

Commercial Logging in a Protected Public Water Supply Area:

Spotlight on Corner Brook Pulp and Paper Limited's Operations in the Gander Lake Protected Public Water Supply Area

Background

The Gander Lake watershed (which is part of the Gander River basin) is located in the northeast part of the island of Newfoundland and is one of the largest lakes in Newfoundland (see Figure 1). The Gander River basin is the third largest drainage basin on the island with a natural drainage area of 5,310km² (Environmental Design and Management Ltd., 1996). Gander Lake itself is 50km long, 5km wide, and is referred to as the “bottomless” lake due to its topography, currents and even tidal action that makes it hard to determine its maximum depth (which is far below sea level) (Town of Gander, 2016). The Gander Lake watershed is a multi-use watershed used for recreation, natural resource extraction, development and drinking water. Gander Lake provides drinking water to three towns: Town of Glenwood, Appleton and Gander (Environmental Design and Management Ltd., 1996). Also, the town of Benton falls within the Gander Lake Protected Public Water Supply Area (PPWSA), however derives its water from Little Pond, located upstream of Gander Lake (Government of NL, 2014).

This case study focuses on local and provincial representative's experience with the activities of Corner Brook Pulp and Paper Limited (CBPPL) in the Gander Lake PPWSA. The intention of this profile is to provide an example of industry working with local and provincial government towards source water protection goals in mixed-use watersheds. It also highlights an example of collaborative watershed management activities involving several towns. Key informant interviews (5 key informants in total) were conducted in summer 2016 and legislation, policies and associated documents

related to the management of the Gander Lake watershed were reviewed to complete this case study.



Figure 1: Gander Lake (Wikipedia, 2016)

Watershed Management in the Gander Lake Watershed

The Gander Lake water supply area (which represents a portion of the overall Gander Lake watershed) is designated as a PPWSA under the *Water Resources Act* (Government of NL, 2002; Government of NL, 2016c). Gander Lake is the source of drinking water for the Towns of Glenwood, Appleton and Gander (Environmental Design and Management Ltd., 1996). These public water systems serve a total of 12,467 residents (Government of NL, 2016c).

During 2014-2015 there were only five active watershed management committees and three watershed management plans in the province

of Newfoundland and Labrador (Government of NL, 2016a). The Gander Lake watershed has both a watershed management plan and committee. The watershed management plan for Gander Lake and its catchment was commissioned by the Government of Newfoundland and Labrador, Department of Environment, Water Resources Divisions, in 1995, and was completed by consultants in 1996. Its purpose was to, "...develop a watershed management plan for Gander Lake and its catchment that protects the potable water supply of the Towns of Gander, Glenwood, and Appleton, while providing long-term sustainable multiple use by a number of private and public concerns" (Environmental Design and Management Ltd., 1996, p. i). This comprehensive plan provides baseline information on the watershed such as: lake water quality, land use, lake use, hazardous materials, and water modeling. It also includes sections outlining an integrated management plan for the watershed including a watershed management decision model, details about planning controls such as implementation options, regulatory approaches, negotiated approaches, the watershed stewardship approach, long term water quality monitoring and modeling recommendations, and additional data collection (Environmental Design and Management Ltd., 1996). Specifically it suggests a regulatory approach through buffer zones, restricted use areas and watershed management areas. However, all implementation options are recommendations, and the plan itself does not hold any legal authority. Components of the watershed management plan are utilized in *Permits for Development*, which do have legal authority.

The Gander Lake watershed management committee oversees the watershed, ensuring any arising issues or actions that may impair the quality and/or quantity of Gander Lake are dealt with. The committee is made up of representatives from Departments of Municipal Affairs, Environment and Conservation, Natural Resources, Forestry and Agrifoods Agency,

Service NL, and the Towns of Glenwood, Gander, Appleton, and Benton, as well as CBBPL (Government of NL, 2016c). It was explained that this committee:

...meet a couple of times a year to discuss sort of any issues that have come. Any things that have come from any permits in the source water protection area, they also provide any comments or any concerns in relation to the couple of communities that are related to the Gander Lake drinking water systems and provide us back with any feedback in terms of any potential issues or that sort of thing.

- Provincial government representative

It was also explained by one informant that issues are discussed via correspondence in between meetings. Due to the distance some have to travel for these meetings, flexibility in the frequency of meetings and how the group corresponds is important. It was further explained about the committee:

...very seldom is there a dispute within that group but it can become you know somebody from the public who is making the application knows someone from in the group who is trying to push the application through right, so everyone's got their own different perspective when they come to that table but to date we've always been able to come [up] with some resolution.

- Municipal government representative

Overall respondents interviewed for this profile indicated the quality of the water from Gander Lake was good. In the past there were issues with organic matter and the colour in the water, but new treatment and filtration systems fixed this. It was indicated there have not been concerns about quantity of water for the water supply. However, flooding has been an issue in the area. In a recent news article entitled "Gander Advised To Stockpile Water As Levels

Rise”, there was a call from the Town of Gander for residents to prepare for an extended period without water due to a flood at the town’s pump house (VOCM, 2016).

In relation to threats to the water supply, it was explained:

I mean, we’ve got such a huge water supply; any contamination within the watershed will have to be almost catastrophic to have an impact on our water supply

- Municipal government representative

Land use, lake use and hazardous materials threats discussed in the Gander Lake watershed management plan include: forestry, urban development, agricultural potential in the Rivery Valleys, mining, logging camps and cottages, fishing, marinas, swimming, sewage treatment facility discharges, the Trans Canada Highway, the Gander International Airport, fuel storage, and the Canadian Forces Base Gander (Environmental Design and Management Ltd., 1996). Similarly, some noted potential threats by the informants interviewed include quarry applications, the nearby Beaver Brook Antimony mine, and illegal cabins. Issues with illegal cabins were mentioned as an ongoing problem. These cabins do not have permits to be there, and often do not have proper septic systems. Untreated sewage as well as other typical cabin activities such as swimming and fishing all have the potential to contaminate the water supply.

Governance of CBBPL’s Operations in the Gander Lake PPWSA

In Gander Lake’s watershed management plan, forestry is noted as the land use activity that covers the largest area of the Gander Lake catchment, and issues with past practices such as clear cutting was noted. Furthermore, other water quality problems arising from forest

cover removal, and subsequent increased volume and rate of runoff, as well as changes in runoff content were outlined in the plan as potential threats. The creation of logging roads also has the potential of introducing contaminants to Gander Lake (Environmental Design and Management Ltd., 1996). In order to conduct operations within the Gander Lake PPWSA and mitigate potential negative impacts on Gander Lake, forestry operations must adhere to stipulations outlined in their *Permit for Development* issued by the Department of Environment and Conservation- Water Resources Management Division. In 2016, the Department of Natural Resources-Gambo, Department of Natural Resources-Lewisporte and CBPPL all held permits for forestry related activities in the Gander Lake PPWSA (Government of NL 2016)

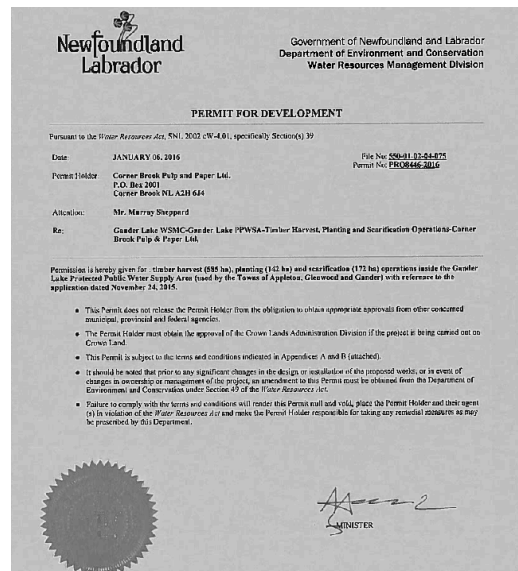


Figure 2: Picture of CBPPL Permit for Development (Government of NL, 2016b)

CBPPL’s *Permit for Development* currently covers timber harvesting, planting and scarification operations within the Gander Lake PPWSA. Their permit has been issued for one year (January 2016-2017). This permit outlines many stipulations such as establishing buffer zones (varying from 30-100 metres throughout the watershed); that equipment storage, maintenance facilities and repairs must be done

outside the PPWSA; and stipulations on how waste is to be collected and disposed of. Staff from the Department of Environment and Conservation, municipal authorities, operators, or the watershed management committee can enforce the permit to ensure compliance. The permit also states that liaison about any issue that arises during operation in relation to water quality impairment is to be communicated immediately to both local and provincial authorities (Government of NL, 2016b). The permit itself is available publically online for anyone to review on the Department of Environment and Conservation's website: http://www.env.gov.nl.ca/env/waterres/permits/supply_dev/2016/R%20-%20PRO8446-2016.pdf

A municipal representative explained that before the permit is issued the Province will work directly with CBPPL with any issues they see with their application. After this initial review and once potential changes are made, the application is sent to the watershed management committee for further review, and issues during this phase are addressed. Then the watershed management committee and municipal councils must approve the permit. For example, due to the Town of Gander's stewardship agreement with the Province as part of the Stewardship Association of Municipalities (SAM), council has turned down an application for harvesting from CBPPL. This application was for outside the Gander Lake watershed, but within a management zone listed in their stewardship agreement (Government of NL, 2007). After all approvals are received, a *Permit for Development* is issued with any required stipulations or any special permitting requirements. Throughout the process municipal councils are kept informed. It was explained,

We are supplied a copy of their five-year management plan which goes to council so we do get the opportunity to see where they are harvesting, their road network they are proposing and those types of things

- Municipal government representative

Furthermore, there is a full list of requirements outlined in the *Environmental Protection Guidelines for Ecologically Based Forest Resource Management* under the *Environmental Protection Act*, which CBPPL must follow when working within a PPWSA (Government of NL, 1998).

CBPPL is certified under the following environmental standards certifications:

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

These environmental certifications ensure CBPPL is meeting best practices both nationally and internationally. These certifications sometimes prove to be stricter than provincial guidelines. In the case of FSC standards for example, CBPPL has to create a buffer around any stream that has running water in it year round (no matter how small). NL Environmental Protection Guidelines state a 20-metre buffer (this buffer is greater if working within a PPWSA) is required 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). For the ISO, CSA and FSC standards external third-party audits are required in addition to self-audits through CBPPL's Environmental Management System. CBPPL's Public Advisory Committee was formed under the requirements for CSA certification. The Public Advisory Committee, which does have Town of Gander representation, holds the power to set further targets that CBPPL must meet.

One municipal informant also mentioned there is a water quality committee in central region which is made up of representatives from Departments of Environment and Conservation and Municipal Affairs, Town of Gander, James

Paton Memorial Hospital, Canadian Forces Base Gander, and Gander airport. Water quality issues are discussed at their meetings from the perspective of the end users. Any concerns from this committee about CBPPL operations are relayed to them.

As far as enforcement it was explained at the provincial level:

...we do have environmental scientists in the central region that will field any potential complaints that might come up on any type of activity that's in that watershed or might do just a random inspection on any of the permits that we do issue, so that will be relevant for anything that might happen in the Gander Lake in relation to Corner Brook Pulp and Paper.

- Provincial government representative

It is the responsibility of a community with a *Permit to Operate a Water Distribution System* to establish and maintain a regular inspection routine to monitor activities within the water supply area (Municipalities Newfoundland and Labrador, 2016). It was explained by a municipal representative that they do not have staff that monitor activities within the water supply area, but they rely heavily on the general public. The municipality relays any concerns from the public, including any forestry related issues, to the Department of Environment and Conservation- Water Resources Management Division, who investigates the issue.

CBPPL also has internal monitoring procedures for their harvest operations. Firstly, whether CBPPL is working within a PPWSA or not, they have a pre-work meeting with contractors to explain factors such as provincial requirements, internal policies, environmental certification conditions, and if applicable stipulations under the *Permit for Development*. They also have three different levels of inspections for all harvest operations. The number one inspection is a monthly compliance inspection conducted

by the harvesting contractor, ensuring they are meeting their mandated stipulations and guidelines.

CBPPL does a number two inspection on all contractors three times a year. A number two inspection is more comprehensive and includes health, safety, and environmental factors, checking things like spill kits and compliance with all items on their *Permit for Development*. For example during these inspections:

One of the things that we would ask any of the operators that we interview is, you know, are there any special considerations in this area, and they should know that they are operating in a protected water supply area.

- CBPPL representative

Once the harvesting is completed on the PPWSA, CBPPL performs a number three inspection to ensure the contractor has cleaned up the harvesting site properly to, “ensure that there is no chance for siltation or there is no wood left behind” (CBPPL representative). Overall, CBPPL must follow a great deal of rules when working in a PPWSA and it is a joint effort in ensuring they (and all associated contractors) are held accountable.

Municipal and Provincial Relationships with CBPPL

CBPPL has had a long history working within the Gander Lake watershed, and then the Gander Lake PPWSA once this designation was enacted on December 1, 2000 (Government of NL, 2014). It was explained CBPPL has had operations there,

“... as long as it's been incorporated I will imagine. Our operations would have started on the Gander Lake back in the '30s or '40s

- CBPPL representative

It seems that the relationship with CBPPL with the municipalities and provincial actors for the area is very collaborative and collegial. CBPPL have been praised for being aggressive with their high standards. When asked about the relationship between CBPPL and municipalities in the Gander Lake PPWSA it was explained,

I will say excellent. Corner Brook Pulp and Paper is I will say excellent stewards of the environment. I sit on a public advisory committee with Corner Brook Pulp and Paper so that allows me to bring any concerns that [the] municipality has to that forum.

-Municipal government representative

It was also mentioned that CBPPL keeps in good communication with municipalities and are forthcoming with any incidences that they have had such as spills or road washes. In relation to arising issues it was noted:

so they want to make sure its dealt with very quickly and to date we have not had any issues so it's [worked] through very well

- Municipal representative

At the provincial level CBPPL also received positive endorsement. It was said,

In general, we have good relationships with Corner Brook Pulp and Paper, they've been quite proactive and any issues that we've had in relation to permits in protected water supply areas, they've definitely been able to sort of work with us and see what it is that we require for the protection of the public water supply and how they can address that in their activities

- Provincial government representative

It was also mentioned that in their area of operations in the Gander Lake PPWSA, there are cottages in the area and people using the same roads, so they have to do road

maintenance. It is apparent that CBPPL has to be aware of both the social and environmental aspects of the watershed they are impacting, and continually work to mitigate any negative consequences.

Lessons Learned

A main finding of this case study was that there are many safe guards in place (e.g., permits, internal and external monitoring) to ensure CBPPL is doing what they are required to do so that the Gander Lake water supply area is not impacted by their operations. At the local level, though monitoring is vitally important to drinking water protection, it involves a great deal of local initiative. With a large system such as the Gander Lake watershed (and the smaller but still very large PPWSA), monitoring and enforcement is difficult.

We are really trying to push a little bit more community involvement in the protected water supply areas and this would involve sort of any activities within Gander Lake ... It is protected under the Water Resources Act, but the town has the big responsibility in sort of proactively, managing their watershed as well and not just depending solely on provincial people to try to do that monitoring.

- Provincial government representative

It is the community's responsibility to monitor watersheds as they are the actors closest to the watershed. As mentioned previously, it is in the community's *Permit to Operate a Water Distribution System*, that they are to establish and maintain a regular inspection routine to monitor activities within the water supply area (Municipalities Newfoundland and Labrador, 2016). However, municipal representatives also pointed to the lack of resources at the municipal level and the need for public resident involvement. It was elaborated,

So one of the challenges is that we rely heavily on the general public, so

getting the information out to the general public and saying listen, if you see anything that is suspicious, if you see a dirty looking stream in our water. Pristine in Newfoundland, so if you see a milky stream that should give you concern, or if you see suspicious activity. That's one the biggest challenges with having such a huge geographic [area] for our watershed. And another one is growth, but again compared to Ontario, in short there is not much growth here in Newfoundland compared to those areas.

- Municipal government representative



Figure 3: Gander Lake Golf Club overlooking Gander Lake (Town of Gander, 2016)

It is unknown if this responsibility to report incidences is known by the residents living, working and recreating within the water supply area. Perhaps this responsibility needs to be strengthened through public outreach and education. For example, during operations of the Gander River Management Association, members would monitor the river for development restrictions (e.g., cabin development and minimum buffer requirements) set out by the *Water Resources Act* (2002) and the *Gander River Protection Areas Regulations* (2006) (Daniels, 2014). These types of volunteer watershed organizations are important actors in watershed monitoring. Both municipal and provincial actors should

encourage volunteer organizations to take on these types of monitoring roles.

When asked about advice for other industrial operations that would like to work within a PPWSA, this advice was given:

Just get involved, that's all I can say, I mean it's a lot easier working from within when you know you make your contacts, and people get to know you, and you know how the group works, and how the system evolves, and how the permitting works. So just being part of that group I will say would be the you know one of the best pieces of advice, even if they need to just show up to a meeting and describe their activities.

- CBPPL representative

It was later stressed that municipalities need to carefully read the applications for permits and provide comment on what they would like to see. For example, knowing the buffers that are in place. A municipal representative also agreed that there is a need to stay informed during the permitting process and understand fully what is proposed and what is the long-term plan. Having a venue like a watershed management committee is clearly an important vehicle where this type of information and concerns can be shared amongst diverse stakeholders. These types of committees can also be a venue where changing conditions and new threats to the watershed can be discussed and addressed. Communication is key in the protection of water supply areas, whether it is between industry and government, or all users of the watershed. It is evident from this case study that we all have a part to play in the protection and sustainability of drinking water supplies.

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References

Daniels, J. 2014. *The river multiple: Exploring place, identity and resource politics on the Gander River*. Newfoundland. Memorial University of Newfoundland. St. John's, NL.

Environmental Design and Management Ltd. (1996). *Watershed management plan for Gander Lake and its catchment*. St. John's: Government of Newfoundland and Labrador; Environment Canada, 389 pp.

Government of NL. (1998). *Environmental Protection Guidelines for Ecologically Based Forest Resource Management*. Retrieved August 24, 2016 from http://www.env.gov.nl.ca/env/env_assessment/projects/Y2011/1622/appendix_1-3.pdf

Government of NL. (1999). *Policy for Land and Water Related Developments in Protected Public Water Supply Areas. W.R. 95-01*. Water Resources Management. Retrieved August 24, 2016 from http://www.env.gov.nl.ca/env/waterres/regulations/policies/water_related.html

Government of NL (2002). *Water resources act*. (Amended:2004 cL-3.1 s66; 2008 c47 s20; 2008 cE-9.1 s28). Retrieved August 24, 2016 from <http://www.assembly.nl.ca/legislation/sr/statutes/w04-01.htm>

Government of NL, 2007. *Stewardship Agreement*. Retrieved November 10, 2016 http://www.env.gov.nl.ca/env/wildlife/stewardship/community_profiles/pdf/Gander.pdf

Government of NL. (2014). *Protected public water supplies of Newfoundland and Labrador*. Retrieved August 26, 2016 from <http://www.env.gov.nl.ca/env/waterres/quality/drinkingwater/pdf/PPWSAs.pdf>

Government of NL. (2016a). *Drinking water safety in Newfoundland and Labrador: Annual*

report 2015. St. John's: Department of Environment and Conservation, 28pp.

Government of NL. (2016b). *Permit for development*. Retrieved August 24, 2016 from http://www.env.gov.nl.ca/env/waterres/permits/supply_dev/2016/R%20-%20PRO8446-2016.pdf

Government of NL. (2016c). *Public water supplies*. Retrieved August 24, 2016 from <http://maps.gov.nl.ca/water/reports/getreport.aspx?reportid=1013>

Government of NL (2016d). Section 39 – Permits for development activity in a protected public water supply area. Retrieved December 7, 2016 from http://www.env.gov.nl.ca/env/waterres/permits/supply_dev.html

Hearn, D. (2007). *A municipal guide to the development of a watershed management plan*. St. Johns: Natural Resources Canada.

Municipalities Newfoundland and Labrador. 2016. Source water protection what you can do. Retrieved November 11, 2016 from <https://www.municipalnl.ca/wp-content/uploads/2016/09/source-water-protection-low-res.pdf>

Town of Gander. (2016). *Cool Stuff*. Retrieved November 22, 2016 from <http://www.gandercanada.com/index.php/town-hall/about-gander/cool-stuff>

VOCM. 2016. *Gander advised to stockpile water as levels rise*. October 12, 2016. Retrieved November 10, 2016 from <http://vocm.com/news/gander-may-lose-water-due-to-rising-water-levels/>

Wikipedia. (2016). *Gander Lake*. Retrieved November 14, 2016 from https://en.wikipedia.org/wiki/Gander_Lake