch of water this week and will use about the same next week.**

WATER USE IN INCHES	LAST 7 DAYS	NEXT 7 DAYS TOTAL¹	NEXT 7 DAYS DAILY AVE²	SEASON TOTAL³
HAY CROPS	1.2	1.2	.17	21.2
PASTURE	1.0	1.0	.14	18.4
SPRING GRAINS	1.2	0.8	.11	17.6
WINTER WHEAT	0.2	0.0	.00	20.1
LAWNS	1.2	1.2	.17	21.1

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.

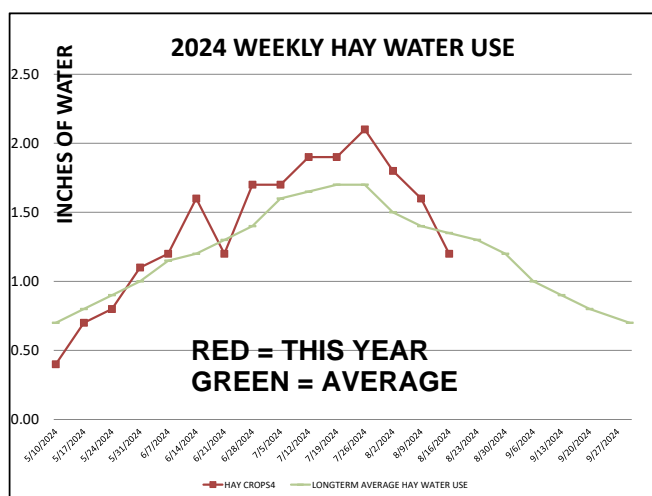
BLACKFOOT 2024 GROWING SEASON WEEKLY RAINFALL & CROP WATER USE (INCHES OF WATER)										
WEEK ENDING	RAIN ¹	2024 WEEKLY POTENTIAL CROP WATER USE ²						AVERAGE WEEKLY CROP WATER USE ³		
	RAIN	HAY CROPS ⁴	PASTURE	SPRING GRAINS 5-1 START	SPRING GRAINS 5-15 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE HAY 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	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	0.00	1.90	1.60	2.10	2.10	2.10	1.80	1.70	2.20	1.10
7/26/2024	0.25	2.10	1.80	2.50	2.50	1.80	2.00	1.70	2.20	1.10
8/2/2024	0.25	1.80	1.50	1.80	2.10	1.30	1.70	1.50	2.20	1.00
8/9/2024	0.50	1.60	1.30	1.00	1.60	0.70	1.50	1.40	2.20	1.00
8/16/2024	0.10	1.20	1.00	0.50	1.20	0.20	1.20	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	3.68	21.15	18.35	16.90	17.60	20.05	21.05	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.



STREAMFLOWS STILL VERY LOW

Blackfoot River flows continued to be far below average this week with small bumps upward from scattered rain storms. Today the flow at Bonner is 427 CFS compared to an average of 782 CFS for this date. The highest flow on this date was 1,720 CFS in 1899 while the lowest was 374 CFS in 1988. Weather predictions for the next 30 days are for above average temperatures and rainfall so streamflows will continue well below average.

Blackfoot River near Bonner MT - 12340000



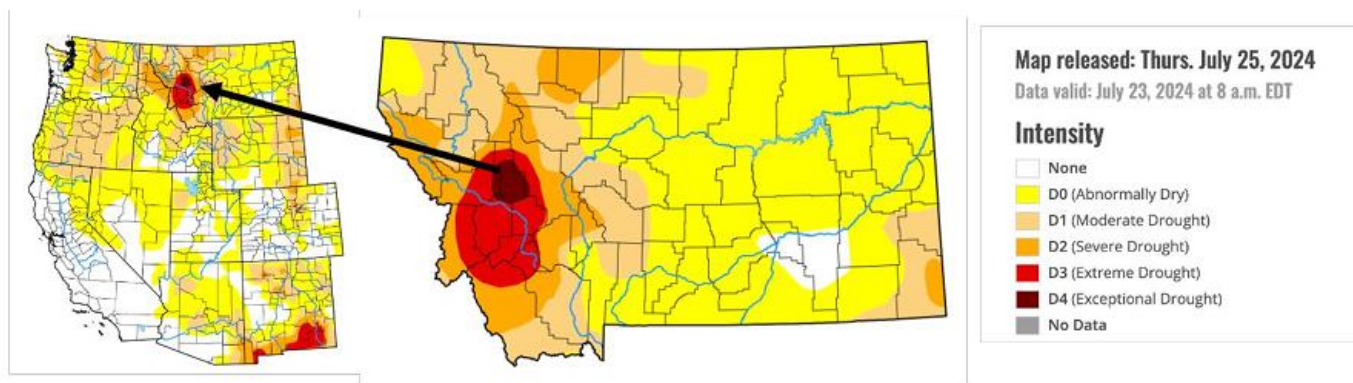
PAYMENTS FOR WATER CONSERVATION

Farmers in the Imperial Irrigation District of southern California are being offered \$300 per acre-foot of water this year to temporarily reduce irrigation in August and September. This water will be used by urban folks in the Los Angeles area. Farmers are also paid \$430 per acre-foot to implement permanent conservation measures. This program is expected to conserve 700,000 acre-feet through 2026. Funds for this program are provided by the Inflation Reduction Act. Almost half of the water used from the Colorado River goes to alfalfa irrigation. The Imperial Irrigation District is the largest water user and has been the focus of improving water use efficiency for decades. They have reduced water use by lining canals and ditches, improving control systems, installing soil moisture monitoring and practicing irrigation scheduling. Evaporation from canals and reservoirs is the second largest use of diverted water and recent proposals are considering covering the 80-mile long All American Canal (pictured above). One option is covering the canal with solar panels to conserve evaporation and produce energy. These measures are likely to come to Blackfoot irrigators in the future as downstream water use increases.



DROUGHT

The Blackfoot watershed remains the only place in the west that the U.S. Drought Monitor now lists as in **EXCEPTIONAL DROUGHT (D4)**.



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, streamflows and drought conditions.
- 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- 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.