

BLACKFOOT CHALLENGE

WEEKLY IRRIGATION REPORT

Friday September 17, 2021



It was another week of sunny, rain-less weather with a little smoke. Some rain over the weekend will be followed by cooler temperatures and frost. There may be a little more rain by mid-week. Mild weather last week resulted in about 1 inch of crop water use but this will drop next week.

Drought Response measures appear to be working to slow the downward trend in stream flows. Blackfoot River low flows have triggered the Challenge Drought Response Plan. Participating irrigators must follow their individual Drought Response Plans to reduce water use. FWP has made call on junior water right users throughout the drainage who do not have a Drought Response Plan. Irrigators with senior water rights have also made call on junior rights across the drainage. We thank all irrigators who have reduced water use and encourage everyone to keep up this shared sacrifice until rain and cooler temperatures bring up stream flows.



WEATHER-TURNING COOLER WITH A LITTLE RAIN

It was another mild, sunny week throughout the drainage. No rain at all again focused concern on river flows. Rain is predicted over the weekend and again mid-week. Temperatures will be much cooler with highs in the 50s to 70s and lows in the 20s and 30s. The 30-day forecast says below average rainfall and above average temperatures. The 90-day forecast says above average rainfall and average temperatures.

CROP WATER USE - ABOVE AVERAGE LAST WEEK AND BELOW NEXT

This past week crop water use was above average due to warm temperatures and no rain. **Most crops used about 1 inch of water but will use less next week with cooler temperatures.** The table below provides a quick summary of crop water use this last week and an estimate for next week.

WATER USE IN INCHES	LAST 7 DAYS	NEXT 7 DAYS TOTAL¹	NEXT 7 DAYS DAILY AVE²	SEASON TOTAL³
HAY CROPS	1.2	0.9	.13	27.2
PASTURE	0.9	0.6	.09	21.8
SPRING GRAINS	0.0	0.0	.00	22.2
WINTER WHEAT	0.0	0.0	.00	16.0
LAWNS	1.1	0.7	.10	25.4

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 conten

³Beginning April 1 – note in 2010-13 we started our seasonal total on May 1 but since include April

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.

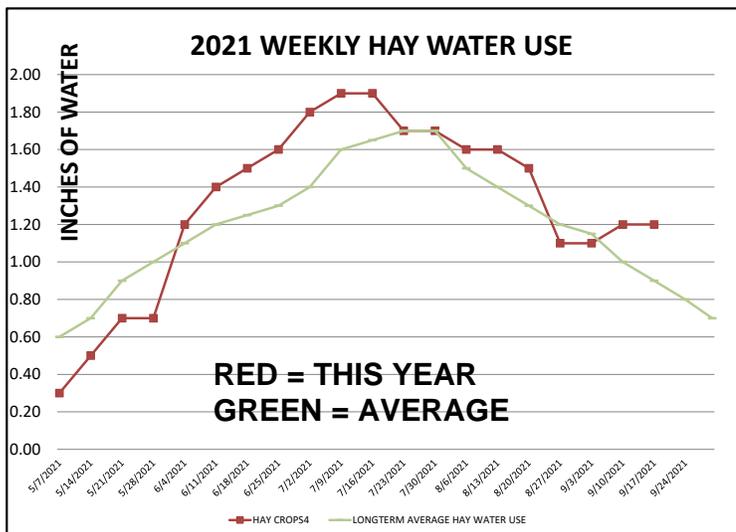
BLACKFOOT 2021 GROWING SEASON WEEKLY RAINFALL & CROP WATER USE (INCHES OF WATER)										
WEEK ENDING	RAIN ¹	2021 WEEKLY POTENTIAL CROP WATER USE ²						AVERAGE WEEKLY CROP WATER USE ³		
	RAIN	HAY CROPS ⁴	PASTURE	SPRING GRAINS 5-1 START	SPRING GRAINS 5-15 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE HAY WATER USE	HOT WEEK HAY WATER USE	COOL WEEK HAY WATER USE
5/7/2021	0.40	0.30	0.40	0.00	0.00	0.50	0.50	0.60	1.00	0.30
5/14/2021	0.20	0.50	0.50	0.10	0.00	0.70	0.70	0.70	1.10	0.40
5/21/2021	0.50	0.70	0.60	0.30	0.10	0.80	0.80	0.90	1.20	0.50
5/28/2021	2.00	0.70	0.60	0.60	0.20	0.80	0.70	1.00	1.30	0.50
6/4/2021	0.10	1.20	1.00	0.90	0.60	1.30	1.20	1.10	1.50	0.60
6/11/2021	0.10	1.40	1.20	1.10	0.80	1.50	1.30	1.20	1.70	0.70
6/18/2021	0.20	1.50	1.30	1.40	1.10	1.60	1.40	1.25	1.90	0.70
6/25/2021	0.20	1.60	1.40	1.60	1.40	1.70	1.50	1.30	2.00	0.80
7/2/2021	0.10	1.80	1.50	1.90	1.70	1.90	1.70	1.40	2.00	0.90
7/9/2021	0.01	1.90	1.60	2.00	2.00	2.00	1.90	1.60	2.10	1.00
7/16/2021	0.01	1.90	1.60	2.00	2.00	1.50	1.90	1.65	2.20	1.00
7/23/2021	0.25	1.70	1.40	1.80	1.80	1.00	1.60	1.70	2.20	1.00
7/30/2021	0.01	1.70	1.40	1.90	1.90	0.50	1.60	1.70	2.00	1.00
8/6/2021	0.25	1.60	1.30	1.80	1.80	0.20	1.50	1.50	1.80	0.90
8/13/2021	0.25	1.60	1.30	1.80	1.80	0.00	1.50	1.40	1.70	0.80
8/20/2021	0.25	1.50	1.20	1.50	1.70	0.00	1.40	1.30	1.60	0.80
8/27/2021	0.50	1.10	0.90	0.90	1.20	0.00	1.00	1.20	1.40	0.70
9/3/2021	0.25	1.10	0.80	0.40	0.60	0.00	1.00	1.15	1.40	0.70
9/10/2021	0.01	1.20	0.90	0.00	0.20	0.00	1.10	1.00	1.30	0.60
9/17/2021	0.01	1.20	0.90	0.00	0.00	0.00	1.10	0.90	1.20	0.50
9/24/2021								0.80	1.10	0.50
9/30/2021								0.70	1.00	0.40
TOTAL	5.60	26.20	21.80	22.00	20.90	16.00	25.40	26.05	34.70	15.30

¹ Rainfall should be reduced to account for immediate evaporation from crop and soil surfaces (0.1-April, May and Sept, 0.15-June and August, 0.2-July) (This rainfall figure is an average across all Blackfoot croplands - use your own rain gauge for better accuracy)

² **This years** maximum water use by healthy crops that are well-fertilized and irrigated, disease and insect-free. Will vary slightly across the drainage.

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

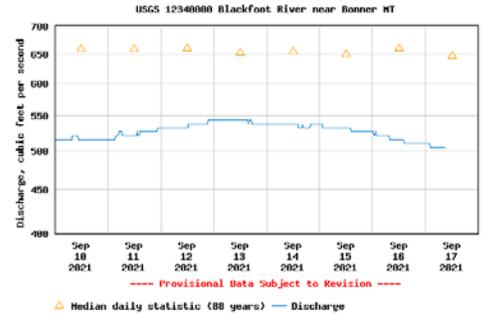
⁴ Hay Crop water use drops approximately 2/3 the first week after cutting, 1/2 the second and 1/3 the third.



WEEKLY TIPS

Blackfoot Stream Flow Down to 500 CFS

Today's flow was 504 CFS compared with an average of 653 CFS. The highest flow recorded on this date was 1,280 CFS in 1965 while the lowest flow was 362 CFS in 1988. **Drought Plan measures seem to have slowed the downward trend.** Water temperatures remain mostly in the 50s making life slightly easier for fish. However, low stream flows mean fish are crowded into less space and are easier to catch.



Follow Drought Plans, Calls on Junior Rights and Voluntary Reductions - It's Working!

All irrigators should continue to reduce water use according to their **Drought Response Plans and Calls on Junior Rights**. FWP has now made call on junior water right holders that do not have a plan and those folks must stop using water.



These activities seem to be working! The rapid drop in stream flow was reversed this week as irrigators across the drainage responded to drought plans, calls on junior rights and voluntary reductions. Stream flows actually increased following last Thursday's meeting of the Drought Committee (good job Committee!). We have seen a slow decline in flows since Monday but rain, frost and reduced crop water use should reverse that trend this week. This week I noted that some of our major irrigators were only running a limited number of systems. One with 5 systems was running 2, one with 6 systems was running 1 and several others with 2-6 systems were running none. The Drought Committee is optimistic that further restrictions on water use will not be needed and thanks all water users for their cooperation. Call Jennifer Schoonen for details 406-360-6445.

To Irrigate or Not to Irrigate - That is the Question

Fall irrigation is an important practice for many producers, including during drought periods. Healthy plants this fall can mean better production next season, especially on grass hay crops. These producers suffer more than most when asked to reduce irrigation to maintain stream flows. It's important to balance crop and fish concerns - reducing irrigation diversions by rotating fields and other methods but not ceasing irrigation entirely. Blackfoot irrigators continue to experiment with this delicate balance in the hopes of finding the best practices for crops, fish and the landscape we love.

When Fall Irrigation Makes Sense:

- To provide fall pasture (remember pasture crops need less water during cooler weather)
- To ensure good germination and establishment of new seedlings
- To help crops recover following cutting
- To promote fall growth and boost next year's production, especially on grass hay

When Fall Irrigation Does Not Make Sense:

- To provide soil moisture for spring growth – only if you can wet the lower soil layers
- When crops have gone dormant already from lack of water
- When winterkill is a concern, especially with alfalfa
- When stream flows are at critical levels and benefits don't outweigh drought concerns

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 - IN DROUGHT CONSIDER REDUCING OR ENDING IRRIGATION

- Apply 1 - 2 inches of irrigation per week in August to hay and pasture crops for full production depending on weather and water availability.
- 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. **Make a BC Drought Plan.**



SEPTEMBER – APPLY AS NEEDED IF AVAILABLE & PREPARE FOR WINTER!

- Apply ½ - 1 ½ inches of irrigation per week in September to hay and pasture crops depending on weather but continue cutbacks according to your Drought Plan if necessary. Irrigate new plantings as needed. Prepare the system for winter and an early start next spring.