

# Barnes Leap Loop Tributary Study

In this experiment a tributary feeding into the Cathance River was studied. The tributary was split into eight different sections or reaches. A Stream Corridor Survey was conducted for each reach.

The purpose of this experiment was to determine how physical and biological characteristics of the Barnes Leap Loop tributary change with the distance from the Cathance River.

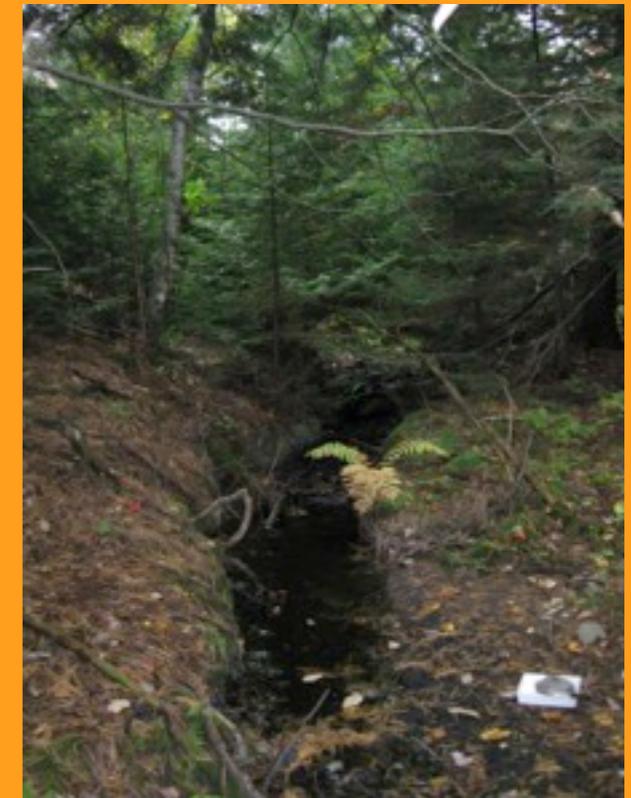
The hypothesis was the farther away from the Cathance River, the lower the amount of algae and murkiness of the water, and that the water temperature would also decrease.

The water temperature generally decreased in the reaches furthest from the Cathance River. This was expected after completing background reading on the subject.

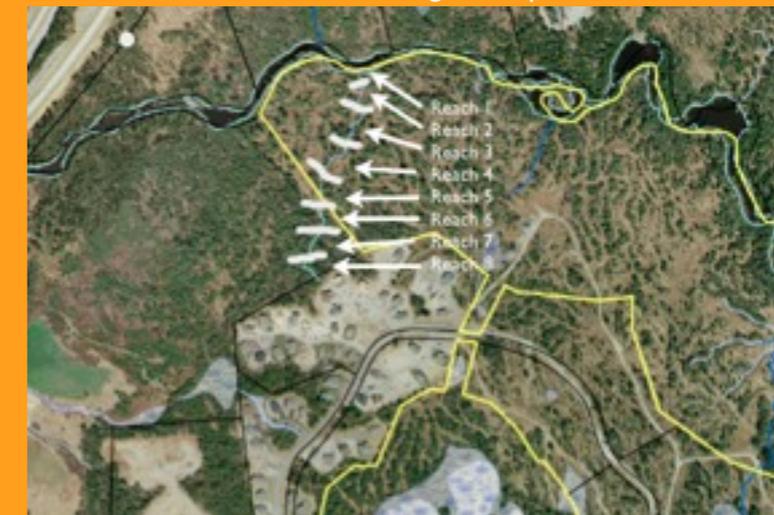
The most algae was found near the mouth of the river. This was unexpected because typically algae is found in the middle or channel section of a stream or river. Another reason this was surprising was because the mouth of the tributary had less sun exposure than the rest of the tributary, and sunlight is needed for the algae to perform photosynthesis.

The water was murkiest in the middle reaches of the tributary. This is most likely because of the stream side cover in these areas was more trees and more woody debris in the water. The trees put leaves and pine needles into the water as organic material, and this decomposition added to the murkiness.

Normally macro invertebrates and insect larvae are found more upstream where the organic material and photosynthesizing algae is. However, in this case the algae was located closer to the mouth which brought the macro invertebrates with it, and none were found upstream with the organic material.



Digital Map of the 8 Reaches



This data table summarizes the data collected while surveying the reaches.

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Reach	Water Appearance	Water Odor	Stream Bank Shape	Stream Side Cover	Stream Bottom	Water Temp. (F)	Algae Color and Amount	Channel Shape	Amount of Macro Invertebrates Present
#1	clear	None	vertical/ undercut	logs, large woody debris	silt/clay/mud	54°	none	Narrow, shallow	Rare
#2	clear	None	gradual/no slope	logs, large woody debris, root wads, overhanging vegetation, rocks	rubble	61°	brownish, occasional	Wide, shallow	Rare
#3	clear/oily sheen	rotten eggs	gradual/no slope	logs, large woody debris, root wads, overhanging vegetation, small woody debris, rocks	silt/clay/mud, sand	55°	None	Narrow, shallow	Rare
#4	clear, foamy	None	gradual/no slope	logs, large woody debris, overhanging vegetation, small woody debris, deep water	silt/clay/mud, sand, cobble, rubble, boulder	52°	brownish, occasional, light coating	Wide, shallow	None
#5	clear	mud	vertical/ undercut	logs, large woody debris, overhanging vegetation, small woody debris, undercut banks	silt/clay/mud, sand, gravel	42°	occasional	Narrow, shallow	None
#6	light brown	None	gradual/no slope	logs, large woody debris, root wads, overhanging vegetation, small woody debris	silt/clay/mud, sand	48°	None	Narrow, deep	None
#7	clear	None	gradual/no slope	overhanging vegetation, small woody debris	silt/clay/mud, sand	47°	Occasional, light coating, brownish	Narrow, deep	None
#8	clear	rotten eggs	vertical/ undercut	logs, large woody debris, overhanging vegetation, small woody debris, undercut banks	silt/clay/mud, pea gravel, gravel	49°	None	Narrow, shallow	None