

BLACKFOOT CHALLENGE

WEEKLY IRRIGATION REPORT

Friday August 20, 2021



It was another week of mixed weather including hot, dry and smoky then some rain with more smoke. Rain, showers and thunderstorms will be variable across the drainage this weekend. Less smoke, sunny skies and moderate temperatures will prevail most of next week with a chance of frost. Mixed weather this last week resulted in about 1½ inches of crop water use and it will be lower next week. Soil moisture dropped by about 1 ½ inches unless irrigated.

Blackfoot River flows this week have triggered the Challenge Drought Response Plan. Participating irrigators can expect notice to initiate Drought Response Plans and non-participating irrigators with junior water rights can expect a call on those rights from FWP.



WEATHER – VARIABLE RAIN, MAYBE FROST, SUNNY

It was hot and mostly dry this week with smoke. Some lucky folks had up to ½ inch of rain but many had only a trace. There will be more rain over the weekend then clear by Sunday night. Thunderstorms could dump larger amounts in local areas. The coming week will have high temperatures mostly in the 70s with lows in the 30s and 40s. There is a chance of frost Monday night. The 30-day forecast says average rainfall and above average temperatures. The 90-day forecast says average rainfall and above average temperatures. There should be less smoke

but you can check smoke and air quality conditions anytime at: airnow.gov.

CROP WATER USE – ABOVE AVERAGE LAST WEEK, BELOW NEXT WEEK

This week crop water use was slightly above average levels due to heat and little or no rain. **Most crops used about 1½ inches of water while pasture use about 1 inch. All crops will use less next week due to cooler temperatures.** The table below provides a quick summary of crop water use this last week and an estimate for next week. We also list season totals and compare them with past years in our annual reports available on the Challenge website.

WATER USE IN INCHES	LAST 7 DAYS	NEXT 7 DAYS TOTAL¹	NEXT 7 DAYS DAILY AVE²	SEASON TOTAL³
HAY CROPS	1.5	1.4	.20	18.4
PASTURE	1.2	1.1	.16	15.7
SPRING GRAINS	1.7	1.6	.23	17.3
WINTER WHEAT	0.0	0.0	.00	15.8
LAWNS	1.4	1.3	.18	18.4



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

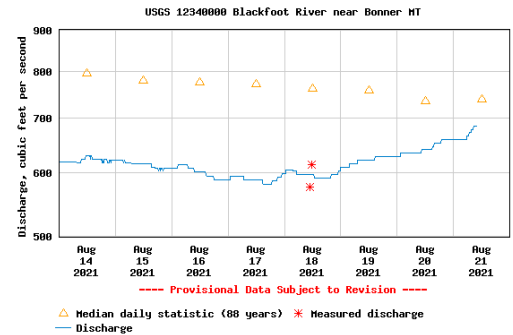
²Expected average daily water use over the next week (compare this with your soil moisture content)

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

WEEKLY TIPS

Blackfoot Stream Flow at Bonner Recalibrated

The Bonner stream gauge was recalibrated this week revealing that flows have fallen **below 700 CFS for more than a week**. Flow fell **below 600 CFS** on the 16th, 17th and 18th. Today's flow (Saturday the 21st) was 685 CFS and compares with an average of 747 CFS for this date. The highest flow recorded on this date was 1,680 CFS in 1899 while the lowest flow was 355 CFS in 1988. Thunderstorms this weekend could boost stream flows but it is likely that they will remain below 700 CFS for some time. The good news is that water temperatures fell to the 50s and low 60s making life easier for fish.



Blackfoot Drought Response Plan is Implemented

Recalibration of the Bonner stream gauge and scattered rainstorms have made the Drought Committees work more challenging lately. The Thursday meeting of the committee had the following results:

River Conditions

Thursday morning the Blackfoot at Bonner measured 615 cfs. Although there was some expectation that rain might temporarily raise flows above 700 cfs, USGS had to make gage corrections after some field measurements. It appears the gage had calibration issues for several weeks. The corrections showed that in fact the river had been below 700 cfs for some time and had even dropped below 600 cfs for a couple of days. Given current water use (irrigation) and weather predictions, the river is expected to stay below 700 for the foreseeable future.



Plan Participation

BC staff has provided FWP staff with a list of drought participants who have confirmed their intention to activate individual water conservation plans this year. **Those participants will be removed from the FWP's Murphy Right call list for any calls made on junior users.**

Plan Implementation Process

FWP staff has run the junior call list and is working with an FWP team and BC staff to review that list before finalizing. FWP staff indicated that the call process may take some additional time this year as they compile the detailed information being requested by FWP leadership and the Governor's staff to demonstrate the value of a call to stream flows and fisheries. FWP has recently developed a new protocol for their Murphy Right call process which requires more specifics about who would be called and what that would mean for the river. They appreciate that there are several compelling reasons to make call in the Blackfoot – including the integrity of a 20-year community drought response process.

However, staff is uncertain about whether a request to make that call will be approved. Drought Response Committee Action The committee members present support formally activating drought response at this time. As part of that process, the committee is suggesting FWP initiate the Murphy Right call process for any junior rights not currently confirmed to be participating through an individual drought plan.

The Blackfoot Drought Response Plan is now in effect. The goal of this plan is to minimize the adverse impacts of drought on fisheries and to aid in the equitable distribution of water resources during low flow summers. The Blackfoot Drought Response Plan is based on the premise of “**shared sacrifice**” with the goal that all Blackfoot water users (agricultural, irrigators, outfitters, anglers, recreational users, government agencies, homeowner associations, businesses, conservation groups, and others) voluntarily agree to take actions that will result in water savings and/or the reduction of stress to fisheries resources during critical low flow periods. The Drought Committee is now alerting plan participants to begin water cutbacks.



Drought Options - Things You Can Do Now

- Rotate Irrigation Systems During Low River Flows
- Reduce Irrigated Acreage
- Concentrate Your Efforts on the First Cutting and Then Rest
- Apply More Water During Each Application
- Shut off during peak afternoon heat when water just evaporates from crop leaves
- Irrigate at night and early morning if possible
- Stagger start times to alternate the area irrigated during peak afternoon heat
- Reduce or eliminate tailwater
- Irrigate a smaller area well instead of a large area poorly for best yield
- Switch to pasture which uses less water compared with hayfields since animals constantly remove part of the crop (less crop leaves = less interception = less water use)

For further information contact Jennifer Schoonen, Blackfoot Challenge Water Steward, 406-360-6445 or Barry Dutton, Professional 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 - 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.



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.