

Happy to report that the cooler (especially evening) air temperature and light rain over the past few days has helped the streams stabilize, as well as everyone's water conservation efforts. Still strongly affected by our early summer hot and dry conditions, the Boundary stream and groundwater levels are still very low for this time of year, and low compared to other drought years. The forecast is looking promising, with a high chance of rain this the weekend. We need to continue prioritizing water conservation, supporting both our communities and ecosystems.

Comparing current stream levels to previous drought years: 2003, 2009, 2015 and 2021

- Current water levels are low compared to drought years from the past 2 decades (graphs below).
- Record low in the upper West Kettle drainage (West Kettle at McCulloch and Trapping Creek) and upper Granby drainage (Burrell Creek).

Surface and Groundwater levels

There are nine (9) [rivers/streams that have flow monitoring](#) (graphs below)

- All rivers/streams are showing low water levels (below the 25th percentile); with most at their minimum recorded water level for this time of year. In the Boundary, the average (median) summer's low water levels occur mid-September, so we have many more weeks to go.
- Most current water levels are below that stream's normal (median) low water level.
- All rivers/streams are below 10% Mean Annual Discharge (MAD), with some below 5% MAD (see chart below).

There are three (3) [groundwater observation wells](#) in the Boundary; all are lower than normal for this time of year.

Fisheries

- Water temperatures (temp) are similar to last week, with the Granby, West Kettle and Kettle ranging from 13-25 °C (graphs below). Note that there can be a water temperature change of more than a 4°C over a 24 hr period.
- Water temperature is being monitored on the Kettle River at the Atwood Bridge, and shows a range of 16 to 25°C.

Past Weather and Forecasts

- Minimal rain from July 1st onwards, until these past few weeks. Total August rain recorded so far at our local climate stations ranges from 3 – 27 mm (see table below).
- Forecast is for some cooler temperatures (15-27°C) this upcoming week and rain expected this weekend.
- Forecast for the next 3 months (Aug-Oct) is for above normal temperatures.

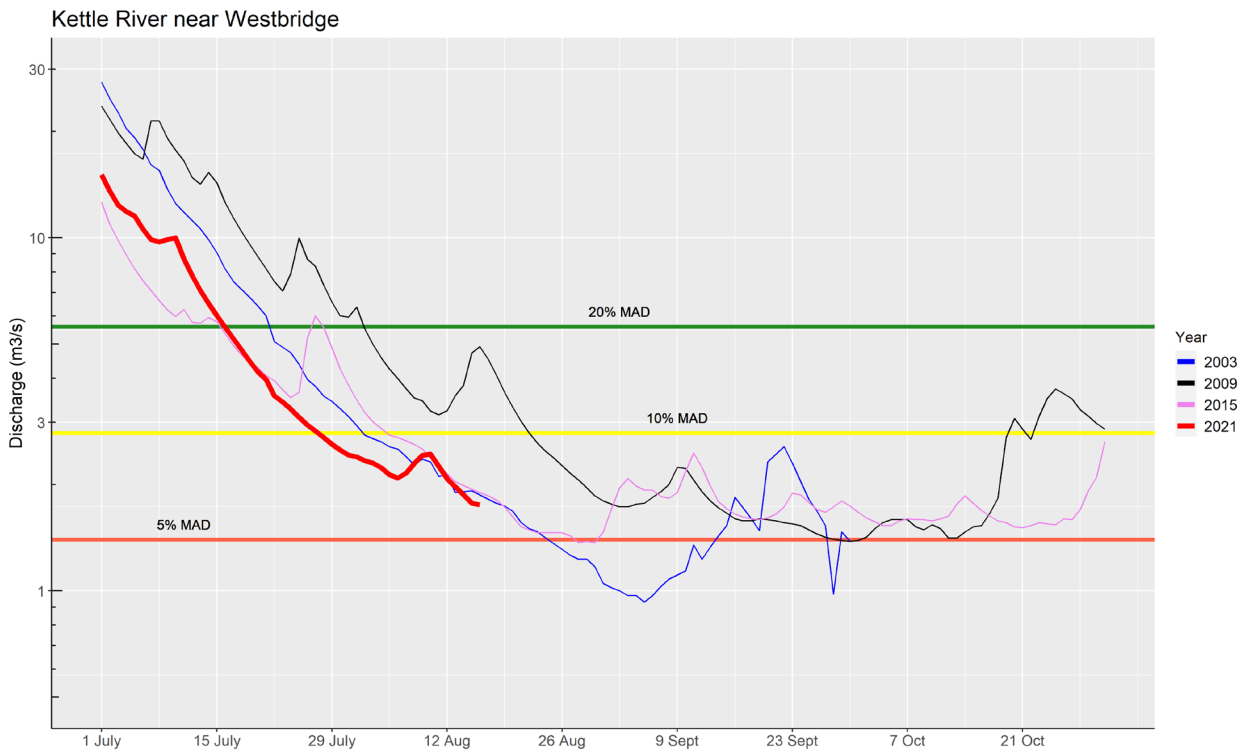
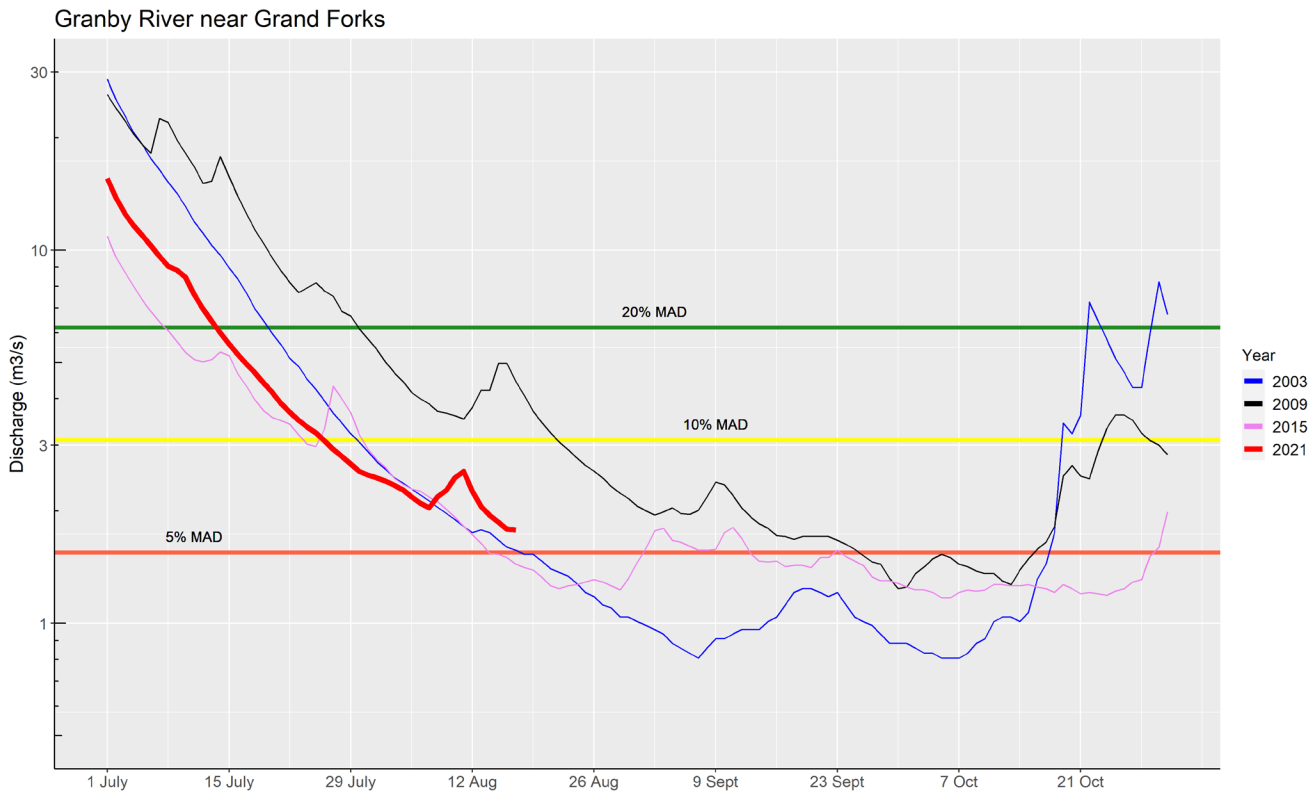
Provincial Information

- The Provincial [Drought Classification level](#) remains at Level 5 (exceptionally dry).
- RDKB attends meetings weekly with the Province; to report low water concerns contact FrontCounterBC@gov.bc.ca or watershedplanner@rdkb.com.

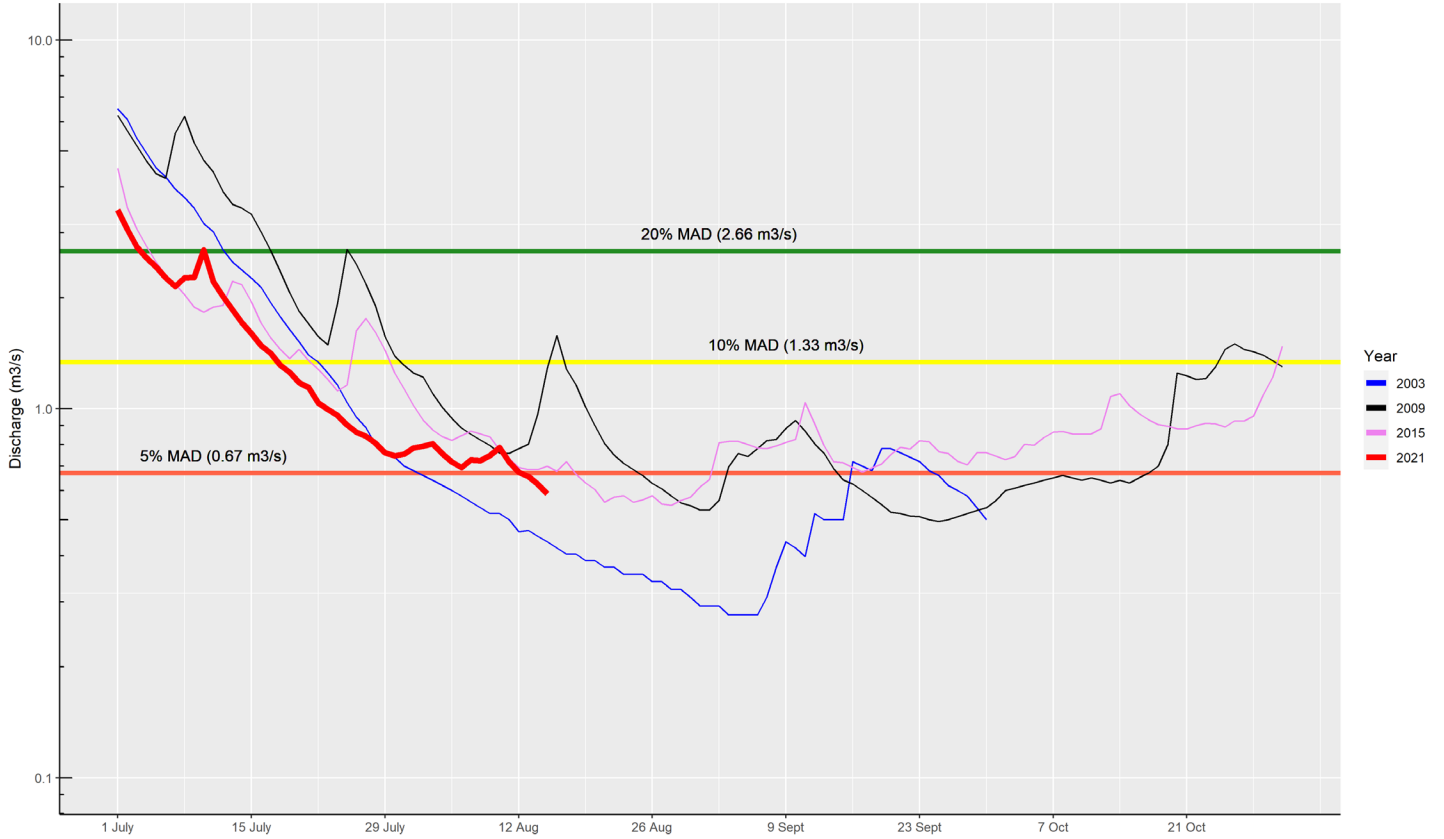
Be WaterSmart. Use water wisely, every drop counts

- Water conservation takes many forms: repairing water leaks, fix dripping taps, use soil water meters to effectively (and deeply) water your site, watering during evenings and early mornings to reduce evaporation, while making sure your sprinklers aren't watering pavement. Overall, reducing unnecessary indoor and outdoor water use.
- Think before you turn on the tap outside, does it need to happen, if so can you do something to reduce the evaporation and increase absorption into the ground?

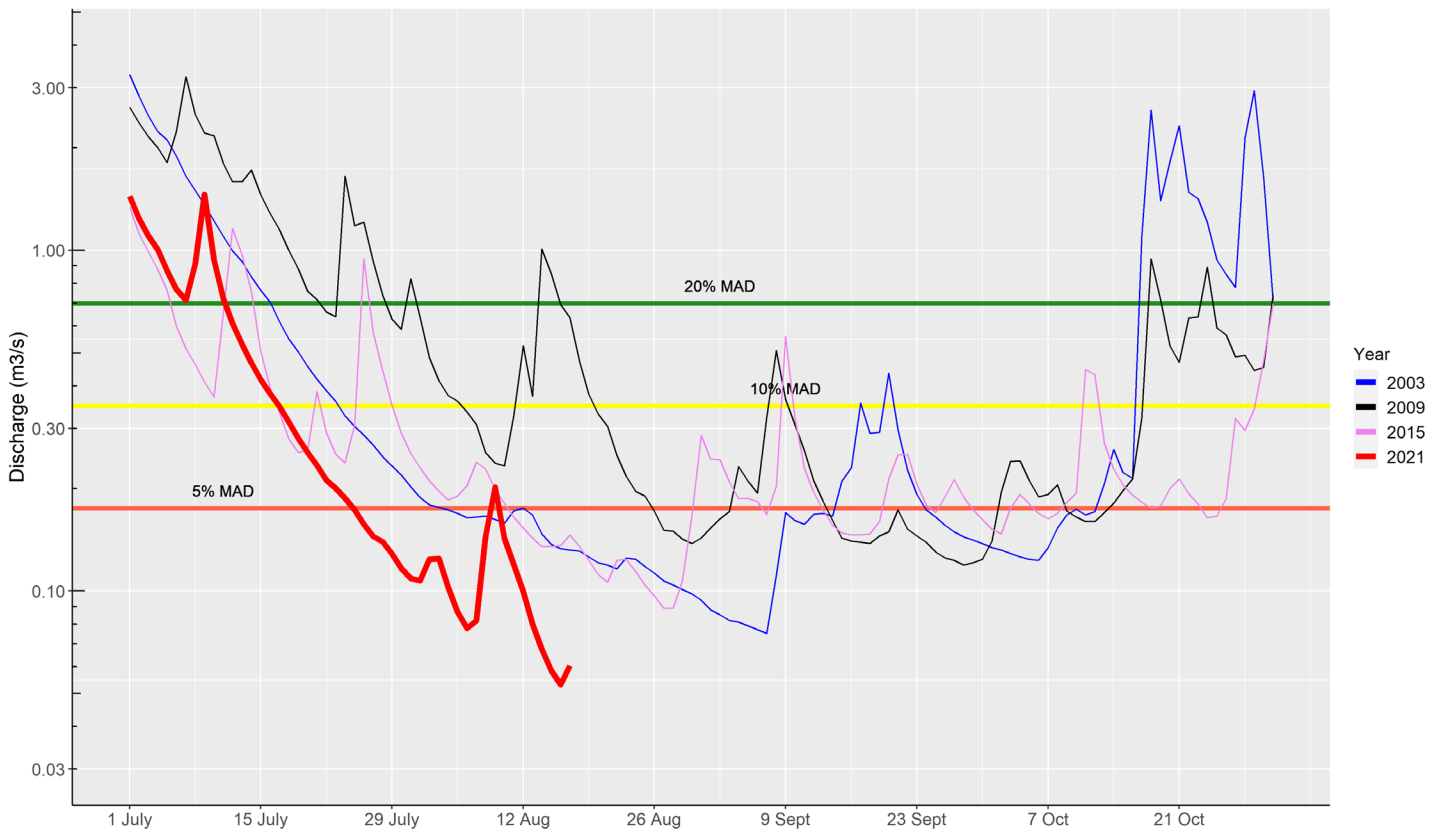
Comparing drought years: 2003, 2009, 2015 and 2021. Graphs provided by Natasha Neumann, Province of BC.



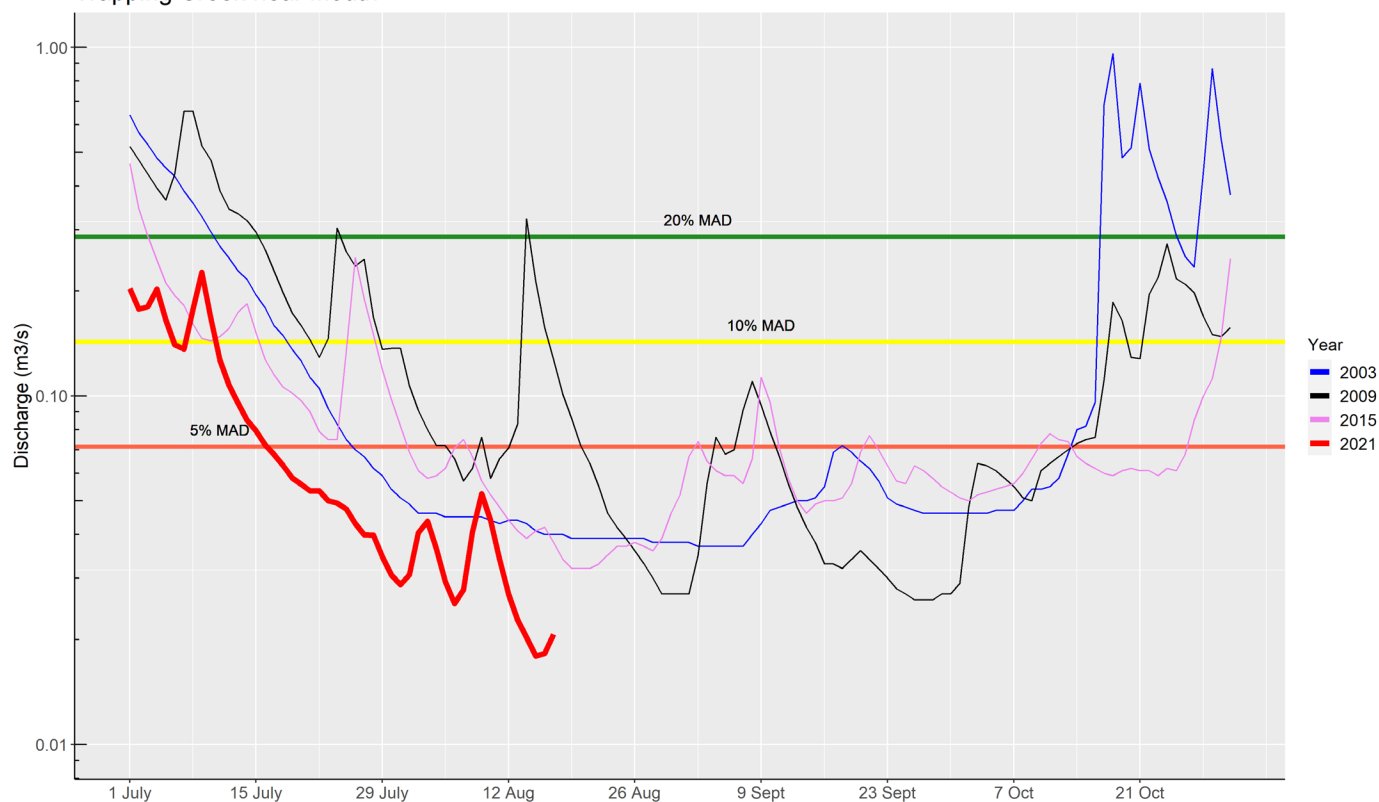
West Kettle River at Westbridge



West Kettle River near McCulloch



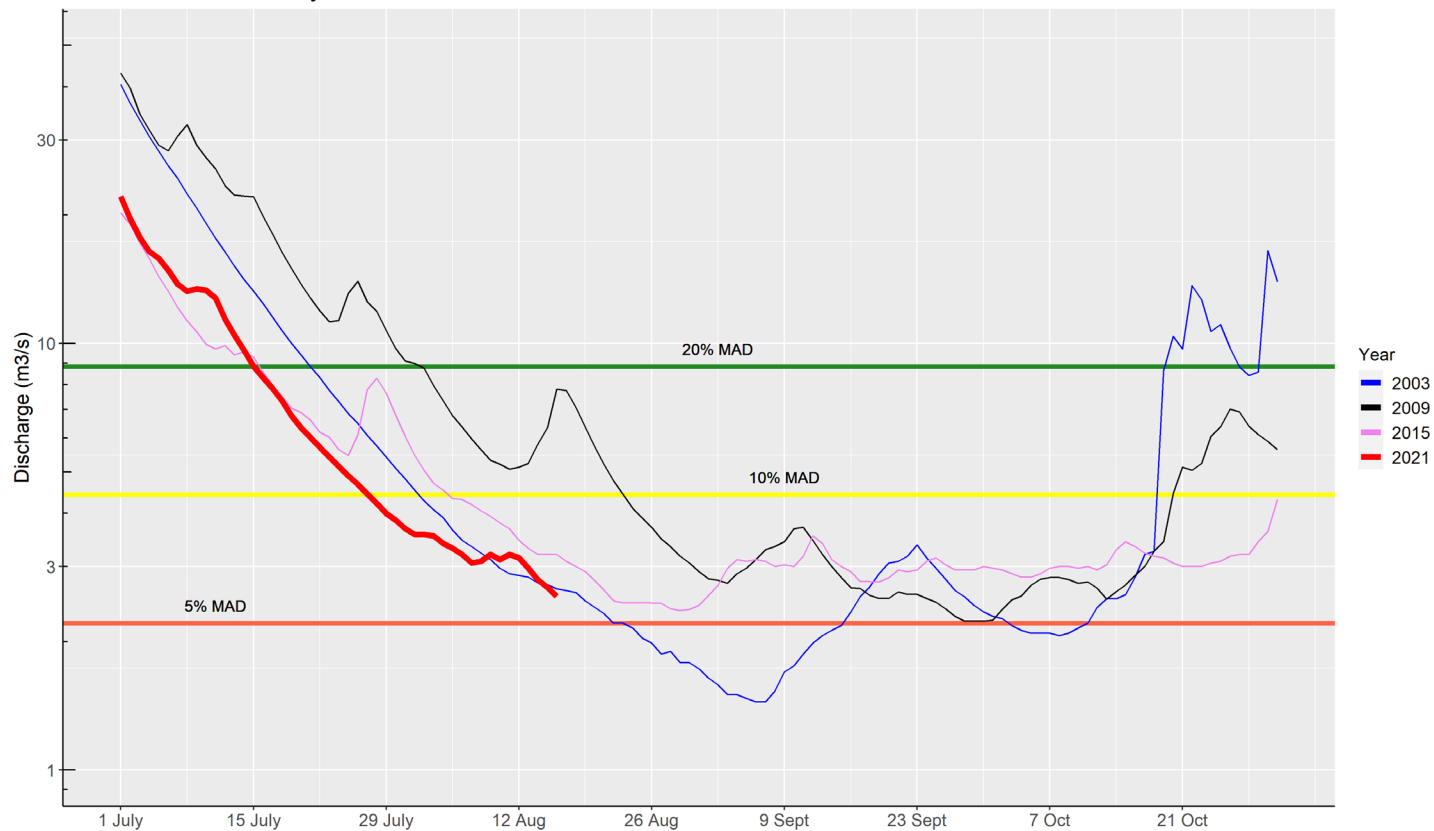
Trapping Creek near Mouth



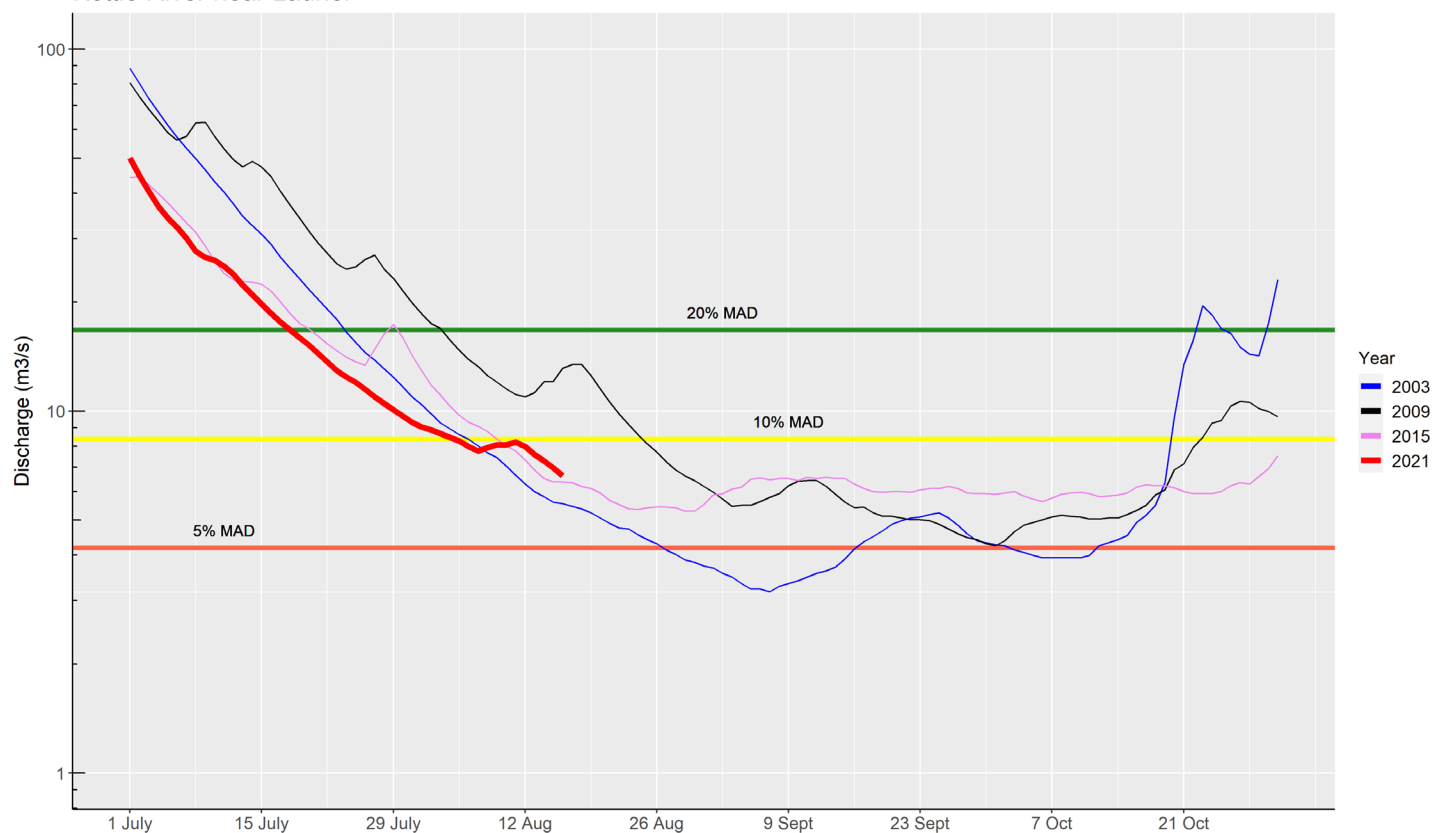
Burrell Creek above Gloucester Creek



Kettle River near Ferry



Kettle River near Laurier



Current Conditions

Total amount of rain that has fallen as of August 1st at some of our local climate stations.

Source: [Kootenay Boundary Water Tool](#)

Climate Station	Amount of rain as of Aug19 (mm)	Average (median) for August
Grand Forks	6 mm	13 mm
Rock Creek	3 mm	10 mm
Eight Mile (Granby watershed)	21 mm	18 mm
Nicoll (Granby watershed)	27 mm	22 mm
Beaverdell	9 mm	18 mm
Ida Bell	15 mm	22 mm

Forecasts

Source: [Environment Canada](#)

Grand Forks

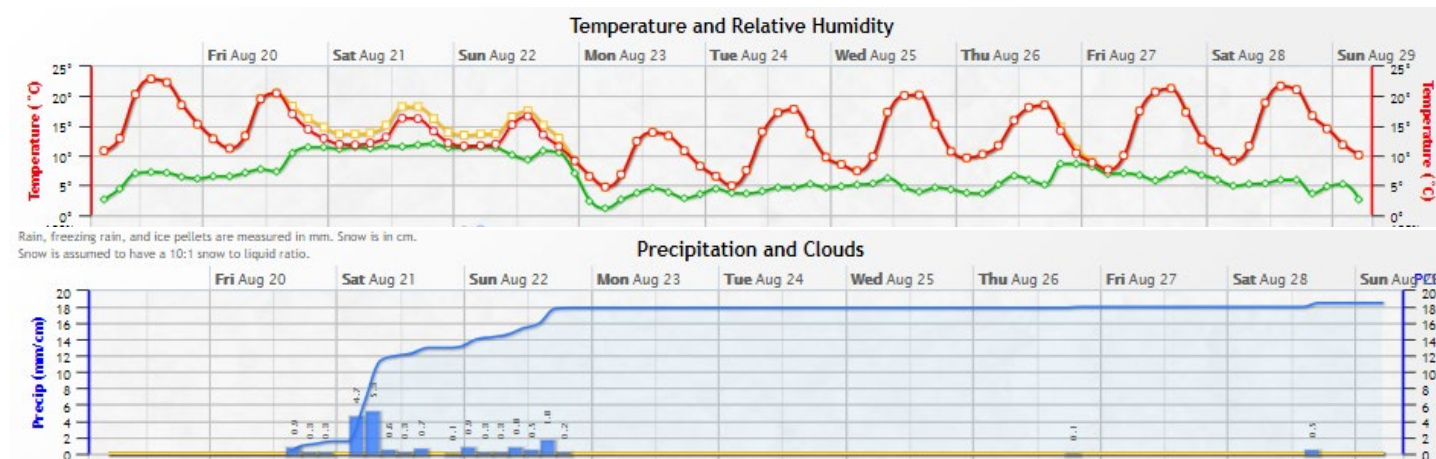
Fri 20 Aug	Sat 21 Aug	Sun 22 Aug	Mon 23 Aug	Tue 24 Aug	Wed 25 Aug
					
25°C	24°C	22°C	21°C	25°C	27°C
30%	40%				
Chance of showers	Chance of showers	Showers	A mix of sun and cloud	Sunny	Sunny

Rock Creek

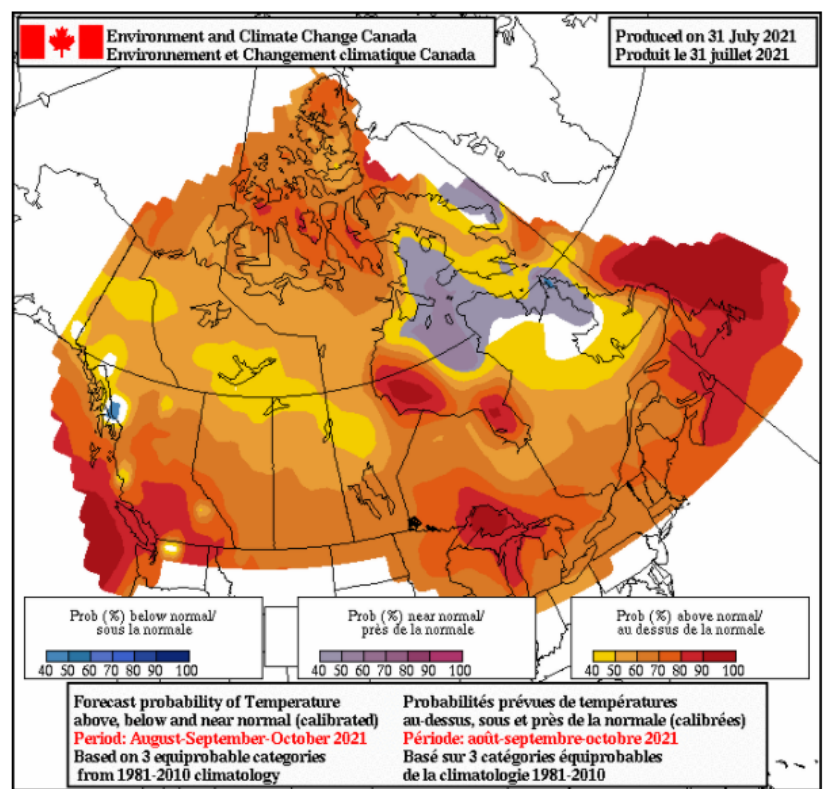
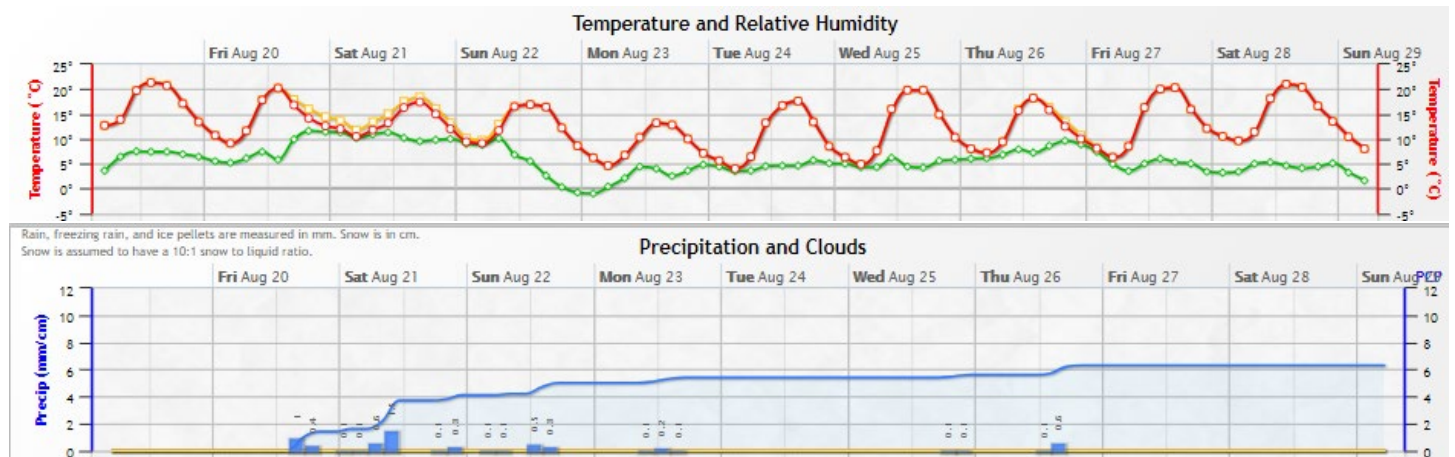
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SPOTWX (Canadian modelling system GEM)

North of Grand Forks



Beaverdell area



[Environment Canada 3 month Temperature Forecast](#) for August-September-October 2021.

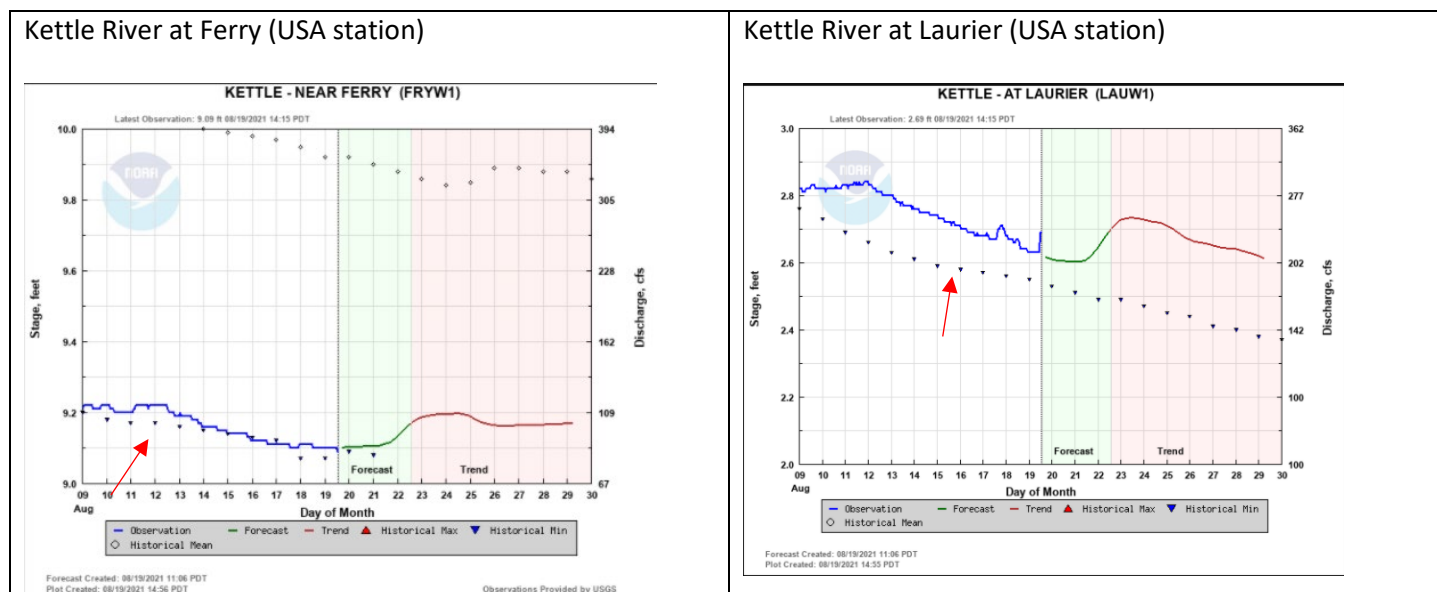
Discharge for monitored streams in the Boundary region relative to their Mean Annual Discharge (MAD). MAD is a value used to assess potential fisheries conditions in streams (in addition to temperature impacts). In general, 10% MAD is needed to support spawning; with greater than 5% MAD for rearing, sustainable habitat and general fish survival.

Stream	Current Discharge (cms)	% of MAD	Comments	Median (average) low flow (cms)	Date of median low flow
Granby River at Grand Forks	1.67	5.4%	between minimum to low quartile	2.23	Sept 16-19
West Kettle River at Westbridge	0.57	4.3%	between minimum to low quartile	1.34	Sept 17-19
Kettle River at Westbridge	1.65	5.9%	at minimum level	2.99	Oct 1-3
West Kettle River near McCulloch	0.07	2.0%	below minimum level	0.35	Sept 13-18
Lost Horse Near Christian Valley	0.002	1.0%	at minimum level	--	--
Burrell Creek	0.112	2.6%	at minimum level	2.36	Sept 15-23
Trapping Creek	0.028	1.9%	at minimum level	--	--
Kettle River at Ferry (cms)	2.41	5.4%	at minimum level	--	--
Kettle River at Laurier (cms)	6.63	7.9%	above minimum	--	--

[Provincial Fisheries Drought Management Plan](#) (2019) addresses high temperature impacts and impacts of low water levels for different fish species.

Discharge (water level) graphs from the [Water Survey of Canada](#) and [Northwest River Forecast centre](#) (USA) websites. Temperature graphs (orange) for three streams: Granby, Kettle and West Kettle.

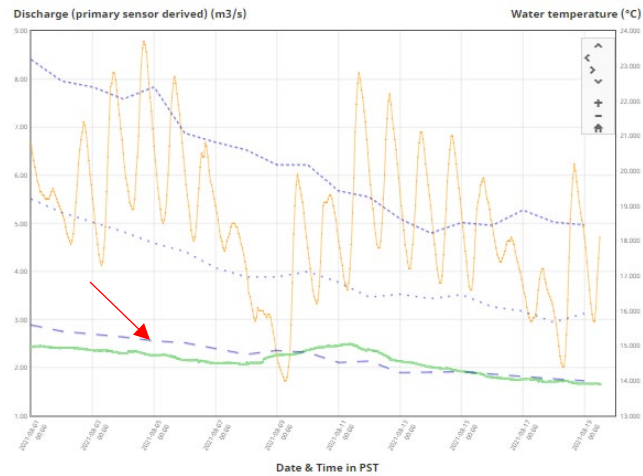
US stations: Blue line is current discharge, green and red lines are forecasted discharge. Red arrow shows the line for minimum recorded level for this station.



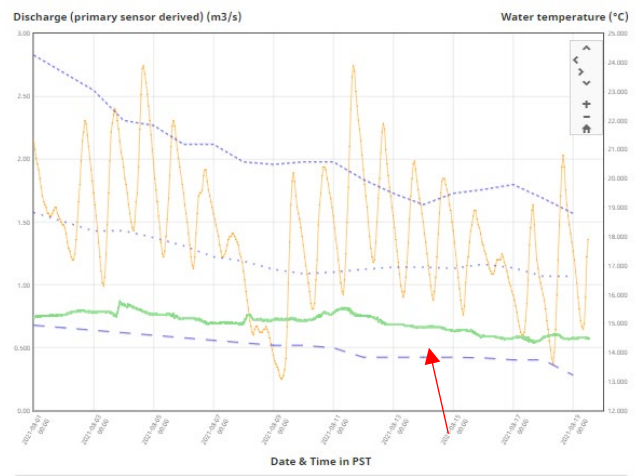
Water Survey of Canada station's legend. Red arrow shows minimum-recorded level, green line is current water level.



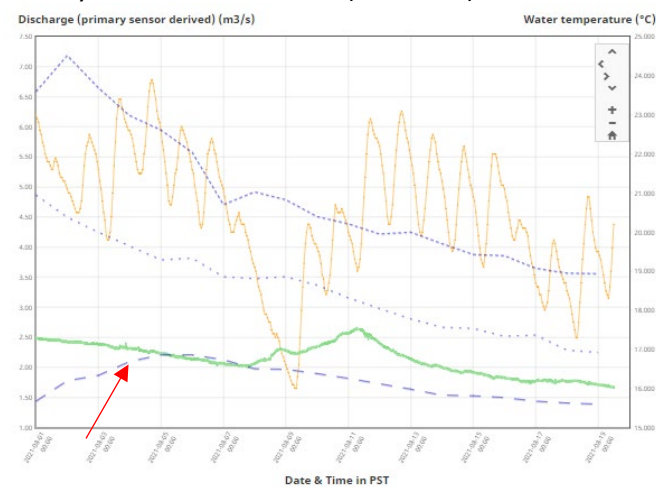
Kettle River at Westbridge (08NN026)



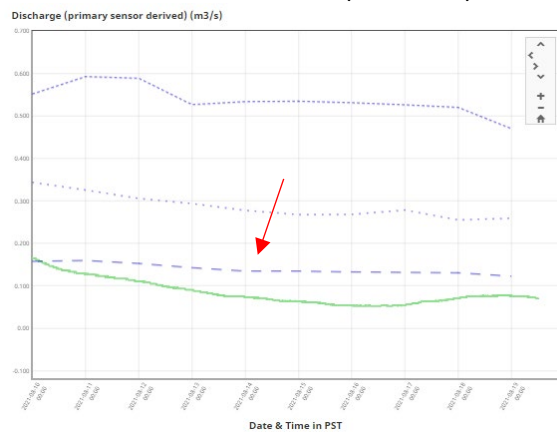
West Kettle at Westbridge (08NN003)



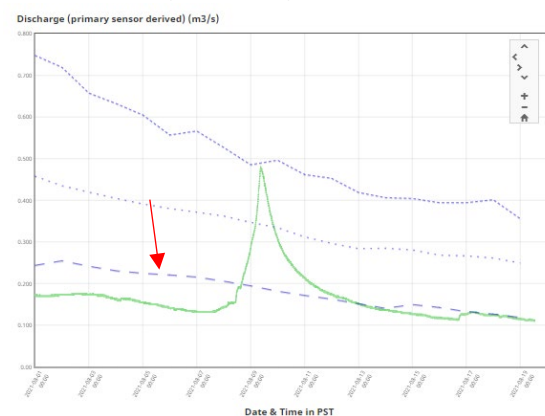
Granby River at Grand Forks (08NN002)



West Kettle near McCulloch (08NN015)



Burrell Creek (08NN023)



Trapping Creek (08NN019)

