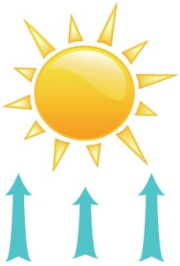
BLACKFOOT CHALLENGE WEEKLY IRRIGATION REPORT

Friday June 26, 2015

Warm and dry weather pushed potential **crop water use above 1 ½ inches this week** (Chart Page 3). A few drops were reported but virtually no rain fell on Blackfoot croplands. It was another challenging week to boost soil moisture but those who kept irrigating saw increases. Crops again responded well to warm temperatures and clear skies with impressive growth spurts in some fields. A condensed overview of the entire irrigation season is presented on the last page of this report as a reminder to plan ahead. More information about irrigation is available on the Challenge website.

WEATHER – WARM LAST WEEK AND WARMER NEXT

Warm, dry weather prevailed last week. The weather next week will start out extremely hot and then get merely hot. Only the most scattered and insubstantial rain showers are predicted. Temperatures will be near 100 to start and then will "cool" into 90s with little or no rainfall. The 30 and 90 day forecasts continue to suggest above normal temperatures and normal rainfall. Streamflows fall lower.

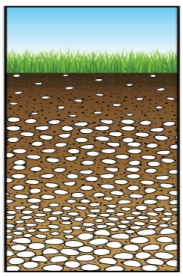


HIGH CROP WATER USE CONTINUES

Crop water use continued to be above 1 ½ inches for most crops last week – still above normal. It will continue to be high next week with hot temperatures and low humidity. The table and chart on Page 3 illustrate crop water use throughout the whole season.

WATER USE IN INCHES	LAST 7 DAYS	NEXT 7 DAYS[1]		SEASON TOTAL[2]
HAY CROPS	**1.6**	**1.7**	(1.6 - 1.9)	11.50
PASTURE	**1.3**	**1.4**	(1.3 - 1.6)	10.10
SPRING GRAINS (planted May1)	**1.7**	**1.9**	(1.7 – 2.1)	5.95
WINTER WHEAT	**1.7**	**1.9**	(1.7 – 2.1)	12.80
LAWNS	**1.5**	**1.6**	(1.5 - 1.8)	11.30

[1]Expected water use (range if weather becomes cooler or hotter than expected)
[2]Beginning April 1 – note in 2010-13 we started our seasonal total on May 1 but now include April



SOIL MOISTURE – THE RACE TO FILL IT UP!

Hot temperatures, evaporation loss and high crop water use made it hard to boost soil moisture last week but persistence paid off for those with the water and the will. You need to add 1.5 - 3 inches a week now before you add much to the soil. It's really surprising how quickly soils dry out after irrigation and it only takes a shovel or soil probe to confirm it. So take a look and add water while it's available.

WEEKLY TIPS

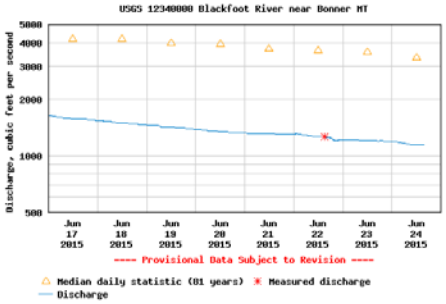
Keep Irrigating While Water Supplies Last and the Weather is Great

June is the most important local growth period so make your best effort to irrigate now. These hot days are great for converting irrigation water into crop production. Then plan for harvest when the cost/benefit/irrigation/further-growth equation meets your goals.

Check your soil moisture with a soil probe or shovel and if it looks and feels moist – you're good. If it's dusty and dry – keep irrigating. This applies to both sprinkler and flood systems. Then give it a few days and look again - you will be surprised how much water a crop can use and how quickly your soil dries out!

Drought in 2015

Blackfoot River streamflows continue a downward trend
3 decline and chart at the right says it all. Flows remains at 1/3 the normal level with this trend predicted to continue throughout the summer. We are much closer to the historic low flow of 803 cfs – 1977) than the historic high (12,500 cfs – 1899).
Water Supply Forecasts are available on the website: *http://blackfootchallenge.org/Articles/?p=1589*).



Water supplies are drying up quickly for many and low river flows have triggered unintended pump shutdowns for others. We are only a few hundred CFS from triggering drought restriction on the main Blackfoot River.

Here are some hints for reducing water use taken from our irrigation guide that has more detail and is available at: http://blackfootchallenge.org/Articles/wp-content/uploads/2013/06/BFIrrigationGuideFinalv3.0.pdf

- Fill Up Your Soil - NOW - and Try to Keep it Near Full
- Know how much you apply – check with rain gauges or flow meter
- Apply More Water At Each Application
- Improve Irrigation System Performance
- Concentrate your efforts on the first cutting and then relax
- Reduce irrigated acreage and irrigate that well

To Hay or Not to Hay? Think Outside the Box?

There are 138 opinions about when to cut hay in the drainage this year so don't take my advice, just think about it. This may be a year to cut hay early. Those with well-developed hay crops and limited water may want to cut early while water is available and they can irrigate after cutting. Those with water about to run out or less-mature hay crops will likely keep irrigating as long as they can before cutting. Remember that alfalfa doesn't like to get cut without a drink to recover.

For more information contact Jennifer Schoonen, Blackfoot Challenge Water Steward, 406-360-6445 or Barry Dutton, Professional Soil Scientist, 406-240-7798 barry@landandwaterconsulting.net

BLACKFOOT 2015 GROWING SEASON WEEKLY RAINFALL & CROP WATER USE (INCHES OF WATER)

	RAIN[1]	2015 WEEKLY POTENTIAL CROP WATER USE[2]						AVERAGE POTENTIAL 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	0.90	1.00	0.00	0.00	1.20	1.10			
5/1/2015	0.01	0.80	0.90	0.10	0.00	1.10	0.90	0.50	0.80	0.20
5/8/2015	0.01	1.10	1.00	0.20	0.00	1.20	1.10	0.70	0.90	0.30
5/15/2015	0.10	1.10	0.90	0.20	0.00	1.20	1.00	0.80	1.00	0.50
5/22/2015	0.25	0.80	0.60	0.25	0.20	0.90	0.80	1.00	1.10	0.70
5/29/2015	0.25	1.10	0.80	0.40	0.30	1.20	1.00	1.20	1.20	0.80
6/5/2015	0.50	0.90	0.80	0.50	0.40	1.00	0.90	1.30	1.30	0.90
6/12/2015	0.00	1.60	1.40	1.10	0.90	1.60	1.50	1.40	1.50	1.00
6/19/2015	0.00	1.60	1.40	1.50	1.25	1.70	1.50	1.50	1.70	1.10
6/26/2015	0.00	1.60	1.30	1.70	1.60	1.70	1.50	1.50	1.90	1.10
7/3/2015								1.50	2.00	1.20
7/10/2015								1.60	2.10	1.30
7/17/2015								1.60	2.00	1.20
7/24/2015								1.50	1.90	1.10
7/31/2015								1.50	2.20	1.10
8/7/2015								1.40	1.70	1.00
8/14/2015								1.20	1.50	0.90
8/21/2015								1.00	1.30	0.70
8/28/2015								0.80	1.00	0.50
9/4/2015								0.60	0.80	0.40
9/11/2015								0.50	0.70	0.30
9/18/2015								0.50	0.70	0.30
9/25/2015								0.40	0.60	0.20
9/30/2015								0.40	0.60	0.20
TOTAL	**1.62**	**11.50**	**10.10**	**5.95**	**4.65**	**12.80**	**11.30**	**24.40**	**30.50**	**17.00**

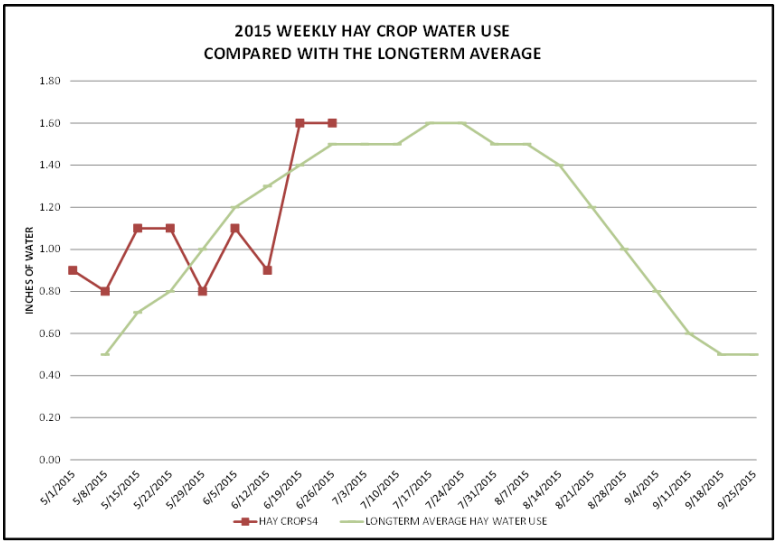
[1] Rainfall should be reduced to account for immediate evaporation from crop and soil surfaces (0.1-May and Sept, 0.15-June and August, 0.2-July)

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

[3] Average water use for each crop each week based on long-term 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.

CROP WATER USE STARTED OUT ABOVE AVERAGE, DROPPED BELOW AVERAGE FOR THREE WEEKS AND SHOT UP WITH WARMER WEATHER EVER SINCE (RED LINE = 2015, GREEN LINE = LONG TERM AVERAGE)



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.