

Cains River Beaver Dam Project 2011
Jenny Reid
Biologist Miramichi Salmon Association

Introduction

Beavers can block off access to spawning areas by building large dams or building dams in culverts or fish ladders. The effect of beaver dam blockages can be pronounced during a fall season with little rainfall and low flows, which do not afford Atlantic salmon enough water to jump over the dams. Salmon will congregate below the dams and if they cannot access the additional habitat in time, they will dig nests on top of each other which can kill the eggs in the underlying nests. This reduces the number of juvenile salmon that will hatch the following year. Areas that fish cannot access for spawning, become devoid of juveniles, do not contribute to the production of salmon on the river, or provide food for wildlife (ie. eagles, otters). Beavers typically build dams on smaller streams, which are excellent rearing areas for juvenile salmon due to the habitat quality, fewer numbers of large predators and cooler stream temperatures.

Beaver numbers have likely increased due to the decrease in people trapping beaver which has resulted in more beaver dams and more blockages for migrating fish. Most people trap to supplement their income with few people relying on it for their sole income. Over the past three years beaver pelt prices have been at the lowest point since the 1993/1994 season, and beaver harvests have declined over the past 5 years.



Prior to 2006, few salmon fry were found on Bett's Mills Brook despite the building of a new fish ladder near its mouth. In 2006, the beaver dam blocking the fish ladder, as well as 21 additional beaver dams were notched/removed on Betts Mills Brook which resulted access to more than 50,000m² of spawning habitat and resulted in fry being found in the brook the following year. Porter Brook and Big Hole brook have high quality salmon habitat and high densities of salmon fry have been counted in years that salmon were able to access spawning habitat upstream of these beaver dams.

Maintaining and increasing the number of adult Atlantic salmon that return to the river each year will ensure a strong and stable outfitting and guiding industry in NB, and provide the highest quality Atlantic salmon fishing experience in the province. One of the ways that we can do this is to increase juvenile salmon production by allowing adult fish access to spawning habitat above beaver dams.

The focus of this project was on the lower section of the Cains River, from Rte 123 downstream. This section was focused on because the lower sections of the river are warmer in summer than the upper reaches, there are large tributaries with good habitat that are blocked by beaver and the Cains has lower juvenile production than should be expected.

Methods

In the fall of 2011, the Miramichi Salmon Association staff surveyed brooks on the lower section of the Cains River from Rte 123 downstream to the mouth to locate active beaver dams and have the beavers and dams removed. MSA crews were made up of Tyler Storey (MSA technician), Matt Ward, Tyler Coughlan and Colby Donovan. The rivers and brooks that were surveyed included Blue Rock Brook, Ten Mile Brook, McKenzie Brook, Mahoney Brook, Trout Hole Brook, Six Mile Brook, Muzroll Brook, Sabbies River, Little Otter Brook and an unnamed brook.

Active beaver dam locations were given to a “nuisance wildlife trapper”, and he removed the beavers. A nuisance trapper possesses a special permit to remove beavers out of season, since the furbearer season is from October 30 to January 1st, after the



Tyler Coughlan marks the location of an active beaver dam for the trapper

majority of salmon have spawned. On the brooks where the beavers were removed by the nuisance trapper, all of the beaver dams were removed. On the brooks where beavers were not removed, all of the active dams (dams with beavers) were notched so that salmon could pass through and abandoned dams were removed from the brook so that salmon could swim upstream in time to spawn. The dams on these brooks were notched at least one time with some being notched twice.



Surrounding Island Pool on the Cains River at Camp Admiral (Photo Credit Tom Doyle)

Results

The beaver dam surveys took place in September and continued into October and removing and notching of dams took place in October. The main stem of the Cains from Rte 123 to Shinnickburn was canoed in order to survey small brooks that were not accessible by road. Salmon Brook was not surveyed due to issues with accessibility. Some of the streams were difficult to canoe, due to the water depth. In some cases the

canoes were dragged downstream over 1 km before there was enough water to paddle downstream. Many of the upper stretches of brooks, such as McKenzie Brook, were full of alders which made walking or “paddling” through them very difficult. Weather conditions were favorable as there was no early snow in October; however the rain was both a blessing and a curse. It provided more water so brooks could be canoed easier however made for unpleasant working conditions while tearing out dams. In total 88 beaver dams on the Cains were removed/notched and 15 beavers were trapped. It was hoped that more beavers would be trapped, but due to time constraints of the trapper and the inaccessibility of the beavers and dams, not as many beavers were removed.

Atlantic salmon were observed below beaver dams on the West branch of the Sabbies River this fall. The dams were notched by Tyler and Colby, and the salmon immediately continued swimming upstream to available spawning habitat.



Tyler Coughlan notches a beaver dam on the Cains

Table 1. The approximate number of kilometers (km) of brook surveyed, number of active and abandoned beaver dams found on each stretch and the numbers of beavers removed from each stretch.

Tributary	Km of brook surveyed	Active Dam	Abandoned Dam	Total Dams	Beavers Removed
Blue Rock Brook	4.3	3	5	8	0
Little Otter Brook	0.8	5	5	10	2
Mahoney Brook	2.0	0	0	0	0
McKenzie Brook	7.1	10	1	11	5
Muzroll Brook	34.0	10	3	13	0
Sabbies River	18.2	5		5	0
Six Mile Brook	21.6	10	1	11	5
Ten Mile Brook	3.5	9	9	18	3
Trout Hole Brook	0.5	0	0	0	0
unnamed Brook	0.3	0	0	0	0
Grand Total	92.3	60	28	88	15

The salmon collected on the Cains River spawned between October 17th and October 28th. Actual egg counts cannot be conducted until February but it is estimated that approximately 25,000 eggs were fertilized. These fry will be released into tributaries of the Cains River in early June of 2012. It is estimated that the stocking will result in approximately 15 adults returning to the Cains River in 2015 or 2016.

Acknowledgements

We would like to acknowledge the donations made by the MSA members for this project, without the donations this project would not have been possible.

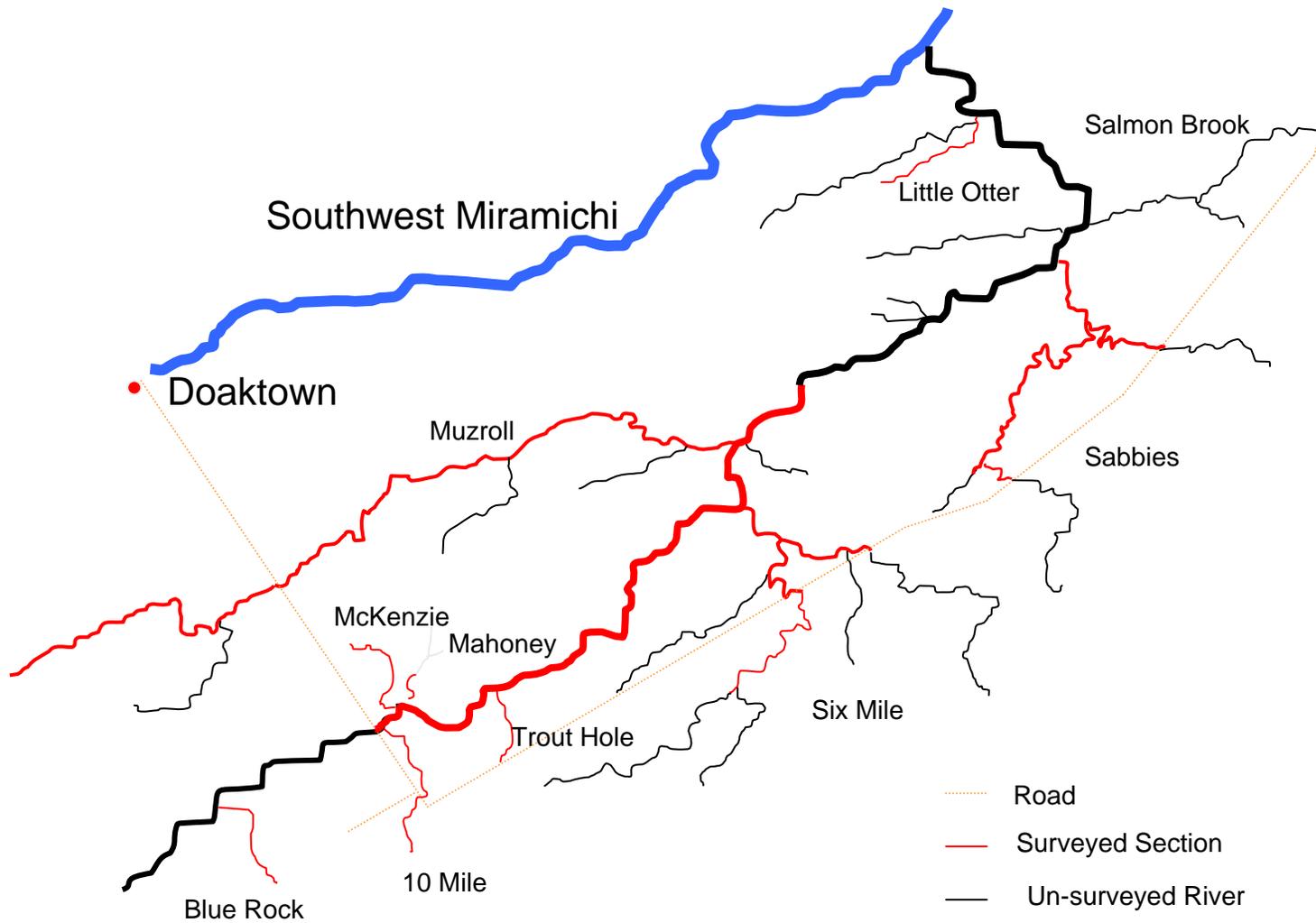


Figure 1. Areas of the Cains River that were surveyed for beaver dams.