

2016 Water testing results following aerial treatments of Btk (*Bacillus thuringiensis* var. *kurstaki*)

In June 2016, forested areas in the Eel River and Charlo River watersheds and Miramichi River were sprayed with one application of Btk to control a growing spruce budworm population in that area. Btk is a naturally occurring bacterium that has been used for decades to control caterpillar pests in organic agriculture greenhouses and forestry. Btk is being used in the early intervention research to control spruce budworm populations.

The Eel River and Charlo River watersheds provide drinking water to several communities in northern New Brunswick, and the Miramichi River is a popular destination for locals and tourists. In response to concerns about water quality, a water monitoring project was initiated by the Healthy Forest Partnership. Water samples were collected from within the watershed (reservoir and river) and two sites in the Miramichi River. Samples were taken 1 week prior to treatments and (due to restricted access at the time of treatment, no pre-sampling for Btk occurred at the Miramichi River) and 2 days and 2 weeks after the spraying of Btk.

The toxicity of Btk is measured as the number of colony forming units (CFU) per millilitre (mL) of water. Numerous tests conducted over decades on rodents determined that no toxicity occurred up to 125 000 000 CFU/mL. The highest level of Btk was found in the reservoir (12 CFU/mL) and these levels are less than the previous year's water testing because unlike in 2015, samples were not taken immediately after a rainfall event. This level is over 200 000 times less than what has ever been tested (and still found to cause no adverse effects).

The 2016 Early Intervention Strategy research treatments resulted in what are essentially trace levels of Btk. Even at worse case scenarios, there are no adverse effects were found on birds, mammals or aquatic species for Btk. Only feeding larvae are susceptible.

If you would like a copy of the water report, please contact the Healthy Forest Partnership via the website (healthyforestpartnership.ca) or telephone (1-844-216-3040).

Site Name	Pre-treatment (CFU/ml)	+2day (CFU/ml)	+2week (CFU/ml)
River	0.38	1.83	0.38
Reservoir	0.63	12.28	1.59
Miramichi River	N/A	0.44	0.02

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