

Commercial Logging in a Protected Water Supply Area:

Spotlight on Corner Brook Pulp and Paper Limited's Operations in the Town of Steady Brook

Background

The town of Steady Brook is located 10 km east of Corner Brook on the West Coast of the island of Newfoundland in the province of Newfoundland and Labrador (NL). The Humber River and mountains surround this beautiful community (Percy, n.d.). The town is known for its stunning scenery, quaint atmosphere and the Marble Mountain ski hill. The town has a slightly declining population, going from 435 residents in 2006 to 408 residents in 2011 (Statistics Canada, 2012).

This profile on the town of Steady Brook focuses on the town's experience with the activities of Corner Brook Pulp and Paper Limited (CBPPL) in their Protected Water Supply Area (PWSA). The intention of this profile is to provide a positive example of industry working with local government towards source water protection goals in mixed-use watersheds, as well as proactive watershed management activities in a community of 1,000 or less. Key informant interviews were conducted and legislation, policies and associated documents related to the management of Steady Brook's PWSA were reviewed in order to complete this case study. This case study is part of the *Exploring Solutions for the Sustainable Rural Drinking Water Systems* research project. More on this project can be found at: <http://nlwater.ruralresilience.ca>

Drinking Water System

Steady Brook's drinking water comes from the Steady Brook basin, which is a surface water supply. This supply is designated as a Protected Water Supply Area (PWSA) under the *Water Resources Act* (Hearn, 2005). The town uses gas chlorination for the treatment of drinking water and a FILTOMAT system for filtration,

which is made up of coarse and fine screens to filter the water (Government of NL, 2014a; Triangle Filtration & Irrigation, n.d.). The system is operated and maintained by a member of the maintenance staff.



FILTOMAT Filter in the Pump House

Steady Brook has not had a drinking water quality index (DWQI) rating since August 31, 2005 due to issues such as high trihalomethanes (THMs), high haloacetic acids (HAAs) or the presence of a boil water advisory when the rating was taken (Government of NL, 2014b). These high disinfectant by-products (e.g., THMS and HAAs) and chronic boil water advisories are associated with the sedimentation in their surface water source supply. It was explained:

The quality is, where we are on a brook, every time we get a heavier rain, it just picks up everything in the woods and just comes down to the brook where we get a lot of sediment so our water will turn yellow. And if it is turning yellow it is that much stuff in it that is eating the chlorine and then I turn the chlorine way up and it just eats it, time it gets to here there is no chlorine left.

- Municipal representative

Key informants from Steady Brook indicated that the water is drinkable, however due to the discolouration of the water many residents complain about the water and the staining of appliances. Furthermore, boil water advisories are a great inconvenience for businesses in the area such as the ski hill and restaurants, which have to bring in bottled water during boil water advisories. Also, the municipality often waits long lengths of times for the Government of NL ('the Province') to lift boil water advisories, which they attribute to a lack of Environmental Health Officers at the NL Services lab to test the samples.

In order to resolve the issue with the quality of the current source water supply Steady Brook has been given funding in a 90/10 cost share agreement with the Province, to switch their water source from the current surface water supply (Steady Brook watershed) to an artesian well source. The current water source would only be used in emergency situations such as supplying water for when there is a fire. The town is also considering installing a chlorine analyzer that would automatically alert the water operator when chlorine levels are below the required levels. As of now, chlorine residual is checked once daily in two locations in the town. The town also has a smart valve that is supposed to read the chlorine levels and automatically decrease levels when it is too high, however the smart valve hasn't worked in over a year.

Watershed Management in Steady Brook

Steady Brook has labeled itself a 'green' community, encouraging community recycling and composting, limited use of pesticides and displaying proactive watershed management measures (Percy, n.d.; Hearn, 2005). As early as 2000, Steady Brook established its first Watershed Monitoring Committee (Hearn, 2005). In fact several key informants interviewed stated that Steady Brook has the most active Watershed Monitoring Committee in the province.



View of Steady Brook's Watershed

In 2005, Steady Brook's watershed management plan was released. This plan was initiated due to the concerns of councilors and residents regarding development and trail creation for snowmobiles and other recreational vehicles in their drinking water supply area. The plan took two years to complete, as there was significant public consultation as part of the planning process. Baseline technical studies and mapping were also undertaken during the process with the help of Western Newfoundland Model Forest, the Department of Environment and Conservation, and the Department of Natural Resources. The Western Newfoundland Model Forest Network provided the funding and expertise for the writing of the watershed management plan. One key informant explained the need for the plan:

... to me there is nothing like preventive measures, if you don't do preventative

measures from the beginning it is too late after the horse has left the barn, right? You get it up there first and get your protection all in and get your buffers in and get everything done then.

- Municipal representative

It was noted that the hardest part of creating the plan was getting the funding and creating a group of committed team members in the community that see the importance in the process. It was noted that the chair of the planning committee, who was also the Mayor at the time, was the champion for the creation of the watershed management plan.

The town of Steady Brook's process for developing a watershed management plan is now used as a template for watershed planning in NL by the Department of Environment and Conservation. A provincial employee stated:

They're very proactive, which is not something you see a lot in small communities, so it's really great to see in a town like the size of Steady Brook, but also because they have the capacity to do it. They have, it seems to me, they have a little more funds than some of the other small communities so they have the capacity to push it, they think big for a very small town.

- Provincial representative

Clearly, the watershed management efforts exemplified by Steady Brook is the exception not the norm in rural NL. Steady Brook's watershed management plan further adds to the PWSA regulations under the *Water Resources Act*, which they felt did not provide them complete protection for the various uses in the Steady Brook watershed. Therefore, as per the *Municipalities Act*, council further elaborated on regulations to prevent pollution of their drinking water supply source. For example it states in the watershed management plan that activities not permitted

in their water supply include more specifically, "...using ice-covered water bodies for riding skidoos, ATVs, etc.; clearcutting of forests in sensitive areas; resorts, hotels/motels and golf courses; specific activities, operations or facilities associated with aggregate extraction and mineral exploration; and application of herbicide in the right-of-way (power line)."

(Hearn, 2005, p.64)

The benefit of the watershed management plan was noted as:

I feel my water is protected somewhat, I can drink my water with a clear conscious unless something really goes awry you know what I mean? I feel that we are doing a good job in protecting our water and making everyone aware that it is a protected water supply area, otherwise if we didn't do that way in there back, you know how far in it is, way back in those mountains, what do you think all those snowmobiles and all those ATVs and all of those dirt bikes and everything, they would be in there having a field day on our water if we didn't have a buffer zone and we didn't have a water protection area, and management plan, they would be in there fishing everyday.

- Municipal representative

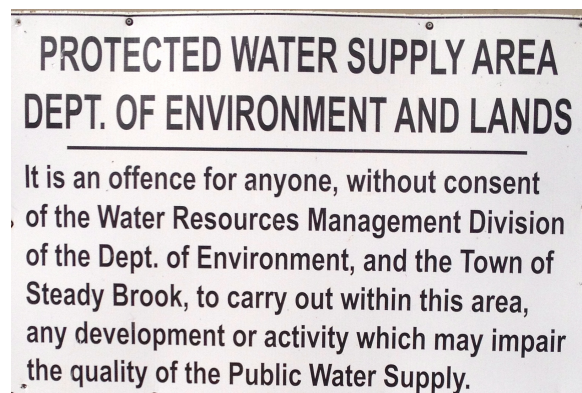
It was discussed with key informants that the plan accompanied by public education efforts is an important part of governing their drinking water supply.

Governance of the PWSA

Steady Brook's PWSA is a mixed use watershed, used for drinking water, snow making, boating, canoeing, fishing and other water activities. The watershed also hosts land use activities such as recreation and tourism (e.g., cabins, skiing, snowmobiling, ATV use) and commercial forestry (Hearn, 2005). Steady Brook's PWSA is monitored by the Watershed Monitoring

Committee. The committee is currently made up of town councilors, residents, and representatives from CBPPL, Department of Environment and Conservation, Department of Natural Resources, and Marble Mountain. This committee meets regularly (usually every couple of months). Also, members from the watershed management committee physically monitor the PWSA every couple of months to ensure no one is violating their PWSA regulations and the stipulations outlined in the watershed management plan.

There has been some concern by town representatives of the ineffectiveness of Crown Lands in managing land uses within the watershed. There are cases where old cabins need to be taken down, for example, and the town feels these cabins pose a threat to their water supply. The town allows activities they consider to be low risk activities such as berry picking, but does not allow activities such as swimming, boating or the use of ATVs. They have actively enforced the ban of these activities, going as far as to block a resident's boat in the PWSA when it was left there over night.



Sign Located in the PWSA in Steady Brook

CBPPL has been actively logging in the Steady Brook PWSA since 2010. However, CBPPL has logged in the watershed in the 1960's before it was designated as a PWSA. CBPPL is an active member of the Watershed Monitoring Committee, and works with Steady Brook to determine precautionary actions they should

take to protect the town's drinking water supplies. There are alterations CBPPL has made to their standard operating practices to adhere to the Town of Steady Brook's watershed stewardship requests. One such request was to only cut in the winter, and therefore only build winter roads (rather than all-season roads). This was done to limit public access to the PWSA. It was explained about the compromises CBPPL made with Steady Brook in order to cut in their PWSA:

...and that compromise was basically forestry wanting to go in and cut but also appeasing the town to limit access, because had they put a full road right to where they wanted to put it you would literally be able to jump in your jeep and go right through your water supply area. And now they can't because we sat down and talked about how we can get the best of both worlds in there so they can do their cutting but not allow access for recreation. So that's my shining star of a success as to why we have plans and why we have source water protection in general.

- Provincial representative

CBPPL is very vigilant with their monitoring processes, as they have their own internal monitoring audits. The harvesting contractor completes an environmental inspection every month, and CBPPL staff complete an intensive inspection once every four months. Furthermore, once the operation is finished, CBPPL does a final inspection to make sure no garbage, processed wood, or temporary crossings are left behind. Municipal representatives and provincial staff from the Department of Environment and Conservation also monitor the operations for adherence to their permit to work in a PWSA and their agreed upon further stipulations with Steady Brook. Moreover, in some cases, other certification standards CBPPL adheres to are more stringent than the stipulations in their permits from the

Province. CBPPL is certified under the following environmental standards:

- ISO 14001:2004 Environmental Management Standard (ISO)
- CAN/CSA Z809:2008 Sustainable Forest Management (CSA)
- Forest Stewardship Council National Boreal Standard (FSC)

For example, FSC standards state that any stream that has running water in it year round (no matter how small) has to be buffered whether it is in a PWSA or not. NL Environmental Protection Guidelines state, "A 20-metre, treed buffer zone shall be established around all water bodies that are identified on the latest 1:50,000 topographic maps and around water bodies greater than 1.0 metre in width that do not appear on the maps" (Government of NL, 1998). Therefore, water bodies that may not be recognized by Environmental Protection Guidelines in NL may be recognized as needing to be buffered by FSC standards.

Under the ISO, CSA and FSC standards CBPPL audits itself through their Environmental Management System. Under the CSA certification CBPPL was required to form a Public Advisory Committee. In addition to their requirements under the various regulations and certification standards they follow, they report to their Public Advisory Committee. The Public Advisory Committee also holds the power to set additional targets that CBPPL must adhere to. Furthermore, the Environmental Protection Guidelines for Ecologically Based Forest Resource Management under the *Environmental Protection Act*, which CBPPL must follow, also has a full list of requirements when working within a PWSA (Government of NL, 1998). Due to these requirements the Department of Natural Resources also monitors CBPPL's operations.

As a result of the great deal of monitoring processes and standard operating procedures CBPPL must adhere to, it was the general

consensus amongst key informants that other activities such as cabins and ATV use in the PWSA are of far greater concern than CBPPL's logging operation.

Relationship with CBPPL

By and large the relationship between the Town of Steady Brook and CBPPL is very positive. One key informant noted concerns due to CBPPL actions in the past, however it is clear that practices used in the 1960's do not exist today. In fact, a town representative noted:

I would say they were excellent to work with. They were very good corporate people. I would have no complaints and no hesitation recommending that they could go into their water supply because I am sure they would protect it safely. Whatever the buffer zones were, whatever the town designated that they could or couldn't do, they would add that to their plan. I never saw them, not once, go off stream or go off what we had in our plan.

- Municipal representative

Furthermore, another informant explained:

I've had nothing but good relations with them, with pulp and paper. They're my example of how to do an activity right in a water supply area. They're my number one go to example.

- Provincial representative

There was concern due to Steady Brook's preexisting issues with chlorination disinfectant by-products (e.g., HAAs and THMs), that organic loading of sediment and nutrients due to logging could be a potential contaminant to their drinking water supply (Hearn, 2005). Therefore this has been an issue to be examined when monitoring CBPPL operations. However, water quality reports suggest there have been no significant changes in nutrient and metal levels in the source water and

HAA/THM levels have been consistently over the guideline since 2006 (before CBPPL began most recent cuts) (Government of NL, 2014b).

It was noted by both municipal and provincial key informants that CBPPL holds themselves to very high standards, especially when it comes to creating plans to avoid potential contaminants due to fuel spills or leaks from petroleum products. Furthermore, CBPPL says it is in their own self-interest to adhere to these standards (e.g., CSA, FSC, ISO, which are all voluntary certification processes), as their customers are demanding it. Thus their actions are market driven. It was explained by all key informants that in source water protection efforts you have to work together, and that CBPPL does not have any other choice but to work with the town and accommodate their requests. A representative in Steady Brook stated:

...it is to their advantage to monitor everything and make sure that nobody is getting in the roads that they put there so they barricade the roads very good for us.

- Municipal representative

There are some activities that CBPPL do that go above and beyond regular requirements. For example, in winter 2014 CBPPL organized a day long field trip to bring Steady Brook councilors, academics, federal government employees, provincial government employees and members of the Public Advisory Committee out into their operations in Steady Brook's PWSA. During this day CBPPL's employees showed hands-on the measures they take to adhere to their various regulatory and certification requirements.

Steady Brook has also been very impressed with CBPPL's maintenance and clean up of the logging sites. There was an incident in summer 2013 where someone did get into the PWSA via CBPPL's winter logging roads, however when this was discovered the already large barrier was immediately improved so it was impossible

to get motorized vehicles or boats through the logging roads in the fall, spring and summer. It was noted that CBPPL has lived up to all of their obligations, and CBPPL representatives have agreed that their relationship with Steady Brook has been very positive and collaborative.



Group Photo of Public Advisory Committee members, Provincial representative, Academics and CBPPL Staff on a Fieldtrip Inspection of CBPPL's Operations in Steady Brook

Lessons Learned

Throughout this case study, it has been noted that Steady Brook is very proactive in protecting their drinking water supplies through their watershed management efforts. This has been attributed to assets in the town, mainly the presence of leaders that were willing to donate their time and energy to see the watershed management plan to fruition and to now oversee and be active in implementation and enforcement. The active presence of the Department of Environment and Conservation was also noted as a positive factor in stewardship, as well as the funding and facilitation from Western Newfoundland Model Forest Network in 2003 to create the watershed management plan.

Unfortunately, there are not enough financial or human resources at the provincial level at this time to facilitate every community in NL in having a watershed management plan. It was noted by a provincial government representative that even conducting the annual

review of the watershed management plan requires dedicated human resources:

When it comes to actually doing the annual review of the plan it's a lot of work and it usually ends up on my desk so there's still a bit of a capacity issue there, because if I had to be a part of 20 more of these watershed committees I don't know how I would find time to do anything else

- Provincial Representative

However, even though not every town may be able to create a watershed management plan, it should be noted that becoming more active in the protection of drinking water supplies is possible and important. It was explained:

You don't have to be as elaborate as Steady Brook, if you have some little town that doesn't have a bunch of money and not as big of an area to protect as we do, because we have a big area to protect, but they might only have down the road, a mile or two, whatever. They might only need to put a fence around their watershed protection, or they might only have to have a committee.

- Municipal Representative

It was suggested that communities could initiate measures today for managing their drinking water better, even if it just means putting together a schedule of volunteers who will monitor their source water supply area.

It should be understood that having a PWSA designation does not have to mean economic opportunities (e.g., logging) or even recreational activities must be forgone. However, monitoring programs and proactive measures are needed, with local ownership of source water protection efforts. Furthermore, local governments must work with watershed users. It was noted by CBPPL that:

You need to be involved with the towns. We always found that and everyone here is involved, my predecessors, you deal with the people, you deal with the issues. You don't just walk in and expect to harvest. You have to actually go in and have a meeting with them and work in the committee. I mean we're probably finished in Steady Brook watershed for harvesting for the next 5 years or more but we will still be part of the committee and we will still go to the meetings, right. It all helps because you get to know the people and get to know the issues and you help educate them and they help educate you on what we want to do and what they want to do. Seems to work.

- CBPPL Representative

It was noted by all informants that when working with industry who is conducting commercial activities in a town's PWSA, that transparency and open communication on the part of both the municipal government and the corporate actors is very important. It was explained that advisory/management committees, regular reports, written agreements, and involving the public in the planning stages, strengthen this type of communication and ensures transparency in the process. Furthermore, CBPPL explained that responding appropriately and expediently to concerns is important, as well as having vigilant plans for how you will mitigate impacts and respond to emergencies. It was urged by CBPPL:

...the public is right and communities are right to be concerned about their water supplies because it is very dear to all of us. We are talking about your drinking water and protecting your water supplies and they have every right to be concerned.

- CBPPL Representative

Ultimately, source water protection involves compromise and requires all users of the watershed to work together for the common goal of safe, accessible and sustainable drinking water supplies. The case of Steady Brook's experience with watershed planning and CBPPL's logging operations in their PWSA provides an excellent example of what source water governance and management should look like in rural NL.

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