



BLACKFOOT CHALLENGE WEEKLY IRRIGATION REPORT

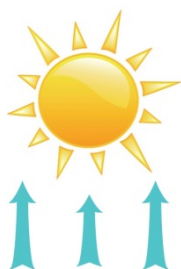
Friday August 15, 2014

Hot, smoky weather was interrupted by scattered thundershowers this last week which cleared out the smoke but didn't contribute much to soil moisture. Crop water remains high at about 1.5 inches per week for hay and pasture crops which is slightly above-average. Soil moisture dropped considerably last week unless irrigated. Haying has progressed across the drainage. Haying reduces crop water use by about 2/3 the first week and 1/3 the next. Get water back onto cut fields as soon as possible to revive plants, stimulate regrowth and reduce weed infestation. Irrigation has ended for most grain crops except those planted later. The last page of this report is a condensed summary of recommendations for the entire season.



WEATHER - HOT, LESS SMOKY A FEW THUNDERSTORMS

Most Blackfoot drainage croplands received a little rain this past week, often in spectacular but short downpours. Most sites accumulated less than ¼ inch with about 1/3 inch at Lincoln. Temperatures reached into the 90s again in most areas. Next week looks like more of the same. The 30 and 90 day forecasts still suggest normal temperatures and above normal rainfall.



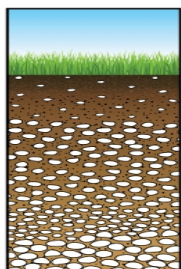
CROP WATER USE - REMAINS HIGH UNLESS CUT

Crop water use was high again this last week and has reached its peak due to recent hot and dry conditions. Crop water use should continue to be high for the next week except for cut hay crops and maturing small grains. After cutting, reduce crop water use by about 2/3 the first week and 1/3 the next. Hay crops cut this last week used only 0.5 inches of water instead of the 1.5 inches listed below. Those cut the week before used 1 inch. See the table and chart on Page 3 for more details.

WATER USE IN INCHES	LAST 7 DAYS	NEXT 7 DAYS¹	SEASON TOTAL²
HAY CROPS	1.5	1.5 (1.5 - 1.8)	19.9
PASTURE	1.2	1.2 (1.3 -1.6)	17.2
SPRING GRAINS	0.5	0.0 Mature	16.1
WINTER WHEAT	0.0 Mature	0.0	14.1
LAWNS	1.4	1.4 (1.4 -1.7)	18.8

¹Expected water use (range if weather becomes cooler or hotter than expected)

²Beginning May 1 - season start date



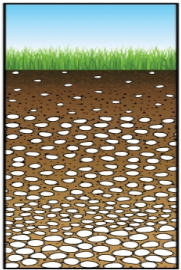
SOIL MOISTURE - LOW UNLESS IRRIGATED

Soil moisture levels again dropped by 1 ½ inches this week due to high crop water use. Crop water use slows as soil moisture gets low.

WEEKLY TIPS

NO DROUGHT IN SIGHT - RIVER NEAR AVERAGE

Blackfoot streamflow is slightly above average this week due to recent thunderstorms throughout the drainage. It looks like drought discussions will not need to come out of the closet this season and we can let those drought plans collect a season of well-deserved dust. The Blackfoot River at Bonner is flowing at about 850 CFS today which is just above average. The highest flow on this date was 1770 (1899) and the lowest flow was 382 (1941).



SOIL MOISTURE - TO IRRIGATE OR NOT TO IRRIGATE?

Up until this time of the irrigation season, most irrigators follow the same path. They try to keep the first cutting of hay or the grain crop healthy by putting on as much water as their equipment, water rights and schedules allow. Now is the time of year when everyone does something different:

Some stop irrigating all together due to water rights, water availability, a pause in crop rotation timing, lack of interest, pooped

Some want fall pasture or a second cutting and so irrigate furiously to overcome cutting shock and high crop water use during August and early September.

Some stop irrigating alfalfa to avoid bloat later when they pasture it in September

Some avoid irrigating during the hottest period of August and wait as late as possible to apply their last water in order to boost spring soil moisture

CROP WATER USE DECREASES WITH CUTTING

Crop water use decreases with cutting by approximately 2/3 the first week after cutting, 1/2 the second and 1/3 the third. This is the best time to increase soil moisture while crop use is reduced. Since less gets used by the crop, more goes into soil storage.

WHEN TO STOP IRRIGATING GRAINS - HEY DUDE, YOU'RE DONE!

Irrigation has ceased for most small grains throughout the drainage. Hot weather required extra irrigation in many fields to maintain plump kernels. Recent thunderstorms helped reduce shriveling in some areas. It's safest to have an inch or so of stored soil moisture left when you stop irrigating, if it's hot.

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

BLACKFOOT 2014 GROWING SEASON WEEKLY RAINFALL & CROP WATER USE (INCHES OF WATER)

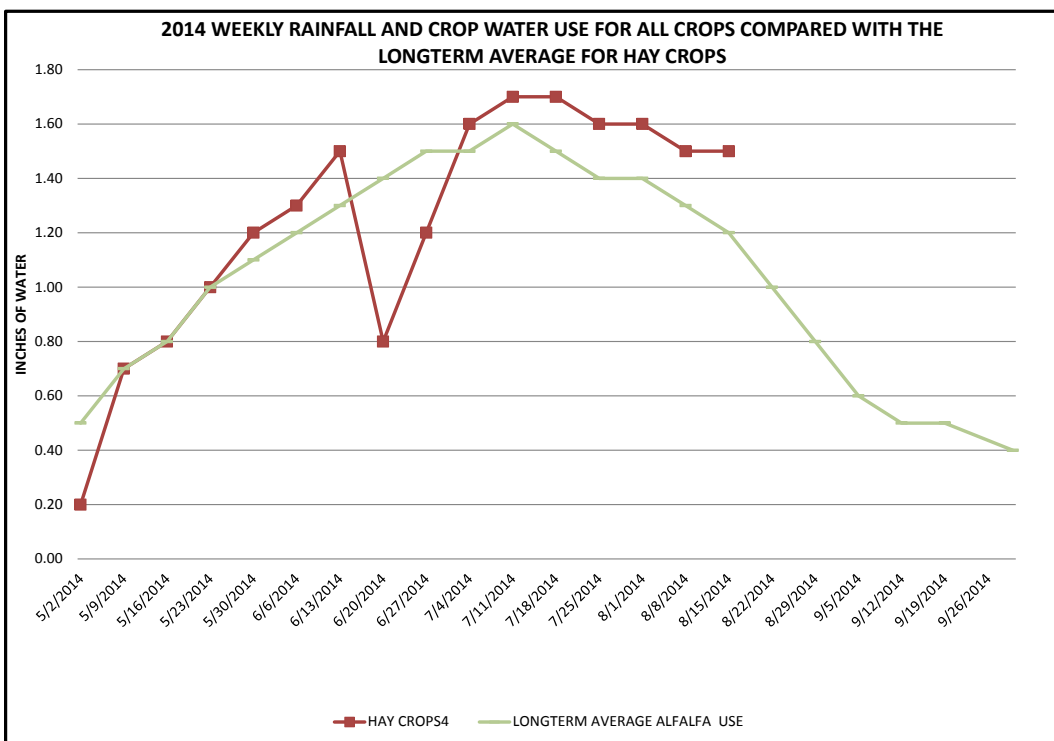
	RAIN ¹	2013 WEEKLY POTENTIAL CROP WATER USE ²						AVERAGE POTENTIAL CROP WATER USE ³		
		HAY CROPS ⁴	PASTURE	SPRING GRAINS 5-15 START	SPRING GRAINS 5-30 START	WINTER WHEAT	LAWNS	LONGTERM AVERAGE ALFALFA USE	HOT WEEK ALFALFA HAY WATER USE	COOL WEEK ALFALFA HAY WATER USE
5/2/2014	0.10	0.20	0.20	0.00	0.00	0.20	0.20	0.50	0.80	0.20
5/9/2014	0.50	0.70	0.60	0.00	0.00	0.80	0.70	0.70	0.90	0.30
5/16/2014	0.30	0.80	0.70	0.00	0.00	0.90	0.80	0.80	1.00	0.40
5/23/2014	0.30	1.00	0.80	0.25	0.00	1.10	0.90	1.00	1.10	0.60
5/30/2014	0.10	1.20	1.10	0.75	0.00	1.30	1.10	1.10	1.20	0.80
6/6/2014	0.10	1.30	1.20	0.90	0.30	1.40	1.20	1.20	1.30	0.90
6/13/2014	0.10	1.50	1.25	1.25	0.75	1.75	1.40	1.30	1.50	1.00
6/20/2014	1.25	0.80	0.70	0.80	0.60	0.80	0.80	1.40	1.70	1.10
6/27/2014	0.50	1.20	1.00	1.40	1.00	1.40	1.10	1.50	1.90	1.10
7/4/2014	0.10	1.60	1.40	1.75	1.50	1.50	1.50	1.50	2.00	1.20
7/11/2014	0.00	1.70	1.50	1.80	1.80	1.40	1.60	1.60	2.10	1.30
7/18/2014	0.00	1.70	1.50	2.00	2.00	0.80	1.60	1.50	2.00	1.20
7/25/2014	0.20	1.60	1.30	1.70	1.70	0.50	1.50	1.40	1.90	1.10
8/1/2014	0.10	1.60	1.40	1.50	1.50	0.25	1.50	1.40	2.20	1.10
8/8/2014	0.10	1.50	1.30	1.50	1.50	0.00	1.50	1.30	1.70	1.00
8/15/2014	0.10	1.50	1.20	0.50	0.50	0.00	1.40	1.20	1.50	0.90
8/22/2014								1.00	1.30	0.70
8/29/2014								0.80	1.00	0.50
9/5/2014								0.60	0.80	0.40
9/12/2014								0.50	0.70	0.30
9/19/2014								0.50	0.70	0.30
9/30/2014								0.40	0.60	0.20
TOTAL	3.85	19.90	17.15	16.10	13.15	14.10	18.80	23.20	29.90	16.60

¹ Rainfall should be reduced to account for immediate evaporation from crop and soil surfaces (0.1-May and Sept, 0.15-June and August, 0.2-July)

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 Average water use for each crop each week based on historic data.

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



THE BLACKFOOT DRAINAGE IRRIGATION SEASON IN BRIEF

This is a summary of general activities and recommendations with more detail provided throughout our irrigation guide.

APRIL – GET READY AND PLAN YOUR IRRIGATION STRATEGY!

- Get your irrigation system ready – perform maintenance and test system.
- Evaluate weather conditions and predictions then plan for 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 (May 1) 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.
- Stop irrigating small grains at the milk to soft dough stage but be sure there are 1- 2 inches of soil moisture left at this stage to prevent kernels from shrinking.

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.



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.