



MICRO SAWMILLS IN BRITISH COLUMBIA

INSIGHTS FOR COMMUNITY FORESTS



MARCH 2021



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MICRO SAWMILLS IN BRITISH COLUMBIA: **INSIGHTS FOR COMMUNITY FORESTS**

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By Susan Mulkey and Carly Dow

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Ministry of
Forests, Lands, Natural
Resource Operations
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Executive Summary

ACROSS BRITISH COLUMBIA, the British Columbia Community Forest Association (BCCFA) provides educational resources, extension services and support to communities striving to obtain and successfully implement community forest initiatives. Local forest-based employment and support for leading-edge forest practices are among the guiding principles of the organization. In alignment with these principles, the BCCFA has developed this extension project in partnership with the Ministry of Forests, Lands, Natural Resource Operations and Rural Development to assist community forests¹ in assessing the opportunities associated with operating a micro sawmill, defined as a mill that utilizes 2,000 to 20,000 m³ per year. The purpose of this micro sawmill report is to present ideas and information, inspire conversation, and plant a seed that may grow into a valuable investment for your community forest.



WOOD-MIZER AT LOWER NORTH THOMPSON COMMUNITY FOREST MILL

Micro sawmills operate across BC but are rarely owned by community forests where a long-term log supply is already available at their doorstep. This log supply presents a unique opportunity for community forests to create more local jobs, increase value from harvested trees, and enhance rural economic diversification.

This report reviews two case studies from community forests that currently conduct milling operations, as well as knowledge and expertise from a variety of mill and community forest managers and forestry

specialists. Our case studies demonstrate a steady increase in mill sales due to the production of quality products, excellent customer service, and reliable local support.

In determining the feasibility of a micro sawmill for any given community forest, it is important to consider multiple variables: the timber profile of your community forest and the products it can potentially provide based on available tree species; the values outlined in your community forest management plan; the mill site where operations will take place; your business plan, including products and marketing, essential people skills; mill equipment; and, what funding is available to assist in the initiation of your mill.

¹ The community forest agreement (community forest) is an area-based licence that provides the exclusive right to harvest timber within the community forest area, and the right to manage forest products. We also use the term community forest to refer to the community forest agreement holder.

Although the lessons and examples provided throughout this report may not translate directly to every community forest, they offer valuable elements to consider when determining the feasibility of a micro mill for your community forest.

The main challenges of implementing a mill operation include setup costs for the mill site and equipment, competition with larger mills, maintaining a reliable and skilled work crew, and disposal of mill waste. Individual community forests will identify their specific roadblocks and how to overcome them, which will be wide and varied based on their feasibility studies.

In many areas of the province, partnerships between Indigenous and non-Indigenous communities are creating mutually beneficial outcomes, including the advancement of reconciliation. Although the lessons and examples provided throughout this report may not translate directly to every community forest, they offer valuable elements to consider when determining the feasibility of a micro mill for your community forest.

If they are a suitable fit, micro sawmills create a new world of opportunity for community forests to innovatively increase their contributions to community resiliency and the local economy. In addition to the information provided in this report, the BCCFA is available to keep the discussion going with new information, webinars, and potential funding sources as you assess the feasibility of a sawmill operation for your community forest.

PHOTO: HARROP PROCTER FOREST PRODUCTS MILL



Introduction

THE BRITISH COLUMBIA COMMUNITY FOREST ASSOCIATION (BCCFA) is a non-profit society with a mandate to serve as the voice and advocate for community forestry in BC. The BCCFA provides input on forest policy to facilitate the success of community forest initiatives and work with government to expand community forestry in BC. Furthermore, the BCCFA provides educational resources and extension services, and supports communities striving to obtain and successfully implement community forest initiatives. The guiding principles of the organization include maintaining resilient ecosystems as a basis for social, ecological and economic health; providing local forest-based employment; and offering support for leading-edge forestry practices.

In 2012, in response to the BCCFA call to expand the Community Forest Agreement (CFA) program and make existing CFAs bigger, former Ministry of Forests Deputy Minister Doug Konkin encouraged us to “make them deeper.”

This project seeks to build on that advice and challenges community forests to look at shifting out of the just-selling-logs mindset. Through this project, the BCCFA aims to support community forests in their assessment of opportunities for implementing and operating a micro mill.

With this report and further tools and guidance, the BCCFA hopes that more community forests will be inspired to consider enterprises of their own, creating:

- Increased value from trees harvested
- Enhanced rural economic diversification
- More local jobs

This report contains information from case studies of two community forests and their experiences with milling operations: Harrop-Procter Community Forest (HPCF) and Lower North Thompson Community Forest (LNTCF). Details of the two case studies are provided in Appendix A & B. While these case studies provide valuable examples of the potential of establishing a micro sawmill operation, all of the lessons learned may not be directly transferable to other community forests. Every community forest is unique, as are the communities and forests in which they work.

Informed by their stories and discussions with other micro mill operators and forest professionals considering the potential for the value-added sector in BC, we have developed a list for community forests to consider in an assessment or feasibility analysis of opportunities for a micro mill.

While this report highlights the experiences of two micro mills currently operated by community forests, we must also acknowledge the efforts of the Valemount Community Forest (VCF) to establish a mill on the land they bought in 2014. They have purchased and are in the process of reassembling a big head rig mill that can process ~30,000 cubic metres a year. Motivated to support a change in the trend of declining employment and outmigration of

This report contains information from case studies of two community forests and their experiences with milling operations: Harrop-Procter Community Forest (HPCF) and Lower North Thompson Community Forest (LNTCF). Details of the two case studies are provided in Appendix A & B.

skilled workers, VCF saw potential to turn the 240-acre abandoned mill site into a thriving centre of economic and employment activity.

Dunster Community Forest has also established a custom cut micro mill. BRKH Custom Woodworking Ltd. started production and sales in May 2020. The name is derived from the four bodies of water found along the community forest's boundaries B (Baker), R (Raush), K (Kiwa) and H (Holmes). They purchased an existing local custom milling business processing cedar, pine, Douglas fir, and birch to make hardwood and softwood flooring, tongue and groove panelling, decking, custom furniture and feature walls. They currently utilize about 10 per cent of logs cut by the community forest. A recent grant will help to upgrade storage of kiln dried products and in turn, support utilization of 20 per cent of its logs for value-added products.²

In the November 2020 mandate letter given to Minister Conroy, Minister of Forests, Lands, Natural Resource Operations and Rural Development, Premier Horgan asked that Minister Conroy make progress to "Lead the transition of our forestry sector from high-volume to high-value production, increasing the value-added initiatives of our forest economy."

With a steady supply of logs, are there more opportunities for community forests, through mutually beneficial partnerships or on their own, to increase value-added initiatives in their local forest economy? Micro mills are but a piece of the innovation in value-added and job creation potential for community forests. But it is a piece worth considering. We hope this document will help to get a discussion going for more community forests.

WHERE ARE THE OPPORTUNITIES?

"There is not more juice to squeeze out of the commodity orange."

— Hugh Scolah
(see Appendix C).

PHOTO: LNTCF MICRO MILL



2 BRKH Custom Woodworks, brkh.ca/, accessed March 18, 2021.

A micro sawmill is defined as a mill that produces 2,000 to 20,000 m³ per year.

OTHER MILL SIZES DEFINED

SMALL lumber mills with a capacity less than 95,000 m³ per year

MEDIUM lumber mills with a capacity greater than 95,000 m³ per year but less than 295,000 m³

LARGE lumber mills with a capacity greater than 295,000 m³ but less than 850,000 m³

VERY LARGE mills with a capacity greater than 850,000 m³

Where does the community forest wood go?

In the 2020 Community Forests Indicators Report, 27 operating community forests reported on their log sales.

Where markets are diverse, community forests can sell to numerous buyers at market prices. Responding community forests sold logs to an average of 3.6 different buyers. These figures vary greatly around the province, with two respondents selling to 10 different buyers in the reporting year. Community forests primarily sort their logs for the greatest value and support the full spectrum of milling and manufacturing facilities.

Distribution of log sales	
Sales to very large mills > 850,000 m ³ /year	30.8%
Sales to large mills 295,000 m ³ – 850,000 m ³ /year	35.6%
Sales to medium mills 95,000 m ³ – 295,000 m ³ /year	6.6%
Sales to small mills < 95,000 m ³ /year	3.5%
Sales to mill owned by the community forest	0.3%
Sales to value-added mills	0.2%
Sales to pole, veneer, plywood & OSB	4.0%
Sales to facilities that use low quality fibre (chip, pellet, pulp & paper)	8.8%
Sales to shake and shingle mills	0.4%
Sales to firewood	0.4%
Logs exported	0.8%
Broker	8.6%

THIS REPORT contains detailed information on the elements required to start up a micro mill, including crew and managerial considerations, mill waste options, and a list of questions to review as you determine the feasibility of a micro mill for your community forest. In addition, the appendices contain full case studies of the Harrop-Procter Community Forest (Appendix A), Lower North Thompson Community Forest (Appendix B), and a chapter on value-based marketing by Hugh Scolah (Appendix C).

Start with the Forest

THE COMMON LAMENT FROM MICRO MILL OWNERS across BC is that of log supply. They just can't get access to a steady supply of the logs they want. With a long-term supply of logs coming from a community forest land base, this issue is already addressed. The first step in assessing a mill project is to take a hard look at your profile. Where is the opportunity?

Harrop Procter Community Forest, located in the Kootenay interior rainforest, is fortunate to have plenty of cedar and fir with smaller components of spruce, fir, larch and pine. The community forest is 10,932 hectares with an Annual Allowable Cut (AAC) of 10,000 cubic metres. All of the wood they run through their mill comes from the



The first step in assessing a mill project is to take a hard look at your profile. Where is the opportunity?

community forest, and they make sure that every product that goes out of the mill is top quality. The quality begins with the log. HPCF takes the best 10 to 20 per cent off the top of their annual harvest to send to their mill. Over the years, they have grown a good reputation for their quality and say that it requires constant linkage and communication between their forestry manager, loggers and the mill manager.

The mission statement of the Harrop Procter Community Cooperative, the organization overseeing both the community forest and the mill, is as follows: "To develop public forests in the Harrop-Procter area according to site sensitive, ecologically based forestry practices which are modeled on Silva Forest Foundation planning and approved by the Harrop-Procter

Watershed Protection Society. To stimulate locally based employment from these forest lands in a manner that is ecologically sustainable, and socially and economically equitable." See Appendix A for the full case study.

Lower North Thompson Community Forest is located in the North Thompson Valley, which is abundant in Douglas fir and western red cedar. The community forest is 8,254 hectares with an AAC of 20,800 cubic metres. The mill was originally established with the purpose of utilizing the oversized fir harvested from the community forest. Most of the wood run through the mill is taken directly from the community forest, with the exception of some timber that is purchased from local operators, farmers or other community forests. LNTCF has an adaptive and collaborative

approach in their mill operations. In recent years the community forest mill enterprise has expanded to include a firewood component that has achieved high demand in the local community.

The mission and objectives of the LNTCF form the foundation of the organization and help set their priorities and guide their activities: “To establish local control of dedicated forest resources for the long-term sustainability of the five participating communities. To secure for these communities an opportunity to be more self-determined. To engender economic stability in these communities. To practice and model exemplary stewardship of the local forest environment.” See Appendix B for the full case study.

Use what you need from your harvest

Historically, community forests have worried that if they pull the most valuable logs out of their bush runs for an alternative market, or for their own use, their actions will negatively affect their sales with the large primary manufacturers. Yet, 67 per cent (or 18 out of 27) of the respondents to the 2020 Indicators Survey say they are already sorting their wood to get the highest value.

Rami Rothkop, one of the founders of the HPCF, recognised that their confidence grew over time to take what they need from their harvest for their mill. They have evolved a philosophy that they are providing a service by milling wood locally, and the more they do it the more empowered they have become to continue to build the business. Their business model is adaptive and has a strong focus on self-empowerment. As for the rest of their logs, local mills are gladly buying. Their advice — keep the logs you need to maximize the potential of your own mill.

LNTCF reported that initially they experienced a lot of pressure to not take any logs out of loads that were sold to the big mills. They adjusted their sales structure and opted to live by the principle that the mills do not have the right to control the community forest tenure.



PHOTO: LNTCF MICRO MILL – PICNIC TABLE DONATED TO BARRIERE RECREATION CLUB

Setting Up a Micro Mill

A values-based business

When considering the feasibility of a mill for your community forest, it is important to remember the statements made in your management plan. The management plan is an essential document for the community forest because it not only provides the rationale for the AAC, it also includes statements about the community and their values that guide the management of the community forest.

The mission statement, guiding principles, goals and objectives of a community forest commonly seek to include a range of economic, social, environmental and cultural values. A discussion about a mill for a community forest should be reviewed in the context of those values.

The HPCF and LNTCF mills are managed for both profitability and local jobs. They report that the two things are intrinsically connected. For a business to be sustainable, it must break even at a minimum. A main goal of these micro mills is to create a profit, but also to provide local employment and contribute to community resiliency. “A mill at the Harrop-Procter community forest was always a part of the initial proposal for the community forest. It provides local employment, a decrease in our ecological footprint, and adds a real face to the forestry business,” says Rami Rothkop.

According to Harley Wright, chair of the Lower North Thompson Community Forest and a driving force behind the mill, “The mill is a way to increase employment, not just a focus on profitability. Staying in the black is important, but we have a goal to contribute to community resiliency.”

MILL AT HARROP PROCTER IN
THE EARLY DAYS OPERATED
BY DAVE JOHNSON



“Creating value is difficult and costly to do alone. It becomes easier when the whole community is involved in an ecosystem of value. This can take two forms. First, sharing knowledge and connections with suppliers, downstream businesses and even other producers who might be considered competitors. Other small mills can be viewed as partners, not competitors. Everyone wins when it becomes part of the culture to go down to the local mill for their next building project. This isn’t just about one operation, it’s about changing people’s mindset about their use of time, money and energy in contributing to their happiness.

— Hugh Scolah
(See Appendix C)



HARROP PROCTER FOREST PRODUCTS MILL SITE

Legal structure of the mill

Although there are a variety of legal structures that can be implemented, we found that the preferred model is to set the mill up under the umbrella of the community forest licence holder. In both of our case studies, the mill is a division of the community forest with a provision for separate accounting.

For example, the Harrop Procter Community Forest Cooperative holds the forest licence, under which the community forest and mill operate as different divisions with the separate names of Harrop Procter Community Forest and Harrop-Procter Forest Products (HPFP).

Similarly, the Lower North Thompson Community Forest Society (LNTCFS) is the licence holder, with their mill and community forest operations acting as separate divisions.

Mill site

There are several things to consider in choosing the appropriate site for your mill. Will your mill be in close proximity to your community? For a quieter, cleaner, more community-friendly option, your mill can run on electric power.

Most electrically powered industrial equipment runs on 3-phase power. But due to estimated costs ranging from \$80,000-200,000, HPFP opted to bring in single phase power to their site and use a phase converter to convert it to the 3-phase power required to run the electric mill and other equipment. This approach is less than half (\$35,000) of the cost of bringing 3-phase power to the site. However, the converter approach does occasionally present power supply limitations, particularly in their rural setting. If the best site for your mill is in an industrial area, an alternative may be to operate on diesel.

In the initial start-up of our case studies, private land was leased for the mill sites. However, as time passed and operations grew, fee simple became the preferred choice for land status. The mill site land is now an asset of the community forests.

Your community forest location and surrounding community/land base will help determine which type of mill site and land ownership situation will be most suitable to your circumstances. See the “Is a Mill Feasible for Your Community Forest?” section of this report for more guidance.

Start-up costs and funding sources

The start-up costs associated with building a micro mill business may be a daunting aspect of launching this new project in your community forest; however, there are a variety of ways to approach these costs with community support and outside funding sources.

Initially, HPFP was contracting mill usage as a pilot project to test the viability of operating a retail wood products business. Dave Johnson, a local farmer and member of the Coop, had a mill he operated with his son. Johnson provided the expertise needed for others to learn the business. As the pilot proved the value of the mill with \$420,000 in sales over three years, HPFP decided to expand the business and to outright own the mill. In 2010, they wrote a comprehensive Business Plan to attract public funding for their sawmilling and remanufacturing operation. Through grants and equipment procurement, the community forest eventually came to own their own land and infrastructure. It cost approximately \$150,000 to get the basic equipment for the mill operation.

For the LNTCF, grants were provided from the Southern Interior Development Initiative Trust. Initial start-up costs were not significant; however, when the land was purchased there were more costs associated with infrastructure and hydro. The 2018, LNTCF invested \$799,844 in land development, equipment and infrastructure as means to drive economic development and diversify the revenue stream. They installed water and three-phase power at the mill site, constructed a 35' x 120' mill building, a 30' modular kiln, and purchased a skid steer loader and firewood processor. They currently have \$2.5 to \$3 million in assets.

Should a community forest choose to pursue traditional financing, there may be additional requirements such as enhanced insurance or an environmental study required for the mill site.

WOOD-MIZER AT HARROP PROCTER FOREST PRODUCTS



Equipment

The sawmill is the greatest expense in the mill set up. The sawmill of choice for micro mills reviewed for this report is the Canadian-made Wood-Mizer portable sawmill. The LNTCFS started out with a Wood-Mizer LT-40 and recently upgraded to a Wood-Mizer LT-50. The Zirnhelt timber-frame business in 150 Mile House uses a Wood-Mizer LT-40, and recently purchased a mobile dimension sawmill. HPFP uses the Wood-Mizer LT-70.

Current prices for Wood-Mizer sawmill models:³

- LT 40 – \$54,034.
- LT 50 – \$62,418
- LT 70 – \$101,852

In the Harrop-Procter case, the full production plant consists of the Wood-Mizer LT-70 sawmill, a scrag mill, edger, moulder, yard machine and electrical/kiln building. The movement of products and logs within the site and loading delivery vehicles as well as larger freight trucks all require the purchase of a yard machine (forklift/loader). “Essential equipment includes: Log Loader/excavator, telehandler/forklift, sawmill, moulder, dry kiln, edger. These are the critical components without which we could not operate and service our customer base,” says Eric Martin.

WOOD-MIZER LT-50 AT LOWER NORTH THOMPSON COMMUNITY FOREST



3 Wood-Mizer, woodmizer.ca/en/products/sawmills/portable-sawmills, accessed February 26, 2021.

HPFP also uses a scragg mill to saw short logs into cants. A scragg mill has two blades that are movable and can cut 30 to 40 logs per hour. According to Rami Rothkop, “We always have piles of 4.6-6 inch tops that haven’t been milled. The smaller the log, the better it is for the scrag. The Wood-Mizer will use 6 inch and up. Preferably, the scragg will do everything 10 inches and less that is not a custom cut.”

Although the sawmill/edger is the single greatest expense of setting up a production plant, other equipment is needed to produce lumber products. To create high quality products, milling, kiln drying, and remanufacturing are best done at one site. When wood is milled but is still green, transporting it creates high risk of loss to damage.

Kiln drying adds value to your product. Rami Rothkop asserts, “You need to have a kiln to get into the value-added market of certain products. It does add more value and creates quality products with more confidence.”

The relatively minor cost of purchasing and installing a kiln (\$12,000), compared to the amount HPFP paid for contract kiln drying in fiscal 2010 (\$5,000) demonstrates that costs are soon recouped on kiln installation. The same case exists for the purchase of a molder, which produces finished products including flooring, paneling and decking. The cost of a molder (\$14,000) is close to the amount spent on contract molding in 2010 fiscal (\$12,700). — 2010–2011 HPFP Business Plan

At LNTCFS, Mike Francis describes the equipment investment:

“We needed something to load logs onto mill and handle timbers — we bought a wheel loader first, then added a skidsteer⁴. We could probably get away with one if just milling, but it’s nice to have a second machine especially with concurrent firewood operation. We bought the wheel loader used and skid steer was new. We traded the skid steer back for a larger one once we got into firewood production, as it had trouble lifting firewood bins. Telehandlers⁵ also seem popular for small operations as they can handle both logs and lumber.”

Woodco, the mill adjacent to the LNTCFS site, has scales and a log loader. The LNTCFS pays Woodco a fixed \$/load for weighing loads (a sawlog stratum setup is in place to save on scaling) and fixed \$/load for unloading logging trucks in the LNTCFS yard. An alternative would be self-loading logging trucks; however, they are more costly per hour and harder to find. This setup works well for LNTCFS and helps maintain good working relationships with other community members.

4 Skidsteer: A small, rigid-frame, engine-powered machine with lift arms that can push material from one location to another, carry material in the bucket, load material into a truck or trailer and perform a variety of digging and grading operations.

5 Telehandler: A machine similar to a forklift, but with a telescopic boom that extends upwards and outwards from the vehicle. It can be fitted with different attachments such as a bucket, pallet forks or a winch.

“In a wood products business, it is best to focus on tangible differences in the end-product and service that can be perceived by the customer and maintain superior quality over the long haul. Any attempts to create status, affiliation or convenience value will be fruitless in the long-run if quality can’t be maintained.”

— Hugh Scolah

Products and marketing

Quality, convenience, and contributing to local value are major factors in the product success for micro mills. Micro mills have an opportunity to offer higher quality, more specialized products than the majors because their local markets allow for it. Customers will pay additional costs as a trade-off because they identify with the value of local lumber from local forests, the ease of local purchase with delivery, and the high quality of the products.

HPFP prices are competitive with other retailers in the area. According to operations manager Eric Martin, it is difficult to speak to price comparison exactly because they don't compete locally on many products. "There is no set value in retail for value added products. The stud market in the commodity lumber world is much tighter, based on the future market for lumber. We sell a comparable size 2x4 fir board at a higher price than the lumber yards, but the quality is higher—basically more suitable for projects that require a higher-grade board. We tell customers this right away. We cannot compete in the commodity market, and there is no need to."

Martin adds, "In my last price comparison research, Home Building in Nelson didn't even give me a price, but simply said to buy at HPFP. This seems to be the case with pretty much all cedar products and many of the fir."

HPFP have a wide range of products that are not available with the larger producers (see Appendix A). There are two other mills similar to HPFP within a 1.5-hour drive that are direct competitors. HPFP will send customers to these places if they need something HPFP can't produce, or if they are a better fit for a customer's needs.

HARROP PROCTER FOREST PRODUCTS



Marketing of the mill products at HPFP has consisted primarily of word-of-mouth, which has been an effective method to date. If they were to expand their operation, HPFP would be looking to develop a marketing plan that would help them reach other communities similar to Harrop-Procter. HPFP operates under the umbrella of the HPCF Cooperative, and Coop members receive a 10 per cent discount, which has increased membership rates and interest in the mill.

The LNTCFS mill was established with the purpose of utilizing their oversized fir. Using that fir, the mill produces custom cut timbers and quality lumber. LNTCFS also occasionally purchase logs from local operators, farmers and other community forests, building local relationships in the process.

Like HPFP, LNTCFS has relied upon on word of mouth to promote their products and have not yet taken a more active role in marketing. They have creatively adapted their production to local demand and have had some success selling cants to the local mining and bridging industries. The supply and demand vary significantly, and when not in use the mill can be shut down.

Sales

Sales are directly linked to the quality of your product, as well as the customer service provided by staff. Both of our case study mills have experienced a steady increase in sales over the years since their initiation.

Following their purchase of the Wood-Mizer in 2010 and ramping up local sales, HPFP conducted \$455,000 worth of business in 2014, up from 2013 sales at \$394,000. Though they missed their 1 million dollars in sales milestone in 2019, it was successfully achieved in 2020. Rami Rothkop attributes the positive sales numbers to the quality of wood milled and to the high level of customer service.

At HPFP, lumber sales go primarily to the local retail market. Local builders are 80 to 90 per cent of their customer base — 50 per cent are do-it-yourself builders and 50 per cent are contractors. HPFP sales include some non-local sales, such as four to five truckloads to the Yukon. Now by word-of-mouth, Yukon sales are growing.

Knowing your customer base and market demands are a key factor in growing your mill sales. HPFP can predict and respond to changes in product demand by monitoring sales and inventories regularly, controlling inventory, monitoring building trends and by responding to customer feedback.

HPFP is now selling approximately \$1 million worth of products a year in a community of only 800 people, with most sales coming in from the local and surrounding area.

HPFP is now selling approximately \$1 million worth of products a year in a community of only 800 people, with most sales coming in from the local and surrounding area. Harrop-Procter is located across the lake from Balfour, requiring a cable-ferry ride that adds time to commute to other towns and communities. The profile of their market shows a fairly young population, frequent renovation/construction projects, and many rural vacation properties.

At LNTCFS, lumber, product and milling sales have steadily increased from \$11,001 in 2017 to \$58,511 in 2020. They operate an additional firewood and delivery service, which has experienced a significant boost in sales from \$69,399 in 2019 to \$117,972 in 2020. LNTCFS staff assert the value of providing good service and spending time with customers when they come to the mill.

Grading

For a timber or lumber product to be used structurally, it must meet the requirements of the building code and be engineered or graded. Much of what HPFP and LNTCFS sell does not require a grade stamp as it is not structural, rather they focus on siding, panelling, decking, fencing, etc. The biggest buyer for structural wood from HPFP is the timber frame market. In this case, the framer hires an engineer who signs off on the structural integrity of the wood and the building design, which is legally satisfactory, as the engineer is a professional and as such covers the liability and meets the building code. “Lots of folks just use our wood because it appeals to their values, so it feels like a good purchase,” says Rami Rothkop.

If a community forest was planning on more actively competing in the commodity market, every structural lumber product would need to be graded and stamped. “There are two ways to deal with this,” says Harley Wright, “You bring in someone to grade on a need basis or ideally get someone to take the lumber grading course to have available at all times.” The provincial median hourly rate for a Lumber Grader is \$30/hr, with a provincial median annual wage of \$62,568.⁶

LOADING THE KILN AT HARROP PROCTER FOREST PRODUCTS



⁶ WorkBC, Careers, workbc.ca/careers/9436#earnings-and-outlook, accessed March 4, 2021.

The Crew

Jobs and micro mills

The micro mill at Harrop-Procter Forest Products annually produces 8 person-years of employment. In accordance with BC Stats, one person-year is 1,750 hours. In simpler terms, they put 8 people to work full time with 2,000 cubic metres. In a community of 800, the jobs created by the mill are significant.

Randy Sunderman of Peak Solutions, Kamloops, offers some perspective through a comparison of the annual 2,000 cubic metres of wood run through the Harrop-Procter mill with the jobs generated by a super mill.

A super mill (>850,000 m³/year) creates about 1.8 jobs/1,000 m³. The HPCF mill creates 4 jobs/1,000m³. The 2,000 cubic metres which produces 8 person-years at HPCF would only produce 0.36 person-years in employment at a super mill.

Based on the table below, the 0.36 person-years number would increase slightly depending on the mill size. The smaller the mill, the more person-years. Most major licencees are now operating very large, or large mills and will not generate much more than 0.25 person-years per 1,000 cubic metres.

Table 2: Estimated lumber mill employment per thousand cubic metres of input by size

Survey year	Mill size			
	Very large ⁷	Large ⁸	Medium ⁹	Small ¹⁰
2016	0.18	0.23	0.27	0.5
2017	0.18	0.23	0.29	0.52
2018	0.18	0.25	0.28	0.59

⁷ Very large mills have a capacity greater than 850,000 m³.

⁸ Large lumber mills have a capacity greater than 295,000 m³ but less than 850,000 m³.

⁹ Medium lumber mills have a capacity greater than 95,000 m³ per year but less than 295,000 m³.

¹⁰ Small lumber mills have a capacity less than 95,000 m³ per year.

BCCFA 2020 INDICATORS REPORT

"55,902 m³ was sold to value added manufacturers, pole, veneer, plywood, & OSB facilities. Collectively, the mix of wood volume going to these mills in 2019 created a wood processing employment coefficient of 0.884.

This means that the relatively small volume sold by community forests to those processing facilities resulted in 49.40 person years of wood processing employment."

More micro mills could help boost employment from CFA volume.

"For success, you need to have the right logs and log supply.
But you also need to have the right people with the right skills.
Then the market needs to be taken into consideration."

— Rami Rothkop

Hiring the right people

The most critical factor for a community forest to weigh in the consideration of a manufacturing initiative, or any other business, is the people. Mill operators must build the right team, which is a balance of people, their skills and abilities and hiring dependable, skilled leaders and workers.

It is ideal to divide the managerial duties into two positions because of the two different skills sets that are required to run a successful operation — an operations manager and a mill manager. According to Damon Zirnhelt, "It is hard to find the right person because it's a hard job. More than one person needs to be involved in the sawmilling operation because different skills are needed." It is crucial to find a leader/manager who desires to support the community forest ethic and management, is willing to take risks, and has a strong belief in the importance of community.

Eric Martin is the Operations Manager at the HPFP mill, and handles the crew management, coordination with loggers, customer relations, order processing, scheduling and more.

I am responsible for all incoming sales calls, emails, and drop ins. I also coordinate all traffic in the log yard; loads of logs in — when, how many, which species, etc. I manage all personnel on a day-to-day basis — who is doing what job, with who, filling which orders, when etc. I handle all HR responsibilities with David's support; hiring and firing, internal complaints etc. I am responsible for all budgeting and inventory for HPFP. There is probably a number of smaller things I have missed. Essentially I am the Sales and Operations Manager for HPFP and all the duties that go along with that title.

David Strom is the Production Manager at HPFP, responsible for all aspects of mill management. He brings the skills critical for the actual mill operation. A millwright or a person with welding and mechanical skills is a cornerstone of the mill crew. The Production Manager must have experience operating a mill and be mechanically inclined for the operation to succeed. Milling skills can be learned, but it is a bonus if the Production Manager also has experience as a sawyer.

The LNTCFS is currently in a transitional phase of planning and scheduling. Most of the former or potential workers have gone on to work on the local pipeline projects, or have turned to Covid-19 relief programs, so finding workers right now is challenging. The LNTCFS are now at a turning point and are reviewing how to best manage the milling operation going forward.



LNTCFS JCP CREW WITH PREFAB CABINS FOR SIMPCW FIRST NATION CULTURAL CENTRE

Mentoring and encouraging younger generations

The average age of the crew at the HPFP mill is around 50 years of age, with the youngest at 38 years old and the oldest at 62 years old. Succession planning and knowledge transfer is a high priority for the future success of the mill. “When you find good people, don’t let them go,” says Rothkop, “Keep people engaged, spend time with them. Mentor them and show them that you care.”

“For young people, it’s important to nurture the idea that this is a bigger picture issue — it is about local growth and value,” adds Damon Zirnhelt.

Eric Martin provided the following testimonial on his position at HPFP and how he would promote what he does to a younger generation:

I am passionate about managing HPFP because of the values that this organization champions in managing our forests and providing opportunities for local people. We have employment that is more than just another job and products that are above and beyond what is normally available. We have a strong connection to our local community and to our land base. We have the opportunity to protect and manage the resources that directly impact our lives in an active and responsible way to ensure we have something for future generations to enjoy. I grew up here, in this community, and have a strong connection to the land. I am a farmer and a father, and I value all of the things that this organization has to offer for all aspects of my life. This is what I can pass on to prospective employees, customers, community members, board members, and visitors of all kinds, and am always interested in sharing our story and what we do.



JCP CREW AT WORK LNTCF

JOB CREATION PARTNERSHIP PROGRAM

Job Creation Partnership (JCP)

is a BC program to assist unemployed, EI eligible clients with opportunities to gain meaningful work experience. Funding is given to organizations for projects that will provide community benefit while creating jobs.

Harley Wright at LNTCFS has worked with the Job Creation Partnership program for 10 years. It allows for development of hands-on work skills and mentorship. LNTCFS also hires summer students each year to encourage interest for the future.

Mike Francis, Manager of the LNTCFS mill:

For our mill we've hired from both within and external to the JCP program. From my experience, the JCPs benefit us more in terms of project funding support to pay for the costs of the program and meeting LNTCFS' strategic objectives for education (training/mentorship) than as a means to finding people to work for us. Although it does function well as a screening mechanism for future employees (we did transition two from JCP to 6-month terms, with one staying on for another year), most of the participants have other challenges that contribute to their unemployment. As a small operation, unless it's a short-term labor position, we'd be looking for higher levels of experience and competencies than what the JCPs tend to offer. That said, the vast majority of participants have found employment through our JCPs.

WORKER AT HPFP CRIMPING A BANDING CLIP ON A LOAD OF CEDAR EDGING WASTE – SLAB AND EDGINGS ARE Banded BEFORE REMOVAL FROM THE PRODUCTION AREA FOR SAFETY AND LOGISTICAL REASONS



Mill Waste and Firewood

DISPOSAL OF THE WASTE CREATED through the milling operation is an important, and often challenging factor for small mills.

Letting huge piles of slab, sawdust and planer shavings to collect on a mill site can be an extreme fire hazard, so the waste must be removed in a timely fashion. The problem is more acute when the mill site is small and storage is a problem. In the old days of beehive burners, mills regularly burned their waste, but environmental controls prohibit this activity. Most micro mills store or bury their waste.

The Environmental Management Act (EMA) requires that all facilities involved in primary wood processing obtain authorization for any waste they discharge, regardless of the size of the operation.

Below is some information on the authorizations, and possible exemptions, that may be applicable to micro mills.

Landfilling of sawdust (and other wood waste)

In order to landfill wood waste from mills, the owner will need to register under the *Code of Practice for Industrial Non-Hazardous Waste Landfills Incidental to the Wood Processing Industry*.¹¹ For more information on how to register for this code of practice please visit the ministry's Guidance, forms and fees for waste authorizations website (scroll down to the name of the code under the "Express transaction forms and guidance" heading). Also available is a comprehensive wood waste landfill guideline.

Sections 3(4),(5),(6) of the Waste Discharge Regulation provides exemptions (ie. no authorization is required) for the use of industrial wood residue if used as a soil conditioner as prescribed in those sections.

Burning of sawdust (and other wood waste)

The Open Burning Smoke Control Regulation does not apply to waste generated at facilities that manufacture wood products, as it only applies to the waste that is generated through logging activities. Mills that process logs into wood products require a site specific permit to burn wood waste. Proponents applying to burn their wood waste can expect to be asked to provide strong rational showing that they have considered alternative options. In order to obtain authorization to burn wood waste, they may be required to use an air curtain incinerator or similar equipment designed to reduce emissions.

¹¹ bclaws.gov.bc.ca/civix/document/id/complete/statreg/263_2010, accessed March 17, 2021.



PAUL LAMBERT CUTTING SLAB FROM HARROP PROCTER FOREST PRODUCTS FOR FIREWOOD SALES

Those wishing to apply for a permit to burn wood waste will need to apply for a site specific waste discharge permit and follow the ministry's routine application process, initiated by submitting a Preliminary Application Form. Once the form is submitted and a \$400 application fee is paid, the application will be assigned to ministry staff that will discuss the facility with the proponent and create a detailed outline of the technical information required for the final application.

For more information on how to obtain a site specific waste discharge permit, please visit the ministry's Guidance, forms and fees for waste authorizations website¹² (scroll down to New permit, approval or Operational Certificate tab under the "Routine application forms and guidance" heading).

Alternative uses

With the increased focus on carbon emissions and renewable energy, some micro mill owners are experimenting with alternative solutions to burying or burning their waste. Equipment to manufacture consumer wood briquettes (also known as presto logs) about the size of a beer can out of sawdust are priced out of Great Britain for under \$7,000. Manufacturing of the dense, long-burning product offers a low-risk opportunity for proof of concept testing by micro mill owners. Such an operation attached to a micro mill would also enhance local job opportunities.

The preference is to make something useful out of the mill by-products. Large mills grind or chip the waste for large furnaces that burn the biomass, or hog fuel as it can be known as, and used on site to create heat and or power

¹² Waste Discharge Authorization, www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization, accessed March 17, 2021.

(co-generation). This technology for use by micro mills is expensive and not properly sized, so it remains out of reach for micro mills at this time.

The slab waste from HPFP is given to Paul Lambert, a local community member, for his firewood business at no cost, and LNTCFS partners annually with the mill next door to bring in a grinder and ship the chips to the closest pulp mill. There is no profit from the either method, but the goal to manage slab is achieved.

HPFP pays a local property owner to haul away the sawdust who is using it for landscaping. Alternatively, a one-ton dump truck can take five to six yards of sawdust to the local dump for a \$30 tipping fee. HPFP is looking into biochar options for future consideration. LNTCFS sawdust goes to a First Nation greenhouse. Planer shavings are always in high demand in rural areas and given to locals with farms, barns and horses. LNTCFS is considering offering bulk sales of planer shavings with local delivery.

The Firewood business

The slab from mill activities results in product that can be used as firewood, and has the potential to become a profitable business as in the case of HPFP. Many community forests already provide access to firewood from their forest operations as a community service. Firewood is another way to add value and diversify the benefits of the CFA, while reducing waste in the block.

Community forests are making firewood from forest operations available for the community by decking it at roadside and issuing permits, and making loads of logs available. The BCCFA 2020 Indicators Report shows that 0.4 per cent of CFA log sales are firewood. Data from the past several years of Indicators reports include the following stories of CFAs distributing firewood:

- **Wetzin'kwa Community Forest** delivered loads of firewood to the community of Wilset, formerly Moricetown.
- **Alberni Valley** — All waste is decked at roadside and then firewood permits are issued by MFLNRORD. There is a large local demand for firewood. Very large this year with the mill strike and shutdowns.
- **Bella Coola** — They sell logging truck loads of firewood to local commercial firewood producers.
- **Powell River** — Firewood material is left at the roadside for free use permits to the public.
- **Kaslo** — Annually donates a load to a community group for firewood sales in whatever way they decide. Some raffle off the whole load, sometimes the recipient will sell cords.



SLAB FOR FIREWOOD HPFP

Waste grows as the business grows. Management of waste “has evolved over time, and with growth of the mill it has become more of an issue.”
— Rami Rothkop

- **Nakusp and Area Community Forest (NACFOR)** makes loads of firewood available for donation to local organizations to use as fundraisers. NACFOR also fosters social licence through enduring partnerships with community groups and educational partners. They donate logs and in-kind support to the Community Works firewood program which connects people with diverse abilities to community by reducing employment barriers and providing skills training and work experience.

PROCESSED SLAB FROM HPFP IS SOLD AS FIREWOOD IN RETURNABLE MESH TOTES



Nakusp and Area Community Forest (NACFOR) Firewood Project

“In 2018 NACFOR worked with Arrow and Slocan Lakes Community Services (ASLCS) to deliver a program to support ASLCS diversity clients. Goals of the firewood project were to provide paid work experience for two people to work with a coach and supervisor for six weeks — in a “real work for real pay” environment. The clients developed skills including how to work as a team, communication, development and implementation of a plan, along with work efficiencies and how to provide customer service. The clients also learned how to operate equipment safely — including chainsaws, hand tools and the wood splitter — and how to stack a cord of wood so it doesn’t fall over! Another goal of the project is to provide affordable firewood to people in the community.”

— Frances Swan, NACFOR



PHOTO: LOWER NORTH THOMPSON COMMUNITY FOREST MICRO MILL – PROCESSED FIREWOOD

“For as much as I’d hate to admit it, I think selling firewood has raised our profile and general awareness of our organization more than anything we’ve done previously. The sheer volume of people we talk to through firewood sales is much larger than any community meeting or event we’ve held or attended. It’s an additional community role we’ve taken on that brings awareness of our organization and the benefits we provide, which in turn helps build social licence.”

— Mike Francis, Manager, LNTCFS

LNTCFS owns a firewood processing business attached to the CFA. According to our 2020 Indicators Report, firewood sales were \$69,399 for the year.

The history of the operation is explained by Mike Francis:

Through our Firewood Business Development Project, the LNTCFS was able to leverage \$32,023 in cash and in-kind contributions to receive a \$100,000 grant from the BC Rural Dividend Fund. The objective of this project was to expand upon our current milling operation based in Barriere by developing a small firewood processing facility to complement and utilize waste material from our mill as well as low value logs that would otherwise have been wasted and burned in slash-piles. The project saw the purchase of a firewood processor, construction of a shelter, and created one permanent full-time position. Response to the project has been strong with \$69,000 in revenue through local sales during our first winter of operation. We continue to expand and develop this aspect of our business as a means of job creation, community service, and economic diversification for our organization.

LNTCFS is charging \$250 a cord, including taxes, with delivery around Barriere. Fir and birch prices have been changing, and the mill had to purchase some to keep up with demand. Firewood production has improved utilization of birch and will help maintain utilization of other species as well when pulp prices are low. The largest cost is associated with getting the logs into the yard. This activity requires paying for logging and trucking, and sometimes additionally buying for \$50/m³. It becomes more of a community service than a profitable business, but with high demand and increasing local sales, they project there is room to expand the firewood business.

Customers can order firewood on the LNTCFS website. LNTCFS accepts payment by cheque or cash upon delivery, as well as E-transfers. They provide clear instructions to potential customers that they require sufficient space to back in and raise the truck box to unload the firewood, and that customers need to ensure that driveways are clear, pathways are clear and that there are no snow piles to slow delivery.

Return on Investment

AS WITH ANY BUSINESS there are many variables that will determine how well the business will do. Conducting an initial feasibility study (leading to a possible business plan) will give some idea of how the business will look on paper, and help make informed decisions early on. Creating and maintaining a successful business is a mix of acumen, will, experience, art, and science; potential success in any sector (including milling) will vary widely based on any number of variables.

Log input costs are a large factor in the milling business. HPFP charts log cost in two ways:

1. Logs at the value that would have been realized had the logs been sold into the marketplace at the time, and
2. Logs at the actual cost incurred, which is almost always lower than the market value. This allows for cheaper input costs, which enables the profit potential to potentially be transferred to the local mill and realized in profit as an output.

Calculating input costs both ways allows the community forest to know how well the business is doing under both scenarios.

It must be stressed that how well the business is doing, and return on investment is not always measured in economic terms. For example: The numbers may show a slight loss on paper when comparing market and actual cost sometimes, but 10 local jobs have been created at the mill, and this socio-economic benefit to the community is much greater than the financial deficit created.

SCRAGG MILL HPFP



Opportunities in Partnerships with First Nations

AN IMPORTANT GOAL OF BC'S COMMUNITY FOREST PROGRAM is to promote and strengthen relationships between Indigenous and non-Indigenous communities and people. Half of the operating community forests are either held by First Nations or by a partnership between Indigenous and non-Indigenous communities. The BCCFA promotes forest management that respects First Nation rights and cultural values, and fosters understanding and cooperation.

Most Crown land in BC is unceded traditional lands and territories. The amount of timber harvested under First Nations control is increasing, and First Nations communities are actively seeking an equitable share in the benefits of forest resources harvested in their traditional territories. The BC First Nations Forestry Council's (FNFC) Workforce Strategy¹³ advocates for First Nations people to be full partners in forestry and to increase their role in forest sector-related education, training, employment and business development.

Currently, Indigenous participation represents approximately only 5% of the total workforce in BC's forest industry.¹⁴ The goal of the FNFC Workforce Strategy is to double Indigenous employment in the BC forest sector by 2027. According to Albert Gerow (Ts'il Kaz Koh First Nation/Burns Lake Indian Band, Burns Lake Band Economic Development Officer and BCCFA director), with high unemployment rates in many Indigenous communities, there is a huge untapped labour pool that could be used toward the training and hiring of skilled sawmill workers.

Furthermore, businesses that are owned by First Nations or have 51% Indigenous ownership in a joint venture, are able to access important funding and supports, including:

- A portion of the costs of a feasibility study and business plans;



JPC IN ACTION, LNTCFS

¹³ First Nations Forestry Council, 2018, BC First Nations Forestry Workforce Strategy, forestrycouncil.ca/cpages/jobs-training.

¹⁴ Ibid.

- Training and development;
- Grants for equipment; and
- Tax benefits if the micro mill is on reserve lands.

For example, FPInnovations Indigenous Forest Sector Technical Support Program covers up to 80% of the costs for technical services such as feasibility studies, business planning and general technical support. Since the inception of the program in 2007, FPInnovations has supported more than 75 Indigenous communities in BC to build Indigenous employment opportunities. They work directly with community leadership to develop and implement a customized program and offer expertise to support community innovation and build collaborative forest sector partnerships.

The importance of First Nations participation in the forest sector has never before been such a priority for government in BC. This is reflected in the provincial government's budget, as well as in ministerial mandate letters. For example, in the November 26, 2020 Mandate letter given to Murray Rankin, Minister of Indigenous Relations and Reconciliation, Premier Horgan directed Rankin to collaborate with Indigenous Peoples to build long-term relationships and agreements that "recognize and support reconciliation, self-determination and economic independence."

In addition to the economic opportunities of fibre, labour force and financial possibilities associated with an Indigenous/non-Indigenous partnership or joint ventures, First Nations can bring important social and ecological

In addition to the economic opportunities of fibre, labour force and financial possibilities associated with an Indigenous/non-Indigenous partnership or joint ventures, First Nations can bring important social and ecological perspectives through their traditional knowledge and stewardship practices.

perspectives through their traditional knowledge and stewardship practices. There is value in developing relationships that lead to deeper understanding, mutual respect, and stronger community resiliency.

First Nations can bring a lot to the table in a sawmill operation. Creativity, commitment, listening and learning can create positive change in our communities that can also contribute to reconciliation and social and economic growth. For further reading on resources, success stories and tools for building effective partnerships with First Nations, please see Appendix D.

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Is a Mill Feasible for Your Community Forest?

BELOW IS A LIST OF IMPORTANT ELEMENTS to consider in determining the feasibility of operating a micro mill at your community forest:

Values of your community and your organization

- Review your foundation statements — does a mill help you to achieve your purpose and goals?
- What local interest and support is there for products from your potential mill?
- Consider mutually beneficial partnerships with local First Nations, individuals and organizations.
- Doing outreach initially and being inclusive during the development process defines a Community Forest and will help minimize conflict along the way.

Sawmill champions

- Do you have the right people?
- You need the right team to have a successful mill operation. You will require people who are willing to put the work in to make the project succeed. Some mechanical experience is needed. If the people you need are not in your local area, expand beyond your community to recruit those who will get excited about the project and see it through.
- Community forests on a model of contracted staff must consider the viability to change the model to one of hiring employees.
- People-first leadership is a prerequisite to increasing the potential for success. Some say you must build your team first!

Community forest fibre basket

- Look at your community forest log supply. What fibre is available?
- What opportunities are there for the most suitable timber suited to value added production from your AAC? What species and products are going to have local demand?

Mill location

- Will you lease or purchase land?
- What is the power supply? 3-phase is preferred
- What is the existing infrastructure — buildings, water, septic?
- Is the land in an area that can tolerate the noise a mill makes?
- Are there any potential zoning constraints?
- Are there other social, political, or ecological constraints?



PHOTO: LOWER NORTH THOMPSON COMMUNITY FOREST MILL

Products

- What products are needed in your community?
- What niche can you fill in your local market?
- What are the opportunities for local, quality custom cut sales?
- What can you produce and viably sell out of the region?

Start-up costs

- You will need to acquire equipment for the mill, the most expensive piece being the sawmill.
- Can you find public funding, traditional financing, or do you have cash on hand to purchase equipment?
- Also consider the costs associated with insurance, mill site (fee simple or lease), power, infrastructure.
- Take the time to consider as many costs and options as possible in the business feasibility phase.

Waste

- Consider and include waste management cost in your initial business analysis.
- What are the opportunities to utilize waste locally?
- Use of slab for firewood operation? Local partnership?

Supporting Existing Local Manufacturers

IF A MICRO SAWMILL OPERATION is not feasible for your community forest, you can still provide support and build lasting relationships with the local manufacturers who are operating mills at a smaller scale or taking on other value-added projects. The most straightforward way to do so is by making logs available to small manufacturers.

There is also potential to assist in funding innovative ideas and value-added projects in your community. For example, Nakusp and Area Community Forest is considering training a local as a lumber grader to support existing small local mills, so they can produce structural lumber. Wetzin'kwa Community Forest out of Smithers is on a focused program to reduce logging waste and are contemplating alternatives to burning in the block. They have "set dollars aside to be a part of a bigger business model" with a community entrepreneur with a plan for, for example, an air curtain burner or a biochar initiative. They want to help make an investment, according to manager Jay Baker.

PHOTO: HARROP PROCTER FOREST PRODUCTS MILL – KILN LOAD



Conclusion

OUR EMPHASIS WITH THIS REPORT IS TO HIGHLIGHT the unique opportunities micro sawmills present for community forests to create more local jobs, increase value from harvested trees, and enhance rural economic diversification. Furthermore, a micro mill attached to a community forest is a means of creating culture and building community resiliency. It leverages a shift in perspective, ethics of service, and producing superior quality products that can grow naturally out of a commitment to looking after one's own community.

A micro mill attached to a community forest is a means of creating culture and building community resiliency. It leverages a shift in perspective, ethics of service, and producing superior quality products that can grow naturally out of a commitment to looking after one's own community.

Every community forest is different, as are the settings and communities in which they operate as well as the challenges and successes they may experience. Each community forest will identify their specific roadblocks and how to overcome them, which will be wide and varied based on their feasibility studies.

We encourage you to keep the conversation going, and to think outside of the box and push toward progressive, innovative practices in your community forest.

PHOTO: HARROP PROCTER FOREST PRODUCTS MILL



Harrop Procter Community Forest Micro Mill Case Study

Background

The Harrop Procter Community Forest (HPCF) is located on the west arm of Kootenay Lake, comprised of a 10,932 ha tenure of 100-year old mixed forests, domestic watersheds, and steep, sensitive terrain. The HPCF is accessible only by a small cable ferry and services an independent, diverse and active rural community.

Historically, the community was opposed industrial clear-cutting and logging in consumptive use watersheds. Since 1976, local citizens had called for an alternative approach that culminated in the 90's with blockades and arrests over the building of a logging road into the community. The community advocated to have the land surrounding the community placed into a protected area, but efforts failed. An extensive community engagement process was conducted and received strong support to submit an application to the new community forest pilot program, as the next best option to industrial forest management. In 1999, they were the seventh community in BC awarded a community forest pilot agreement.

Certification of their operations under the Forest Stewardship Council (FSC) was at first hoped to contribute to market advantage and price point of their logs. While FSC certification has not created these financial gains to date for the HPCF, it has had the benefit contributing to the local social licence necessary to operate in the land surrounding the community. HPCF takes direct responsibility for their operations with 100 per cent of their planning, layout, and supervision conducted in-house.

The HPCF takes an ecosystem-based approach to management which is based on the principles of landscape ecology and conservation biology. While their AAC was originally set at 2,603m³, over time, and with intimate knowledge of the landbase, they were able to increase the AAC to 10,000m³ while continuing to employ their objectives and management approach.

Objectives

The HPCF prioritizes community values and continues to advocate for:

- Preservation and protection of all watersheds in the community and the assurance of a consistent quantity and quality of water
- Ecologically based forest management practices
- Locally based employment
- Research, education and sustainability for rural communities.

Legal Structure

The overall governance of the community forest is comprised of two organizations. The role of the Harrop Procter Watershed Protection Society (HPWPS) is local environmental stewardship, research, and education with a specific task to monitor the plans and activities of the community forest. The Harrop-Procter Community Co-operative (HPCC or the Coop) was established to hold the licence and run the business of the community forest and generate local economic development. Harrop-Procter Forest Products (HPFP or the Mill) is a subsidiary company under the umbrella of the HPCC.

The Mill

The 1999 business plan for the HPCF included a goal to increase capacity to locally mill logs coming from the community forest. A small mill was already being operated in the community and it was an inspiration for making more lumber available to the community, while putting local people to work. At 5 or 6 years into their operations, they saw the business struggling for viability and they were still carrying debt from their community forest start-up. With the higher costs for their method of forest operations and reliance solely on log sales, they turned their attention to adding value to what they harvested.

A pilot project was launched to test the viability of a retail value-added business using community forest logs. HPCC entered into an arrangement with one of their founding board members, Dave Johnson, leasing some of his land and contracting out the sawmilling to him. In just over three years and \$420,000 in value-added sales, they were able to demonstrate local demand for their products. As business progressed, HPCF made an agreement with Johnson to subdivide and they purchased the land in 2018. The mill site is now owned by HPFP.

By 2010, they were motivated to grow to meet the demand for their product. A 2010 Value Added Business Plan assessed a number of options to expand the milling operation.

They identified three goals and objectives for future value-added operations that the business plan would need to address:

1. GOAL: Obtain financial and operational knowledge to determine how to move forward with the value-added business.

- o *Objective:* Determine if we can be competitive enough in the local / regional wood products market to sustain the operations of HPCC, and if the venture is operationally viable.

2. GOAL: Board decision on the future of the value-added business.

- o *Objective:* Develop and gather appropriate data on potential business scenarios to enable board review and selection of the business option with the best fit for HPWPS/HPCC.

3. GOAL: Implementation of selected business option.

- o *Objective:* Establish infrastructure, increase local employment, and increase value-added profit margins and revenue.



LUMBER FROM HPFP ON THE FERRY HEADING FOR A SMALL REMANUFACTURING MILL. SUSAN MULKEY PHOTO

Values based criteria that they wanted to be reflected in a decision were applied to assess the options for business expansion:

- Capital costs
- Cost per 1000 board feet produced
- Production capacity
- Grade recovery
- Operating costs
- Lumber sizing
- Lumber finish
- Parts Availability
- Maximum log length
- Cleanliness of manufacturing technology
- Number of individuals employed.

The comprehensive plan leveraged an \$80,000 grant from Columbia Basin Trust which helped to purchase the Wood-Mizer LT70, Option 4, and enabled the mill to operate with no debt. Given their business plan and priority to create local jobs and products, the mill is viable and considered a success at a break-even scenario.

Though 10 years old now, the table below shows the options for setting up the sawmilling operation considered by HPCF and the factors they used in their analysis of the options from the 2010-2011 Harrop-Procter Forest Products Value-added Business Plan.

2010-2011 Sawmilling, Remanufacturing and Retailing Report — Assessing the Options
 Authors - Pamela Dykstra MRM, R.P. Bio, Biome Ecological Consultants Ltd., Rami Rothkop, Rothkop Holdings Ltd. Bill Macpherson, Bilmac Consulting, David Strom

	Option 1	Option 2	Option 3	Option 4	Option 5
	Contract milling	Existing mill @ lease site	Used electric circular headsaw with band resawing	New Wood-Mizer LT70 electric-powered bandmill	New Diesel-powered bandmill
Capital Cost	none	moderate	moderate	moderate	moderate
Cost per 1,000 board feet	\$400-\$500	> \$500	\$153-\$181	\$219-\$253	\$241-\$271
Production capacity	moderate	low	high	moderate	low
Grade-recovery	moderate	low	very high	moderate	moderate
Operating costs	high	moderate	low	medium	high
Lumber sizing	variable	low	very good	average	average
Lumber finish	variable	band	circular/band	band	band
Parts availability	n/a	Jobber Abbotsford	Jobber/Finland	Salmon Arm	Salmon Arm
Maximum log length	32'	32'	28'	32'	32'
Cleanliness of technology	dirty (diesel-gas)	dirty (gas)	dirty (diesel generator)	clean (electric)	dirty (diesel)
Number of FTE	0	3~	2	2	2

The Mill Site

The mill site is now owned by the HPFP. It was originally located on land owned by Dave Johnson. As the business progressed and markets were strong, in 2018 they entered into an arrangement with the Dave to purchase the land. A subdivision was required with land zoned in ALR/light industrial. Purchased the land in 2018 and it took two years to make the payments. HPFP has been fortunate to have lenders and business partners with goodwill, shared values and a belief in the organization.

HPFP MILL SITE





DAVE STROM, HEAD SAWYER, HPFP

Equipment

HPFP has a variety of milling equipment and a 2,600 sq. ft. lumber storage facility, which was built in stages by local contractors. HPFP runs a Wood-Mizer LT-70 band sawmill, an edger, molder and a kiln. The kiln is a 40 ft container kiln with LT 250 electric. They also own a forklift and a delivery truck.

HPFP added a scragg mill that has 2 blades to do primary breakdown for smaller sized logs. It is possible to process 30 to 40 logs an hour if the production line is set up efficiently — logs must be bucked and ready, with crew and machines there to move slab and sawdust.

A stationary blade portable mill with a resaw attachment is also used on a semi-permanent contract basis. It is used for breakdown into mostly 1 and 2"-thick boards and 5/8" or 1 1/4" for decking. They would like to add an electric resaw, but it would require 3-phase power. They are looking into new technology battery packs that show promise.

Power

The mill is run on electricity. Diesel generation is typical for these operations, but forest manager Erik Leslie says that electricity is better for them. All of their studies point to electricity being cleaner and lower cost, and the mill is also quieter than comparable diesel run operations.

Most electrically powered industrial equipment runs on 3-phase power. But due to estimated costs ranging from \$80,000 to \$200,000, they opted to bring in single phase power to the site and use a phase converters to convert it to the 3-phase power required to run the electric mill and other equipment. This approach is less than half (\$35,000) of the cost of bringing 3-phase power to the site. However, the converter approach does occasionally present power supply challenges. They have learned to manage and must run the scragg mill on its own or just run the moulder and wood miser. Because of their small crew, it is not often an issue in comparison to the large investment to bring in the 3-phase. Eric Martin says, "We have had numerous conversations about it, asking — do we really need to do this now? But so far there have been other priorities."

Log Utilization

The mill is currently utilizing approximately 20 per cent of the harvest from the community forest. HPFP estimate that the mill could increase output by 20 to 30 per cent. The business is currently at 80 per cent production capacity.

98 per cent of what the mill cuts is from the community forest profile, with the occasional purchase of cedar. They are not milling any pulp species, or the standard bush run. “We need a good quality log to make our operations work,” said Eric Martin, the mill manager. They process approximately 2,000 m³ of the 10,000 m³ community forest AAC. The amount the mill needs is constant.

Its operations focus on utilization of higher-value and unique logs from the community forest. The focus is on log supply for a finished product targeting cedar, including pole grade, pine and Douglas fir in specific sizes for their milling operation. They are currently looking at milling pole grade cedar.

Local loggers are a critical part of the forest to mill to lumber process. They identify log characteristics and top size specifications that are well suited for the mill. The relationship between the mill and the loggers is based on mutual respect and dialogue. Regular debriefing of the operations points out what has worked and where improvements are needed.

Eric Martin, the mill yard manager, grew up in HP and is raising his family there. Eric works directly with the loggers to see that logs are bucked to lengths for orders. The mill personnel work closely with the loggers. Sorts are set up in the bush. Logs are then resorted in the mill yard. Cutting is set up to maximize value and lumber recovery from each log.

Log supply has to be steady, but for their quantity it is a trickle.

PHOTO: HARROP PROCTER FOREST PRODUCTS MILL



Product Line

The focus for the product line is a range of goods that respond to customer demand, price point, and available fiber supply from the community forest.

HPFP are cutting timbers, trim, siding, decking, and panelling. Customers can select from kiln dried, rough sawn, moulded lumber (tongue and groove, smooth 4 sides, etc.) or smooth on all four sides lumber. They work to ensure a good relationship with the local mills and cannot compete with them on the commodity products such as 2x4s.

- Kiln-dried Douglas fir casing and base board.
- Cedar is the preferred species for fence and garden box construction.
- Timbers are used in the time-honoured timber framing profession to construct everything from decks to large commercial buildings.
- Siding options depending on budget and style preference. The patterns that are manufactured and stocked are bevel, channel, Heritage drop, and board and batten.
- T and G panelling.
- Decking.
- Rough-Sawn and Surfaced Lumber.

HPFP experimented with a flooring line but found that it needs to have a low moisture content that was challenging to manage and maintain profitability.

Custom orders can be a challenge. According to Dave Strom, the main mill operator, and long-time employee, making limited products can concentrate capital, minimize inputs and maximize profits.

Sales

Following their purchase of the Wood-Mizer in 2010 and ramping up local sales, in 2014 HPFP conducted \$455,000 worth of business, up from 2013 sales at \$394,000.

Though they just missed their \$1 million in sales milestone in 2019, they successfully achieved it in 2020. Rami Rothkop, a founding member of the Co-op and the mill's first manager, attributes the positive sales numbers to the quality of wood milled and to the level of customer service.

Lumber sales go primarily to the local retail market. Local builders are 80 to 90 per cent of their customer base — 50 per cent are do-it-yourself builders and 50 per cent are contractors. HPFP sales include some non-local sales, such as four to five truckloads to the Yukon. Now by word-of-mouth, Yukon sales are growing.

In 2015 they delivered an \$80,000 order to an Albertan timber frame contractor. The buyer was of Austrian descent and was deeply impressed with the forest management approach after he spent a half of a day in the forest. They cultivated a return buyer and recently (2021) delivered on another order.

HPFP sells timbers to local independent timber framers. The bigger timber frame companies in the area have their own mills.

HPFP can predict and respond to changes in product demand by monitoring sales and inventories regularly, controlling inventory, monitoring building trends and by responding to customer feedback.

In 2020, HPFP decided to do more advertising in the local regional market, targeting communities that are similar to the H-P lifestyle and values.

Initially, it was believed that FSC certification would leverage a premium price and expand the market share for HP logs and lumber. However, there has been little evidence that certification enhances the financial bottom line. More important to sales is the local branding of their forest management standard, the quality of their product and customer service.

Service

An important focus for HPFP's sales department is an emphasis on service. In addition to offering delivery, HPFP's staff, having previous experience in the building industry, can help customers make appropriate choices for their specific projects. Martin says, "The ability of our sales staff to help the customer find what they need and to give advice on how to build a deck, and which species of wood to use is lacking in many wood sales businesses. But we know through customer feedback and referrals that service is a big reason HPFP is gaining market share."

They have tried to emphasize the importance of service with all of their crew, including the summer students. Eric Martin is the primary mill manager. "We know what we have here and can help the customer decide what quality they need for their project, or are they just building a fence. We can offer options, spend time talking with them about what is possible. We try to get in their heads and work with them and help them fill their order. We get lots of repeat orders."

Crew

The success of the operation relies upon the crew. Eric Martin handles all of the scheduling, coordination with the forestry crew for log flow, and ensures all policies, safety, regulations are followed. He takes orders and deals with all sales. He is the public contact and liaison with the forestry arm. Rami, the first mill manager, had the vision for the mill, the innovation and drive to make the new venture something out of nothing. His "by the seat of the pants" style supported the growth of the business. As the business has matured, and systems have been put into place and Martin is managing the successful operation.

Dave Strom is the head sawyer.

In the crew of 8, Martin at 38 is the youngest of the crew. They are trying to hire on more crew. They just hired a man of 62 on part time.

They hire local youth in the summer, in wage subsidy programs through the Columbia Basin Trust and the federal government. One youth worked at the mill for 5-6 years.

They rotate people on jobs and look for aptitude.

Martin says it takes special people to stick it out at the mill. A person must have the passion to work for the organizational values and the good story.



PHOTO: HPFP CREW

Grading

“The fact that we have values that we stand by appeals to a lot of people. We emphasize the higher end of the quality scale in our products, but at a comparable price. Martin says they spend a lot of time learning about lumber grades. “We won’t let anything product go out that will not meet the grade.”

But HPFP do not have grade stamps — they have a good relationship with the builders who have seen and worked with our product.

“It is tricky to have that skill here when we have such a small crew and that most of our sales are in non-structural products. Timbers are ¼ our revenue and an engineer is already involved in that project. When we are contacted for a larger-scale project, sometimes the order will fall through because of the grading issue.”

Much of what HP sells does not require a grade stamp as it is not structural. The biggest seller for structural wood from HP is serving the Timber Frame market. In this case, the framer hires an engineer who basically signs off on the structural integrity of the wood and the design, which legally satisfies the powers that be as the engineer is a professional and as such covers the liability, which satisfies the building code. “Lots of folks just use the wood because they like it better and it feels better, and so far, I have not heard of any issues. If we were planning on competing in the commodity market, we would need to grade stamp everything, but since this market had never been possible to compete in at smaller scales it seems like a non-issue (for now) .”



PHOTO: HPFP EDGER

Mill Waste

One of the greatest challenges in the lumber milling industry is waste management. At Harrop-Procter Forest Products all waste is repurposed locally. Shavings are easy to give to locals to be used in gardens, mulch, compost recipes, horse arenas and barns. A local is paid to haul the sawdust to private land or the local dump site to be used as filler. They don't debark so chipping for pulp is not an option.

For the longest time, the slabs were bundled and sold locally for firewood. However, it came to a point that the sales became problematic. People tried cutting the slabs into firewood in the mill yard, and the crew was helping to load trailers so they could move the traffic along.

The slab wood now goes across the road to a neighbour for his firewood business. He invested \$45,000 in a processing machine from France that runs on a power take off PTO on his tractor. The challenge is now getting the slab across the road in an efficient way. HPFP wants to support the local business, that is busy with lots of demand.

HPFP is researching a biochar initiative. Biochar sequesters carbon, can aerate clay soil, is a repository for nutrients and stays stable in the soil for hundreds of years.

Micro power generation is a great option but, because of the small scale of HPFP, is very expensive. Though waste is a big problem for them, the large investment is not warranted. They are constantly looking at options.

The Harrop-Procter community forest and mill creates a closed loop from forest to consumer. People in the community can make their lumber purchases without having to travel the ferry and drive the 30 kilometres to Nelson, the location of the closest retail lumber store.

FOR MORE INFORMATION on Harrop-Procter Community Forest and Harrop Procter Forest Products please visit hpcommunityforest.org.

Lower North Thompson Community Forest Micro Mill Case Study

Background

In 2003, lightning ignited wildfires destroyed the Tolko mill in Louis Creek, creating huge job loss in the area. With government legislation allowing forest licencees to remove timber from the area without the benefit of jobs to the communities, volunteers came together to pursue a Community Forest Licence for the Lower North Thompson Valley, which includes McLure, Chu Chua (the main village of the Simpcw First Nation), Little Fort, Louis Creek and Barriere.

The operations of the community forest are managed by the Lower North Thompson Community Forest Society (LNTCFS). Residents from the Lower North Thompson Valley (~Little Fort to McLure) can purchase a membership and nominate representatives to sit on the Board of Directors. Board positions are voluntary only. The Board of Directors hire and oversee professional management staff that are responsible for day-to-day management operations

LNTCFS Mission Statement

The mission and objectives of the LNTCFS form the foundation of the organization and help to set their priorities and guide their activities:

To establish local control of dedicated forest resources for the long-term sustainability of the five participating communities. To secure for these communities an opportunity to be more self-determined. To engender economic stability in these communities. To practice and model exemplary stewardship of the local forest environment.

Objectives

- Create a long-term sustainable plan for local forest resources that benefits the people of the Lower North Thompson Valley (Little Fort to McLure).
- Preserve ownership of local natural resources, promoting self-determination for our communities.
- Create sustainable employment, new business opportunities and investment.
- Provide long-term opportunities for achieving a range of community objectives, including skills training, forest related education, and social environmental, and economic benefits.

Climate Change and the Community Forest

The community forest is located in the Interior Cedar Hemlock (ICH) and the Interior Douglas-fir (IDF) zones. The main tree species in the IDF is Douglas-fir with various grass species in the understory. At higher elevations it transfers into the Engleman Spruce-Subalpine Fir (ESSF) and in wetter areas it transfers into the ICH. The main trees species in the ICH are western redcedar (*Thuja plicata*) and western hemlock (*Tsuga heterophylla*).

The climate projection for 2050 in the LNTCFS operating area, based on ClimateBC modeling, shows an increase in the area classified as IDF with the ICH moving up in elevation and decreasing in area. This is due to an overall increase in temperature and decrease in precipitation.

Legal Structure

The community forest licence is held by the LNTCFS, and the mill is operated under the umbrella of the LNTCFS. Divisions are split within the community forest organization for accounting purposes.

The Mill Site

The land started off as private land, but to increase access at various points of the year the community forest purchased additional land to ensure machinery could move in and out when needed.

Grants were provided through the Southern Interior Development Initiative Trust to support start up. Initial start-up costs were not significant; however, when the land was purchased there were more costs associated with development of the utilities infrastructure.

Currently the LNTCFS has \$2.5 to \$3 million in assets.

LOWER NORTH THOMPSON COMMUNITY FOREST SOCIETY – MILL BUILDING





BUILDING OUTHOUSES AT LNTCF

Log Utilization

LNTCFS couldn't sell oversized fir logs to the independent sawmills in the area, and rather than leave these logs in the bush it made more sense to start up a small mill. The community forest wanted to make use of the wood that the major sawmills were not accepting and generate its own revenue.

On the question of how does pulling out a portion of your bush run to take to your mill effect your sales with the majors, Harley Wright said, "Initially, we had a lot of pressure to not to take material out of runs that were sold to the majors. We keep our products when needed. We don't believe that majors have the right to control our tenure or any other organization."

"Our community forest has bought logs from local operators and farmers and other community forests that we have processed in our mill to fill our orders. We will source timber if we don't have access to it."

LNTCFS have purchased some wood, mostly for firewood. Less than 10 per cent of CFA volume including firewood is utilized as pulp logs.

Product Line

The mill was established with the purpose of utilizing the oversized fir. Using that fir, the mill produces custom cut timbers and lumber. They make a line popular in the mining and bridging industry of cants and 2x10 mats for a drilling company. Their product plans are to adapt to supply and demand. The supply and demand vary significantly, and when not in use the mill can be shut down.

The BC Job Creation Partnership (JCP), a program which provides community benefit while creating jobs to assist unemployed EI eligible clients with opportunities to gain meaningful work experience, was accessed to hire staff to prepare the lumber and build recreation site tables, benches, and outhouses by projects participants.

LNTCFS also generated and sold 480m³ of firewood through their harvesting during same period, made \$10,957 in lumber sales through milling operations, and donated 450m³-worth of products to local sites/trails.

The Firewood Business

A firewood processor was purchased from Perth, Ontario and funded by a Rural Dividend grant, a provincial program established to support interior forest workers impacted by mill shut downs. The LNTCFS then installed a cement pad to store the firewood and is in the process of building a larger shelter for the stock. They have purchased a Cord King Mega splitter for 4' diameter logs, which has also been funded by Rural Development.

LNTCFS is charging \$250 a cord, including taxes, with delivery around Barrier. Fir and birch prices have been changing, and the mill had to purchase some to keep up with demand. Firewood production has improved utilization of birch and will help maintain utilization of other species as well when pulp prices are low. The largest cost is associated with getting the logs into the yard. This activity requires paying for logging and trucking, and sometimes additionally buying for \$50/m³. It becomes more of a community service than a profitable business, but with high demand and increasing local sales, there is room to expand the firewood business.

Customers can order firewood on the LNTCFS website. LNTCFS accept payment by cheque or cash upon delivery, as well as E-transfers. They provide clear instructions to potential customers that they require sufficient space to back in and raise the truck box to unload the firewood, and that customers need to ensure that driveways are clear, pathways are clear and that there are no snow piles to slow delivery.

Equipment

The mill was purchased and set up through a series of grants. LNTCFS started out with a Wood-Mizer LT-40 and over time it worked very well. They have recently upgraded to a Wood-Mizer LT-50.

In early 2017, LNTCFS purchased a 12.5 acre parcel of land in the Barriere Industrial Park with the community forest's own money. \$530,888 was invested into land and equipment purchases. They purchased a used wheel loader to handle logs and lumber produced through milling. In the first year ~450m³ of log volume was delivered to the new mill yard. The majority of the volume consisted of low-quality logs harvested on the community forest that would otherwise have been burned.

In 2018, the LNTCFS invested \$799,844 in land development, equipment and infrastructure as means to drive economic development and diversify the revenue stream of the community forest. They installed water and three-phase power at the mill site, constructed a 35' x 120' mill building, a 30' modular kiln, and purchased a skid steer loader and firewood processor.

Kilns add value to the lumber cut at the mill. The issue is to put the right product into the kiln and have appropriate market to go along with it. Right now, it is underutilized because LNTCFS doesn't have the demand for the product. The kiln is run on a boiler system and it needs dry chips. The local supply of dry chips disappeared when Canfor in Vavenby shut down.



LOWER NORTH THOMPSON COMMUNITY FOREST SOCIETY – JCP CREW

The Crew

Harley Wright, LNTCFS board chair, has 42 years in the sawmill business and he was a champion and big support in getting the sawmill project off the ground.

Harley states, “There is never one single person to answer all of the points of the question. Capacity management is very important and if you can manage for what you do have, you can be successful. Work with the people you have to do the best job you can.”

In 2017, LNTCFS launched a Milling and Carpentry program through the federal Job Creation Partnership (JCP) program. The program supports funding to organizations and provides community benefit while creating jobs to assist unemployed Employment Insurance (EI) eligible clients with opportunities to gain meaningful work experience.

The LNTCFS is currently in transition and getting stable lumber orders through word of mouth is a challenge. To date the LNTCFS mill & firewood businesses have been supported through external program funding, the JCP in particular. These job placements are for only 1 year, so there is a great deal of turnover in human resources. It is difficult to have a stable workforce. Today, many people in the area are employed in pipeline construction, while others are relying on the Canadian Emergency Response Benefit. Without JCP, the LNTCFS must rely on lumber orders and firewood production. They are optimistic that the business can adapt to become a vital part of the community.

They also see the importance of mentoring experiences and the need to encourage the younger generation. The job creation program has supported this and training for employees and has allowed for hands-on work and mentorship.

Marketing

Much of the production at the mill, such as the picnic tables, the shelters and the outhouses has come through the JCP program. The JCP program has helped to establish and grow the mill. While the program is operating, the supervisor has been able to take on the tasks associated with marketing the community forest and mill. To date, marketing has largely been accomplished by word of mouth and through the JCP program.

“With a commercial contract in the firewood business, we could be more sustainable through the winter. We are likely in the top end of local sales. We want to consider markets in Alberta and Whistler as well, because can get more money for it, with a higher demand.” Mike Francis

Waste

As with all mills, dealing with waste is a significant challenge. At LNTCFS, the sawdust is given away to the First Nation greenhouse at Simpcw. LNTCFS works with a neighboring mill to bring in a grinder once a year to manage the slab waste. The cost is neutral, but it helps to manage the waste.

There is a big demand for the planer shavings, and they are mostly given to locals with horses and other livestock. LNTCFS is currently considering a plan to sell them if they can access a shipping container to store them and keep them dry and clean. Bulk loose loads could then be delivered locally.

FIREWOOD PROCESSOR PURCHASED FROM PERTH, ONTARIO FUNDED AT LNTCF





LNTCF SAWMILL CUT TIMBERS FOR BRIDGE REPAIR

Service

LNTCF asserts the importance of service and the need to spend time with the customer when they come in. Frequently, people don't know what they need when they come to the mill. The time needed to give service to a customer from setting up orders, to loading the product on the customer's vehicle cannot be underestimated.

Grading

Graded lumber is legally required for use in structures. "There are two ways to deal with this. You bring in someone to grade on a need basis or ideally get someone to take the lumber grading course to have available at all times. People have not asked for certified for grades. The onus is on the person buying the wood," says Wright.

Average gross margin of products

According to Wright, "It is hard to track gross margin when you bring in waste wood and make something with it. With a standard sawmill, it is significantly different than what our community forest is doing. We are utilizing logs that the industry won't buy."

Revenue from Financial Statements

Firewood and delivery

- 2020 – \$117,972
- 2019 – \$69,399

Lumber, product and milling

- 2020 – \$58,511
- 2019 – \$43,771
- 2018 – \$22,301
- 2017 – \$11,001

Future Opportunities

“Our mill is a way to increase employment, not just a focus on profitability. Staying in the black is important, but we care more for the economics of our community to generate some local employment.” — Harley Wright

“There is plenty of room to grow in marketing and capacity, and our initial planning included having room to expand on the land,” says Wright.

FOR MORE INFORMATION on the Lower North Thompson Community Forest Society, please visit lntcfs.org.

LNTCF LUMBER HEADING TO THE KILN



Value Creation Beyond the Commodity

By Hugh Scolah, B.A. Econ, M.Sc. Economics

It is obvious that a micro-mill cannot compete on price with an automated, modernized lumber mill producing millions of board-feet per year. There are returns-to-scale in lumber production. Unit production costs fall as output increases with automation, specialization and scale of machinery. A focus on minimizing costs using these tools characterizes the commodity business.

Small producers need to avoid this business and create value beyond offering the lowest cost product. How is this done?

The marketer Seth Godin identifies three different ways that can create value for customers beyond offering a commodity product:

1. Status
2. Group Affiliation
3. Convenience

Pure status values are found in the jewelry business where big rocks signify wealth to wedding attendees. This is also common in tech marketing and Elon Musk was explicit that electric vehicles manufactured by Tesla were to serve as a status signal for their customers. Marketers are rarely so brazen, but it worked!

Group affiliation value comes from people wanting to feel a part of a tribe or collective. This was exploited repeatedly by Apple in marketing its computers and devices and it is also the core of the marketing behind many fitness and diet crazes. The marketers create a system of values related to food and fitness that people identify with and make it part of how they relate to others. People are willing to pay a lot of money for this. This is also the category of value that cultural, community and spiritual values fall into.

Convenience as a value needs less explanation. This is why people choose to shop at the local hardware store even when it is more expensive. This is the category of value that is home to the increasingly scarce “Service.”

In the small-mill lumber business, valuation creation beyond the commodity is most likely from in-group affiliation — “I’m the type of person who supports my local mill” — and convenience — “I receive service from the local mill I can’t get anywhere else. They’ll cut anything I want!” But status shouldn’t be ignored. As wealthy retirees leave the city, they are building homes in smaller towns and rural areas that frequently include large, custom timber features that serve as a signal wealth and taste to their friends.

In implementing a successful value-creation strategy there are three important factors that need on-going attention:

1. Consistent Quality
2. Competing on value, not price
3. Contributing to the ecosystem of value

Consistent Quality

Consistent, high quality is critical for any of these value creation strategies to work. There have been many attempts to create value with labeling programs where social values, like endangered species protection, fair pay or diversity are highlighted in the product marketing. Many of these programs have a short lifespan. Marketing is expensive and it has to be supported by real differences in quality that customers can connect with. In Craft Beer consumers can taste differences in the qualities of a beer. They may not care for it but there are measurable differences in the chemistry of different beers that determine the flavor profile. In social marketing campaigns it is more difficult to get the consumer to tangibly understand what the differences are in the product and to maintain the standard of quality over time. If the customer can't touch, taste, smell or hear the difference it's easy to let those standards slip in order to achieve greater profitability.

In a wood products business, it is best to focus on tangible differences in the end-product and service that can be perceived by the customer and maintain superior quality over the long haul. Any attempts to create status, affiliation or convenience value will be fruitless in the long-run if quality can't be maintained.

Competing on Value, Not Price

Many small businesses fail because they forget the nature of the business they are in and sacrifice quality to achieve scale and move more units or cut costs in areas that are critical to maintaining quality while maintaining the same output. Some businesses make this mistake because they hire a manager who doesn't understand value creation and comes from a cost-oriented business background and some fail because they continuously flip-flop, focusing on quality, but then cutting costs when business slows to squeeze more profit out of the business.

This is not to say that minimizing waste and finding the most efficient arrangement of machines and people to optimize the production process isn't important, but it is not enough to succeed as a small mill. Never forget that you are competing on value and not on price.

Contributing to an Ecosystem of Value

Creating value is difficult and costly to do alone. It becomes easier when the whole community is involved in an ecosystem of value. This can take two forms. First, sharing knowledge and connections with suppliers, downstream businesses and even other producers who might be considered competitors. Other small mills can be viewed as partners, not competitors. Everyone wins when it becomes part of the culture to go down to the local mill for their

next building project. This isn't just about one operation, it's about changing people's mindset about their use of time, money and energy in contributing to their happiness.

Which is the second part of creating the ecosystem of value. Producers need to work together to produce day-to-day interactions and media that change people's minds about the type and source of their wood products. A classic example of this kind of marketing is the dairy industries "Got Milk?" campaign.

It should be noted that if we move away from the language of business and marketing, what has been discussed here looks a lot like creating culture and looking after our neighbours. These strategies are frequently employed cynically by marketers, but service and an ethic of superior quality can also grow naturally out of a commitment to looking after one's own community.

Hugh Scolah is currently undertaking PhD work at the UBC Faculty of Forestry in the research and development of economic evaluation tools for wildfire fuel treatments. He has a diverse background that spans quantitative and financial modelling in energy, agricultural and forestry sectors, as well as project management experience, sales, marketing and lobbying in the clean-tech sector, and hands-on experience in a variety of agricultural settings.

SAWYER ON WOOD-MIZER LT 70 AT HPFP



Resources and Further Reading for First Nation Partnerships

Local governments that have been successful in forging effective partnerships with First Nation communities in BC are featured in a series of case studies from the project *Pathways to Collaboration*. The project is a collaboration between the Union of BC Municipalities (UBCM), the Province of British Columbia, and the First Nations Summit with funding from the Indigenous Business & Investment Council (IBIC). The stories highlight the elements that contributed to their success including the necessary protocol and communications agreements.

Download the *Pathways to Collaboration* case studies at: ubcm.ca/EN/main/resolutions/policy-areas/first-nations-relations/pathways-to-collaboration.html

Other resources

- The BC First Nations Forestry Workforce Strategy: forestrycouncil.ca/cpages/jobs-training
- BC Government Indigenous Economic Development Success Stories: gov.bc.ca/gov/content/employment-business/economic-development/bc-ideas-exchange/success-stories/indigenous-economic-development
- Government of Canada, Indigenous Services Canada — community economic development programs and services that support Indigenous businesses: canada.ca/en/indigenous-services-canada.html
- First Nations Joint Venture Partnership Tool Kit — published in 2012, this resource is dated, yet it still has good information and sample agreements for potential use in business arrangements: terraceinfo.ca/images/uploads/documents/TEDA_FN_JVP_Pkg_Update_Feb_23_2012.pdf
- The Indigenous Business and Investment Council is focused on increasing Indigenous participation in the economy, promoting Indigenous businesses and entrepreneurs, and industry partnerships: bcibic.ca/work-with-first-nations/

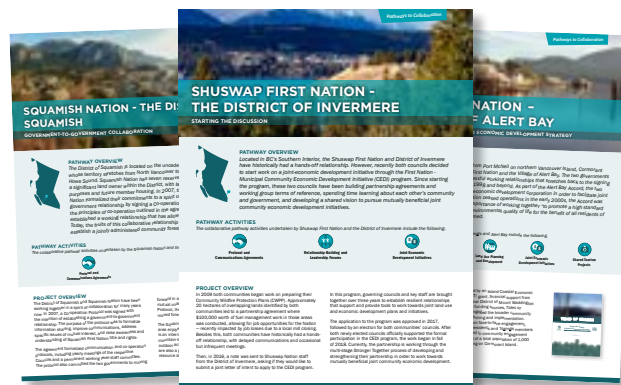




PHOTO: HARROP PROCTER FOREST PRODUCTS MILL IN ACTION

The BC Community Forest Association is a network of rural community-based organizations engaged in community forest management, and those seeking to establish new community forests. We represent over 90 rural and Indigenous communities across our province. We share a vision of a network of diverse community forest initiatives, where local people practice ecologically responsible forest management in perpetuity, fostering and supporting healthy and vibrant rural communities and economies.



British Columbia
**Community
Forest**
Association
local people, local forests, local decisions