

Happy to report that the cooler air temperature and light rain over the past few days resulting in a slight increase in water levels for many of the Boundary streams. Majority of the monitored streams are still recording water levels at or close to minimum levels, these low levels are affecting both our surface and groundwater. The forecast is for hot temperatures over the next few days, with light rain again this weekend.

Comparing 2015 to today

- Based on the agricultural drought, July 2021 was more dry compared to July in 2015 (see graphs below)
- Based on the [7 day average](#) and at today's date: six (6) stations are showing a water level below the 2015 level, two (2) stations are the same as 2015 and one (1) station (Granby River) is slightly higher than in 2015.

Surface and Groundwater levels

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

- The drought level for each stream based on their individual water level shows that eight (8) are at drought level 5 (West Kettle, Kettle, Trapping, Burrell) and one (1) is at drought level 4 (Granby River).
- The weekend's rain and cooler weather resulted in some small increases in water level in many rivers/streams (most obvious in Burrell Creek and Kettle River at Laurier).
- All rivers/streams are showing low water levels, with a few at minimum recorded water level for this time of year.
- In the Boundary, normal summer's lowest water levels occurs mid-September; so many more weeks still to go.
- 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

- With water temperatures (temp) usually tied closely to air temp, we saw lower water temp during this cooler period. This past week's water temp for the Granby, West Kettle and Kettle ranged from 13-24 °C (graphs below).

Past Weather and Forecasts

- Minimal rain from July 1st onwards, until this past weekend. This past weekends saw rain amounts between 9 – 25mm over the watershed.
- Forecasting is for hot weather (low to mid 30s °C) over the next few days, with some rain (estimated 4 - 12mm) this weekend. Forecast for next 3 months (Aug-Oct) is for continued above normal temperatures.

Provincial Information

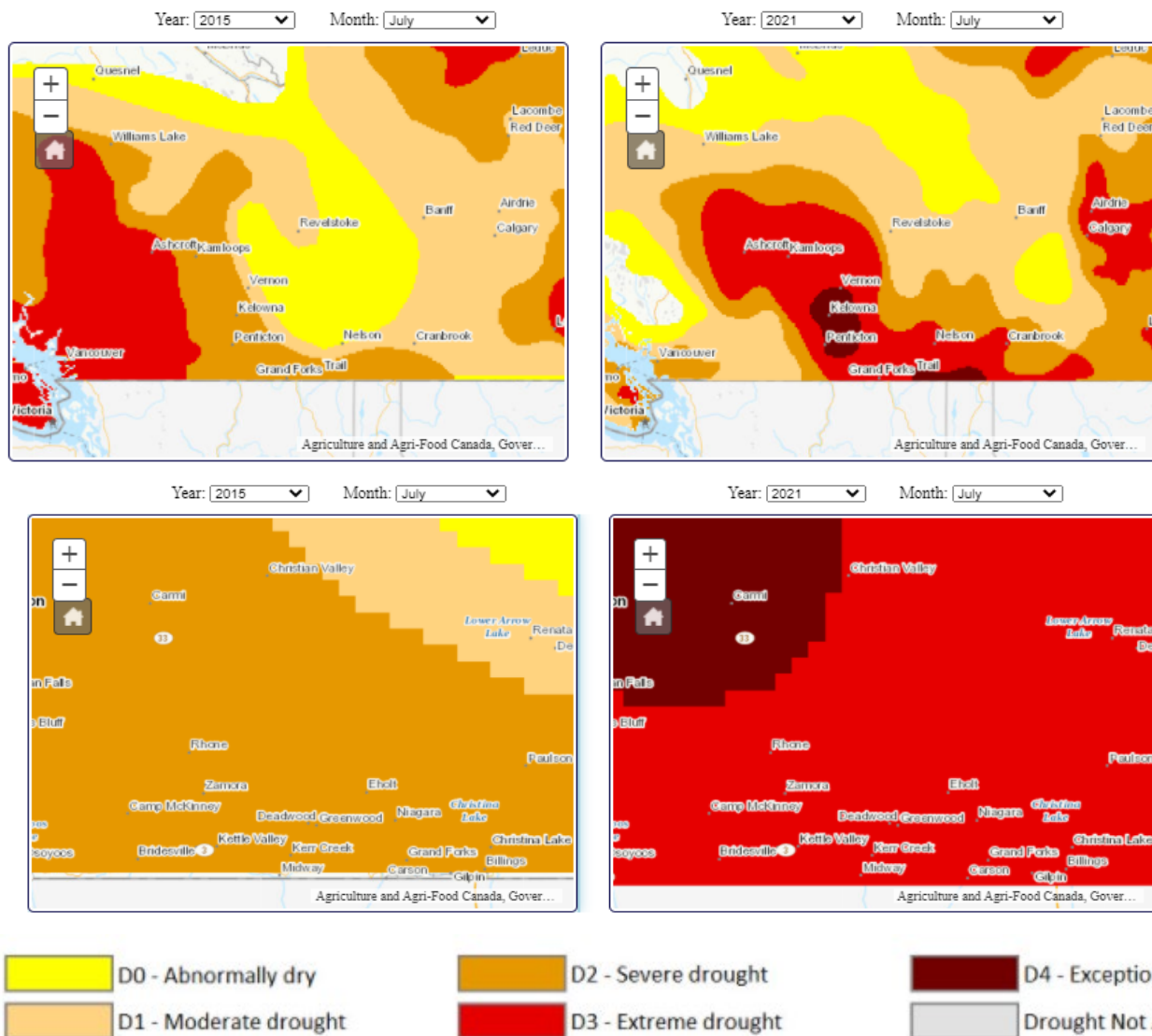
- The Provincial [Drought Classification level](#) has been set to Level 5 (exceptionally dry).
- RDKB attends meetings weekly with the Province, to report low water concerns contact FrontCounterBC@gov.bc.ca or watershedplanner@rdkb.com.

Be WaterSmart. Use water wisely, every drop counts

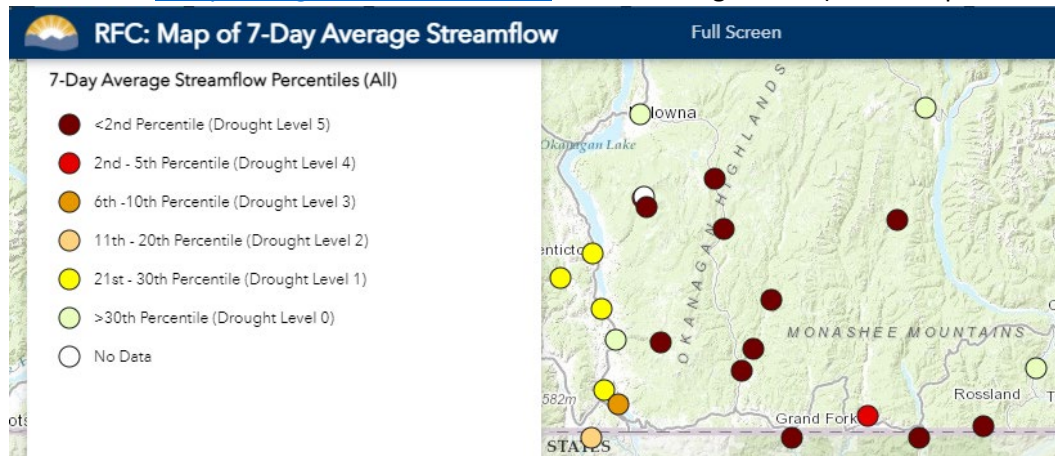
- Repair water leaks, fix dripping taps, use soil water meters to effectively (and deeply) water your site, water during evenings and early mornings to reduce evaporation, while making sure your sprinklers aren't watering pavement.
- Reduce unnecessary indoor and outdoor water use.
- Think before you 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?
- Water conservation tips: https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/water-planning/water_conservation_tips_brochure.pdf

Agricultural Drought comparison by year: July 2015 to July 2021

<https://agriculture.canada.ca/en/agriculture-and-environment/drought-watch-and-agroclimate/canadian-drought-monitor/drought-analysis/monthly-comparisons>

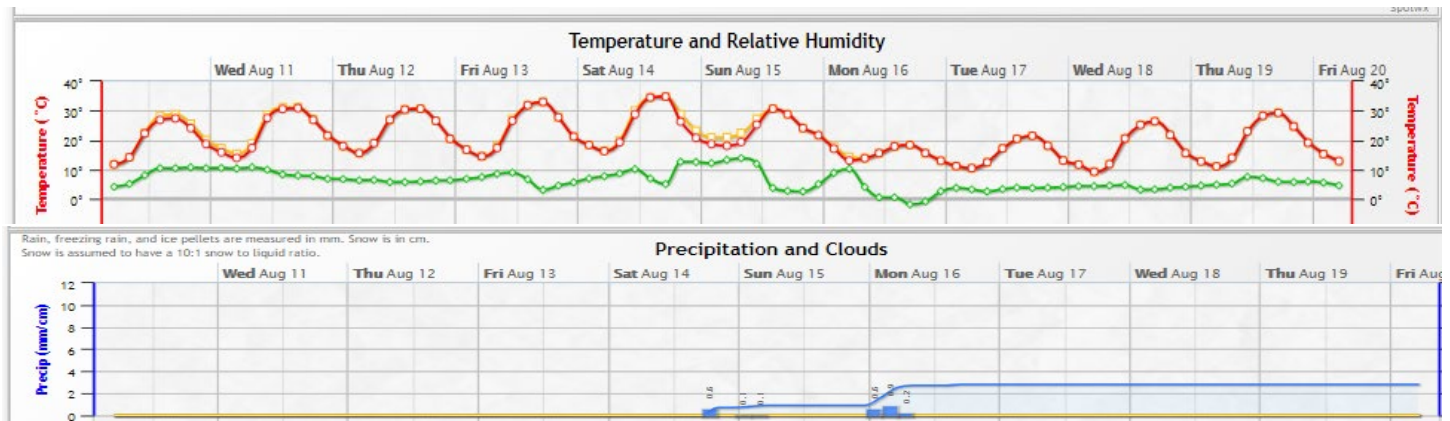


The current [7-day average stream water level](#) and the drought level (based on percentile) associated with each stream.

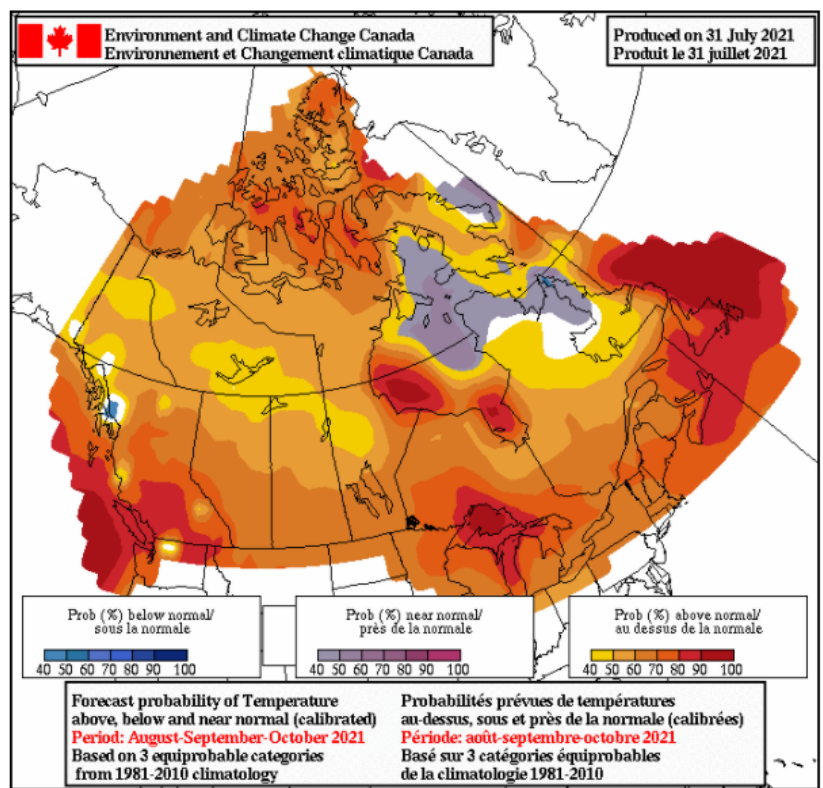
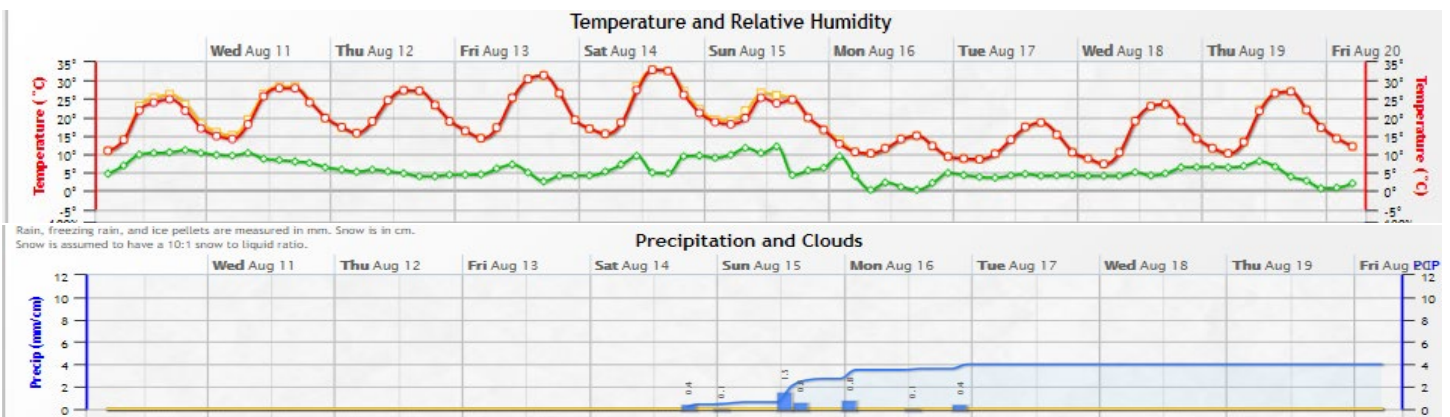


Forecasts from SPOTWX (Canadian modelling system GEM)

Grand Forks area



Beaverdell area



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

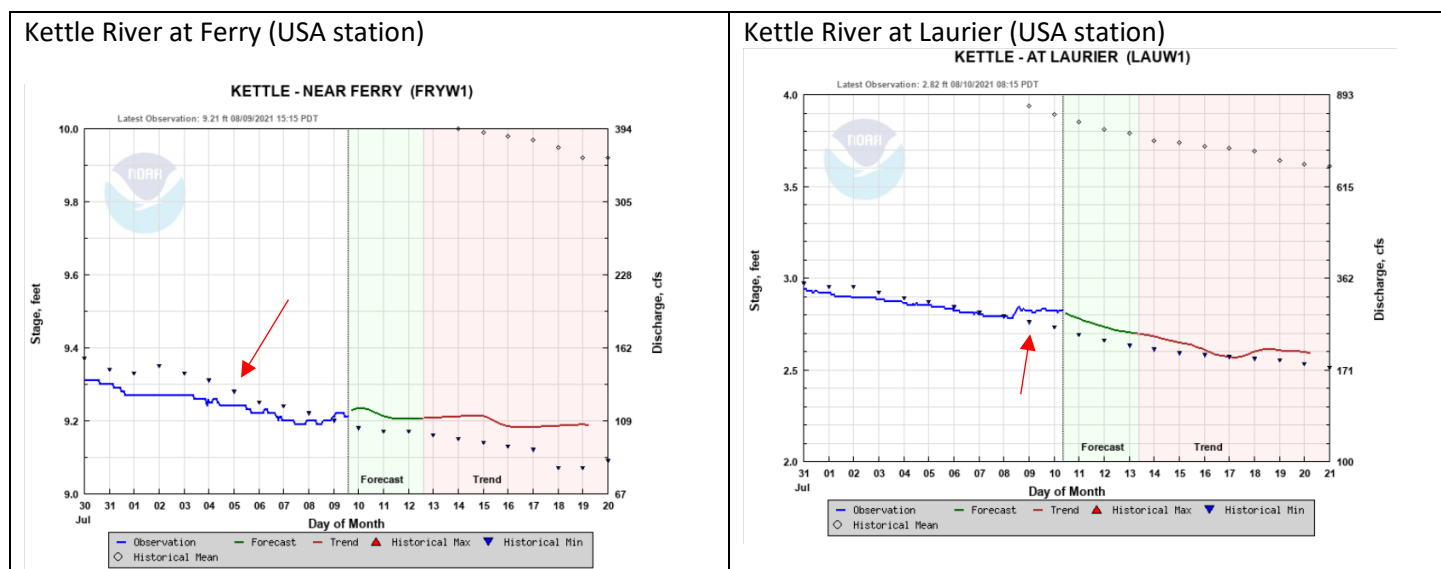
Discharge for monitored streams in the Boundary region relative to their Mean Annual Discharge (MAD). MAD is a value used to assess potential fisheries conditions in streams (in addition to temperature impacts). In general, 10% MAD is needed to support spawning; with greater than 5% MAD for rearing,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

Stream	Current Discharge (cms)	% of MAD	Comments (for August 10, 2021)	Drought level (7 day avg)	7-day average below 2015?
Granby River at Grand Forks	2.54	8.2%	between minimum to low quartile	4	higher than 2015
West Kettle River at Westbridge	0.72	5.4%	between minimum to low quartile	5	below 2015
Kettle River at Westbridge	2.41	8.6%	almost at minimum level	5	below 2015
West Kettle River near McCulloch	0.15	4.4%	at minimum level	5	below 2015
Lost Horse Near Christian Valley	0.005	2.5%	between minimum to low quartile	5	same as 2015
Burrell Creek	0.268	6.1%	between minimum to low quartile	5	same as 2015
Trapping Creek	0.047	3.3%	almost at minimum level	5	below 2015
Kettle River at Ferry (cms)	3.14	7.1%	just above the minimum level	5	below 2015
Kettle River at Laurier (cms)	8.07	9.6%	just above the minimum level	5	below 2015
Colour coding for % of MAD			5% or under	5.1 to 10%	10.1 to 20%

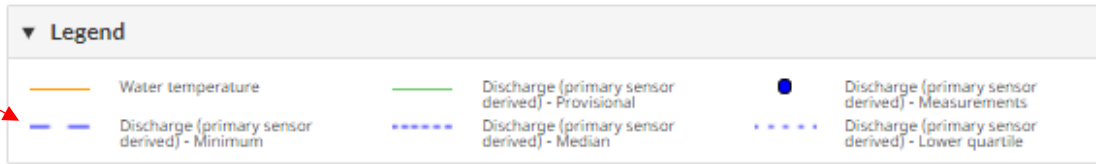
[Provincial Fisheries Drought Management Plan](#) (2019) addresses high temperature impacts and impacts of low water levels for different fish species.

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.

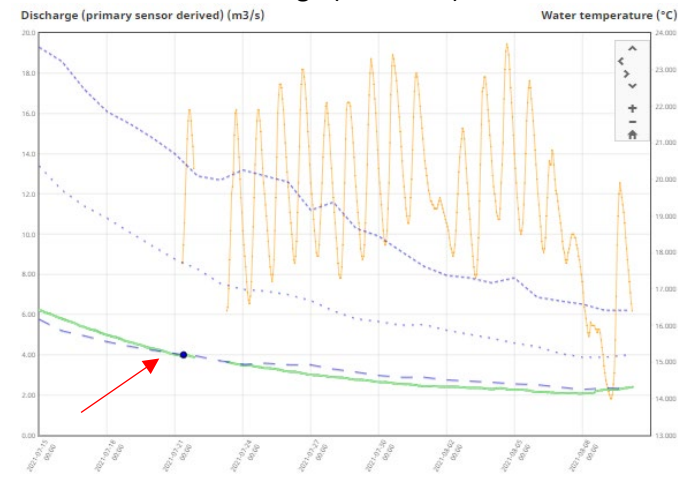
US stations: Blue line is current discharge, green and red lines are forecasted discharge. Red arrow shows the line for minimum recorded level for this station.



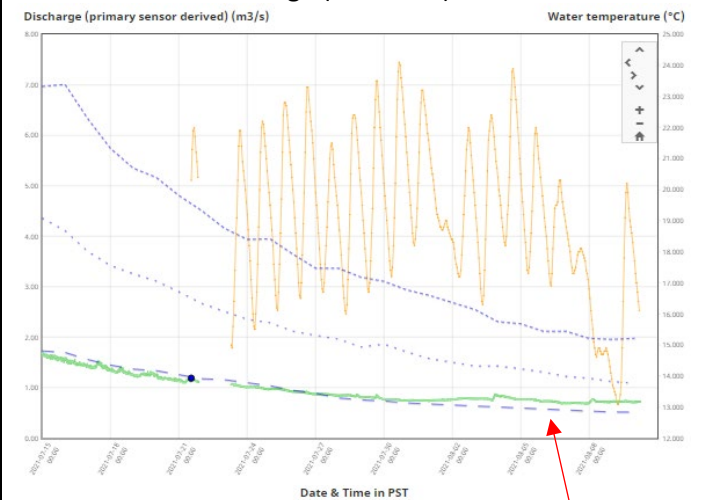
Legend for Water Survey of Canada stations. Red arrow shows minimum recorded level, green line is current water level.



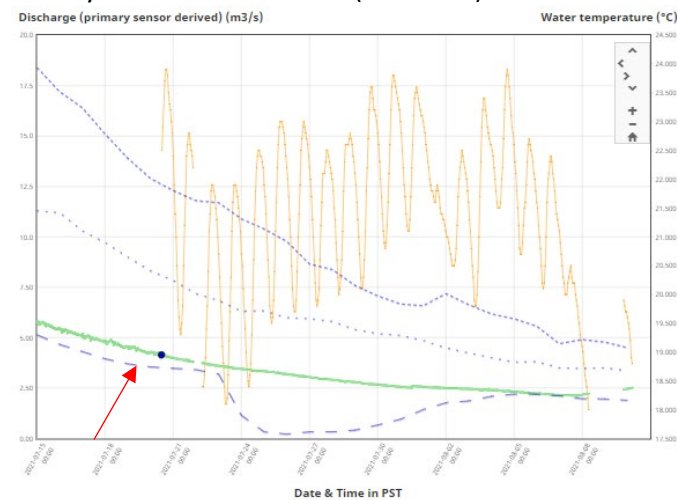
Kettle River at Westbridge (08NN026)



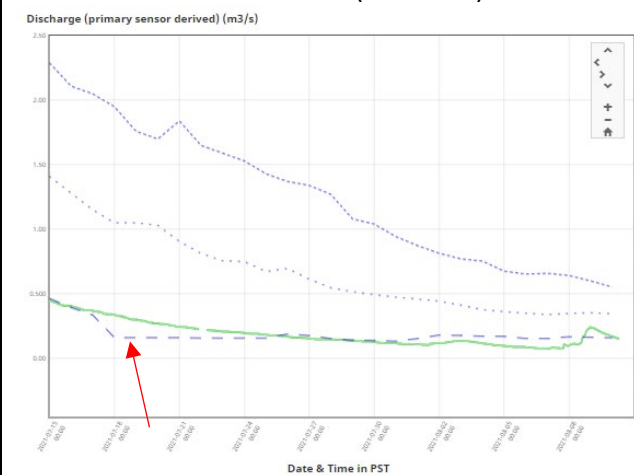
West Kettle at Westbridge (08NN003)



Granby River at Grand Forks (08NN002)



West Kettle near McCulloch (08NN015)



Burrell Creek (08NN023)

