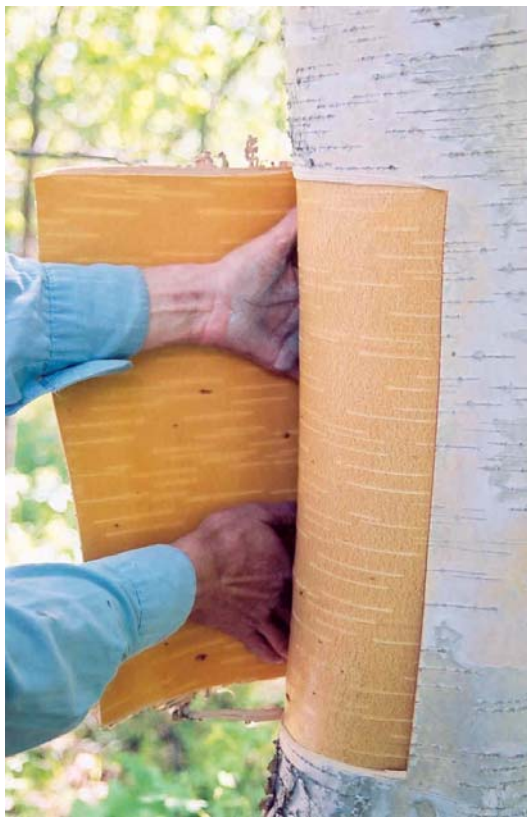




*Market and Product Development for Birch
Timber and Non-Timber Products: Current
Status and Potential in British Columbia*



The Centre for Non-Timber Resources,
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Victoria, BC

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Market and Product Development for Birch Timber and Non-Timber Products: Current Status and Potential in British Columbia

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Market and Product Development for Birch Timber and Non-Timber Products: Current Status and Potential in British Columbia



Harvested birch bark.
(photo courtesy of Cloquet Forestry Center)

1. Introduction and Purpose

Paper birch is an abundant and widespread species throughout British Columbia's forests. In 1996, Massie estimated 210,000 hectares of birch-leading stands in the B.C. interior; this estimate does not include stands that are not birch leading, but which have substantial components of birch (Massie, 1993). An estimate based on the volume of birch per hectare indicated that British Columbia has almost 996,000 hectares of forested land where birch volume is greater than or equal to 65 cubic meters per hectare.¹

Due to the impact of the pine beetle epidemic, management responses to the epidemic, and possible associated factors such as wildfire in beetle-killed areas, will lead to conditions that are likely to increase the relative extent and volume of paper birch. This increase in availability will be accompanied by the increased requirements of communities and businesses for alternative economic opportunities. Both timber and non-timber uses of paper birch offer such alternatives.

Although this report focuses on the current economic potential of birch, we recognize that many Aboriginal groups have a long history of using the birch tree for cultural, subsistence and trade purposes. Various products, including the sap as a drink, the bark for arts such as basketry and oils from the bark for medicinal teas and salves, have been, and continue to be, very important to many Aboriginal communities. The trade, or commercialization, of these products is also important – Gitksan Chief Negotiator Don Ryan spoke of the "\$1000 birch tree", demonstrating that once all the traditional use value-added products were obtained from one tree, it certainly could not be viewed as a

¹ Calculated using data from Canada's National Forest Inventory 2001 (CanFI2001). The information in CanFI2001 is derived from the stand-level provincial forest inventory data, summarized to the provincial forest inventory map sheets.

“weed” (Turner & Cocksedge, 2001). We hope that this report of the exploration of the potential of birch is beneficial for both Aboriginal and non-Aboriginal community members who rely on this species.

This report documents the current available information regarding the utilization of birch for commercial purposes in British Columbia. We attempted to quantify values and volumes where we could find data on birch specifically, however most data is compiled using the broader category of hardwood. Where we could not find birch specific information, we have used data and information for hardwood to forecast the potential commercial uses of birch as a hardwood species. A fact finding trip to the Cariboo-Chilcotin region provided valuable information regarding the progress this region has made in looking at alternative uses of the forest in light of the pine beetle damage in that area. We used telephone interviews to obtain comparative information from other regions of BC where birch is found as a significant species.

Most of the personal interviews were conducted in Prince George, Williams Lake, and Quesnel, BC. Other areas that were contacted by telephone included Fort St. John, Fort Nelson, Kamloops and Vernon. These areas have high birch concentrations and were useful for comparative purposes to the situation in the Cariboo-Chilcotin region.

The deliverables for this project are to document as best as possible:

1. Who is using birch for commercial purposes.
2. What products are being produced.
3. Where are the current markets for these products.
4. What potential exists for increased commercial utilization of birch for timber and non-timber products.

While this report focuses on ‘products’ in the conventional sense, it should be recognized that the economic value of the birch resource is not limited to products currently exchanged in markets. While beyond the scope of this report, valuation of the birch resource should include its potential contribution to forest health, biodiversity, and mitigation of wild-fire risk, especially in light of its possible role in forest restoration post-mountain pine beetle.

2. The Birch Resource in British Columbia

According to the Birch Handbook published by the Provincial Government in 1996, there are eighteen timber supply areas (TSA) where birch is a potential leading species. Prince George, Williams Lake and Quesnel are three of the eighteen TSAs where birch is a potential leading species (Peterson et al, 1997). According to the Handbook, “The six TSAs with the greatest volume of birch in the province, in descending order, are: Fort Nelson (7 869 000 m³); Okanagan (2 337 000 m³); Fort St. John (2 160 000 m³); Kamloops (1 681 000 m³); Prince George (1 109 000 m³); and Kispiox (798 000 m³) (Peterson et al, 1997).”

2.1 Current Situation: Prince George, Williams Lake and Quesnel Area (Cariboo-Chilcotin)

The Cariboo-Chilcotin focus area has been hit hard by the pine beetle epidemic. Annual allowable cut limits have been increased dramatically to try to salvage the pine timber damaged by the pine beetle. The current pine beetle situation has increased the interest of local economic development offices, municipal governments, First Nations bands and local business owners in other species such as birch for potential economic benefit.

The photo in Figure 1, showing affected pine beetle trees, was taken in the Williams Lake area by Lorraine Maclauchlan, Ministry of Forests, Southern Interior Forest Region.



Figure 1. Mountain pine beetle affect by Williams Lake, B.C. Photo by Lorraine Maclauchlan.

Species such as birch have taken on more importance given the future of the pine harvest in these regions. For comparison purposes we also contacted Economic Development offices in Fort Nelson, Fort St. John, Kamloops and Vernon. These areas are also included in the eighteen TSAs that have birch as a lead species.

3. Timber and Non-Timber Uses of Paper Birch

Paper birch is currently used in British Columbia for a variety of timber and non-timber products, including lumber, furniture, cabinet doors, finger joint blocks and veneer, birch bark products such as basketry, and birch syrup (Mawhinney, 2003; Wilder et al, 2001; Peterson et al, 1997; Buy BC Wild 2005). Zasada (2001) describes a much wider variety of products that are, or can be, produced from birch – some after harvest and some without harvesting the tree (Zasada, 2002). These include:

- Wood for musical instruments
- Chemicals (betulin, xylitol, papyriferic acid)
- Rustic furniture and decorative items such as picture frames made from branches and twigs
- Roots for basketry
- Specialty wood products produced from e.g. spalted wood

- Fruiting bodies of associated fungus (timber fungus [chaga], birch bolete)
- Sap (used as a drink and for syrup)
- Birch bark – basketry, canoes

Zasada's schema illustrates how multiple products can be derived from paper birch forests (Figure 2).

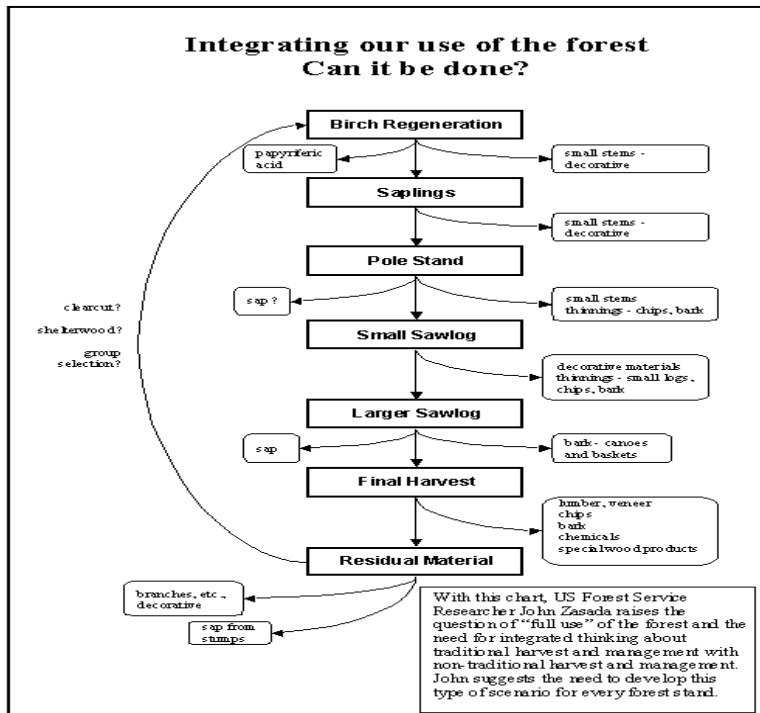


Figure 2. Managing for birch products (Zasada 2002).

The report outlines the possible uses of birch, where these items are being produced and sold, and what potential growth opportunities exist for the products. As there are distinct categories of products, the report is separated into three major groupings. These groupings are timber; arts and crafts; and food, functional food and health products.

3.1 Timber Uses

There are a number of small manufacturers and mill owners who use birch in their operations. The products that are typically produced are:

- Furniture
- Cabinetry
- Flooring
- Lumber
- Veneer
- Fiber for oriented strand board (OSB)
- Firewood
- Window and door framing

- Panel board

3.1.1 Extent of Commercial Birch Utilization for Timber Uses

Focusing on the pine beetle epidemic affected regions of Prince George, Williams Lake and Quesnel areas, we contacted a number of individuals, Ministry of Forestry staff, government and economic development agencies, as well as entrepreneurs involved in innovative uses of birch. Based on our findings in this region, we verified whether similar activities were being pursued in other birch dominant regions such as Fort Nelson, Fort St. John and Kamloops. We found that the region around Quesnel was more active in terms of focusing specific efforts on utilizing birch as a separate species. The uses in other regions of the province reflected similar product lines with the exception of the commercial production of birch syrup.

The Quesnel area is home to approximately 100 firms directly connected to the wood products industry. These firms range from large forestry companies such as Canfor and Tolko to small mills, value-added processors and manufacturers. According to Quesnel's community information website, there are "hundreds of additional wood products-related firms operating within a 200 km radius" (Quesnel Community and Economic Development Corporation, 2006).

Although there are firms utilizing birch in their product lines, information regarding specific volumes and values was not available. We found that the Wood Enterprise Centre operated by Community Futures Development Corporation (CFDC) of the North Cariboo was the only organization that sorted their clients' product lines by wood species. Their database of clients showed 55 business owners who use birch in their end product. Due to the nature of the organization, the majority of their clients were involved with timber uses. A former CFDC program, The Northern Hardwood Initiative, identified Birch as a quality hardwood that can be utilized in high-end value added products such as furniture and flooring.

A similar situation was found in the Kamloops region. Venture Kamloops, the Economic Development organization for that region, reports 125 companies involved with primary and secondary wood products. Birch is one of the hardwood species that is used by local manufacturers for value-added products such as furniture, flooring and door and window frames. They did not have their database sorted by species but were aware of businesses utilizing hardwoods (including birch) for value-added products. An example of a business that works exclusively with birch is a small mill owner in Chase, BC. Their product consists primarily of lumber and firewood sourced from private landowners, developers and some licensees. They kiln dry their lumber on site and sell the dried lumber to a broker in Langley, BC. The broker in turn, sells to manufacturers of high-end furniture, flooring and cabinetry.

Limited information was found from the Fort Nelson and Fort St. John regions. The bulk of the birch was used as firewood, OSB, and as part of the "matting" used for seasonal road cover over thawing muskeg. The Economic Development Officers we contacted

were not aware of any business that used significant amounts of birch for value-added products.

In addition to the value-added wood products listed above, all regions of the province we contacted where birch is found, reported that there is a large volume of birch logs sold to large OSB producers such as Ainsworth and Canfor. A number of interviewees using birch for value-added products felt that this use of quality birch logs was a waste of a high value wood source. It was suggested that other hardwoods such as aspen might be more economically utilized by companies for OSB. Current prices for raw logs for OSB were reported by some interviewees as being in the range of \$34 per metric tonne.

3.1.2 Current Markets for Timber Uses

Canada has typically focused its wood marketing efforts on domestic and US target markets. However, due to increased competition both at home and in the US by increased imports from other countries, Canadian wood producers have had to expand their foreign market penetration in order to maintain revenue levels. According to a market gap analysis completed by Forintek in 2000, by further adding value to Canadian wood products, value-added export values to the US, for wooden prefabricated buildings, doors and windows, kitchen and bathroom cabinets and household furniture, have doubled over the five years from 1995 to 1999 (Gaston & Fell, 2000).

In addition, Canadian trade statistics from 1996 to 2005 show a solid demand in the US for hardwood lumber, veneer, plywood, and furniture. Japan, China and South Korea show marked increases in their imports of Canadian wood products during this same time period (Industry Canada, 2006). According to Canada Wood, a cost shared wood export program with Natural Resources Canada, provincial governments and wood industry associations, several successful market development campaigns have been implemented. The target markets have been South Korea, Taiwan, Japan, Europe and China. Success in the European and Chinese markets have been excellent with 2004 exports to Europe increasing by 8.1% to \$521 million and the Chinese exports rising fivefold to a total of \$104 million dollars in the same year (Natural Resources Canada, 2006).

3.1.3 Potential for Increased Commercialization

With improved market development campaigns such as Canada Wood, BC wood producers have been able to break into Asian and European housing and value-added wood markets. With countries such as China and Japan experiencing housing booms along with a new acceptance of wood as a viable and economical building material, BC wood producers stand to benefit. Hardwoods such as birch can be successfully promoted as a high value wood for products like flooring, furniture, cabinetry, and veneers.

In addition to Asian and European markets, a recent (2005) market brief prepared by the Canadian Trade Commissioner Service, indicates Canadian furniture manufacturers

have opportunities with specialty and niche product lines, particularly in the office, youth and home entertainment furniture lines (International Trade Canada, 2006).

3.1.4 Challenges and Constraints

1. According to the 2005 report “Wood Supply in Canada” prepared by the Canadian Council of Forest Ministers, there are challenges faced in estimating available wood supply.² These challenges, and the environment of changing forest practices, restricts innovative product development by smaller entrepreneurs looking to access and utilize birch located on crown lands. The ability to obtain smaller timber sales licenses or to access birch from large license holders has become very difficult. The size of the timber sales licenses have increased over the past few years, making it financially prohibitive for the smaller operators. Table 1, taken from the 2005 report, shows the estimated annual supply of hardwood available on crown land until 2150. Birch is not separated as a specific hardwood species in this report.

Table 1. Wood supply projections for British Columbia (Canadian Council of Forest Ministers 2005).

Provincial Crown Lands						
	Units	2000a	2010b	2050b	2100b	2150b
<i>Hardwood</i>						
Annual supply	000 m3	3132	2 986	2798	2 773	2 801
Growing stock	000 m3	184 168	173133	149 303	142 917	142 085

a The distribution of softwood/hardwood supply and growing stock was estimated using the softwood/hardwood ratio present in 2003 AAC statistics.

b Forecasts do not fully reflect the impact of the recent mountain pine beetle outbreak in British Columbia.³

2. Access to the raw materials is impacting the ability of smaller producers of value-added birch wood products. Small timber sales have dropped significantly over the past few years, thereby limiting the ability for a small entrepreneur to secure inputs necessary for production. There is also confusion among some entrepreneurs and license holders as to what species are included under current timber licenses.

3. As increasing numbers of smaller mills close, there is less access to raw material supplies for value-added manufacturers.

4. Access to markets is limited by distance, market development knowledge and business assistance.

5. Transportation costs are high in some areas of the province such as the Northern regions and the Central Interior.

6. Birch is not a managed species by the Ministry of Forests and has been classified as a weed species.

² National Forestry Database Program, *Canadian Wood Supply 2005* (Ottawa, Ontario: Canadian Council of Forest Ministers,[2005]) (accessed March 3, 2006).

³ *ibid.*

3.2 Arts and Handicrafts



Birch bark baskets.



(photos by Don Breneman)

3.2.1 Extent of Commercial Birch Utilization for Arts and Crafts

There are a number of art and craft items produced from parts of the birch tree. These include:

- Basketry, weaving and paper made from bark
- Bowls, platters and serving utensils made from birch wood.
- Bark biting art
- Twig furniture
- Canoes and paddle
- Musical instruments
- Shoe insoles
- Sleds and snowshoes

Artisans and crafters are located throughout BC and sell their products predominantly through local retail shops, farmers' markets and seasonal gift fairs. Accurate data specifically identifying birch craft and art items is not available as many of the artisans produce small quantities and the sector is not highly organized. In the first issue of the Royal Roads Directory for Buyers and Sellers of Non-Timber Resources (2005), there were approximately 10% of the 108 participants who were creating art and handicrafts from forest products. Many of these art forms come from First Nation origins as well as innovative entrepreneurs.

3.2.2 Current Markets for Arts and Crafts

As mentioned above, most B.C. art and crafts that utilize birch are sold locally through retail shops, farmers' markets and seasonal gift fairs.

3.2.3 Potential for Increased Commercialization

According to Canadian trade statistics, most artisans sell locally through regional gift fairs and retail outlets. Market reports produced by Industry Canada and Team Canada Inc. indicate potential for many gift and art items in various international markets such as Europe and Asia. There are a number of significant annual buyer trade shows across Canada where retailers look for new and innovative product lines. These trade shows bring buyers from all over the world and offer artisans and craft producers opportunities to access larger market areas. In these situations, volume

would be a constraining factor for many of the producers who create a small number of items each year. Small producers of these products can gain access to larger domestic and international markets by leveraging their collaborative efforts in marketing and distribution activities. In addition to trade shows, there is potential for BC artisans to market their products through the Internet. By using technology, artisans producing products made from birch have an opportunity to increase sales in a number of foreign and domestic niche markets (International Trade Canada, 2005).

According to an article published in 2004 by the Forest Products Journal, between 1999 and 2001, the same sector in Alaska experienced a 42% increase in the use of birch for craft and gift production. Although this segment of the forest industry is small, there is potential for the creation of high-value products from birch waste materials, lower grade lumber and small-diameter timber (Braden & Nicholls, 2004).

3.2.4 Challenges and Constraints

Challenges and constraints in increasing the commercial use of birch for arts and handicrafts are:

- Maintaining consistent quality of product.
- Consistent access to raw inputs either through small timber sales or access to crown land.
- Competition from the influx of alternative and/or lower priced gift items from other countries especially Russia and Scandinavia (Zasada, pers comm...)
- Volumes that are needed to successfully enter foreign markets.
- Lack of market development knowledge and assistance for producers.

3.3 Food, Functional Foods and Health Products



This segment includes products that are considered:

1. Food such as syrup,
2. Functional food (foods or dietary components that may provide a health benefit beyond basic nutrition) such as sap that is consumed to maintain health,

3. And health products (food, or parts of food, that provide medical or health benefits, including the prevention and treatment of disease) such as tea made from the *Inonotus obliquus* fungus believed to have anti-cancer properties (Dave Buck, Northern Forest Diversification Centre, pers. Comm..).

3.3.1 Extent of Commercial Birch Utilization for Food, Functional Food and Health Products

A number of food, functional food and nutraceutical products are made from various parts of the birch tree. These include:

- Birch sap drinks
- Birch syrup and value-added products such as toffee, marinades, ice cream toppings, and sauces
- Mushrooms and fungus
- Oils from bark for cosmetics, salves, and medicinal preparations
- Chemicals such as Xylitol used as sweetener
- Traditional Native uses such as medicinal teas and tonics

In the focus area of Prince George, Williams Lake and Quesnel, two farm businesses are tapping their birch trees for sap. The sap is being used for syrup, wine and as a health drink in its raw form. One additional farm will be testing their trees this year for potential tapping. The ability to tap birch for sap provides an additional source of a commercially viable product for private landowners and woodlot licensees. Based on our interviews with the sap and syrup producers, the value of producing syrup has economic potential in niche markets (Figure 3).

A stand of 1000 birch trees suitable for tapping (from 6" to 18" diam)
 100 gallons of sap = 1 gallon of syrup and the average sap production per tree over a 21 days syrup production season is:

- 1000 trees x 5 gals/tree/day x 21 days = 105,000 gallons of sap
- 105,000 / 100 = 1,050 gallons of syrup
- 1050 gallons of syrup = 1050 x 4500ml = 4,725,000 ml of syrup
- 4,725,000 / 125 ml bottles = 37,800 bottles of finished product
- Therefore, each 125 ml bottle sells for \$5.00 net = resulting in \$189,000 for the 37,800 bottles of finished product.

Figure 3. Estimated economic value per individual birch tree.

The yearly net economic potential of each tree per year is estimated to be \$189. For a farm or landowner, the ability exists to gain economic benefit from a relatively small number of trees.

Currently the syrup producers in the Quesnel and Williams Lake areas are selling their product through Farmers' markets and local gift shows such as Christmas Fairs. The production of syrup is limited at this point with production by the largest producer in Quesnel topping out at 150 gallons of finished product last year. They were able to sell

all their available stock with little difficulty. This particular product is labour intensive and the volume currently is restricted by the physical ability to process the sap.

Other uses of birch, such as salves, ointments, and tonics, are being produced by a small number of cottage entrepreneurs throughout BC. The “*BuyBCWild*” *guide to non-timber forest products in B.C.* (Centre for Non-Timber Resources, 2005) listed at least four vendors who utilized various forest plants including birch to produce their product lines. First Nations produce a number of food and health products from birch such as tonics and teas. Many of these products are made by traditional methods and only made for personal use.

3.3.2 Current Markets for Food, Functional Food and Health Products

All the producers we spoke with sold their products locally. Even within local markets, there were very small quantities of functional foods and health products being produced and sold in BC. We did not find any provincial data for this segment in BC statistics.

3.3.3 Potential for Increased Commercialization

The production of birch sap, syrup and value-added sap and syrup products is in its infancy stages at the present time. Through the identification of niche markets and distinctive brand development, birch sap producers could be successful in broader domestic and foreign markets. BC currently exports over \$2 million of Quebec maple syrup and other glucose and fructose syrups to markets in the US, Japan, Australia, South Korea and parts of Europe. In 2005, Canada exported over \$230 million worth of syrups to more than 40 countries. These markets hold potential for other syrups including birch syrup and sap.

Functional food and health products are a new and growing industry in Canada and throughout the world. Rapid growth in the industry has been fueled by the increased understanding by consumers of the link between diet and improved health and longevity. According to Agriculture and Agri-Food Canada, the Canadian industry is well positioned to become a world supplier of functional foods and health products. In 2001, the global industry value was estimated at \$56.6 billion and was expected to continue growth at a rapid pace. Target markets for functional foods and health products are strongest in the US, Europe, Japan and Canada (Agriculture and AgriFood Canada, 2006).

3.3.4 Challenges and Constraints

There are a number of challenges facing the development of the food, functional food and health products segment in BC. Some of these challenges are:

- Insufficient understanding of the food and health potential of birch in BC, although other jurisdictions (e.g. Russia, Japan, Scandinavia countries) may have considerably more information.

- Insufficient testing and research in Canada on potential commercial birch derived products.
- Access to trees is limited at present due to existing timber licensing practices including the reduced availability of small timber sales
- Limited technical expertise in Canada in producing products.
- Immature sector that needs assistance with developmental and regulatory requirements such as nutritional testing, labeling, health certificates, and more.

4. Summary

In summary, there is potential for increased commercialization of birch in BC. There are, however, a number of significant challenges and constraints that need to be addressed before the potential can be realized.

1. The most significant barrier for increased commercialization is the lack of clarity surrounding forest management practices dealing with birch. The majority of birch stands are found on Crown lands managed through the Ministry of Forests and Range. Species such as birch are not recognized as a valuable species and are therefore treated by the large timber sales licensees as a weed species and disposed of while harvesting softwood timber. At the same time, it appears to be difficult to obtain licenses or permits for small scale birch harvesting.
2. Most small businesses and entrepreneurs using birch in their product lines obtain the inputs through private lands, licensed woodlots, and community forests. The most common barrier to growth that was communicated by small operators was an inability to access birch on a consistent basis for their products.
3. Across all product categories, a lack of market and product development assistance was noted.
4. Distance to markets and transportation costs were cited as significant barriers for producers in the North and North Central regions.
5. Technical expertise and training is limited in the functional food and nutraceutical segment within Canada. Few people have the technical knowledge to exploit this potentially lucrative segment.

The birch has a significant number of valuable timber and non-timber uses, including both direct product uses and economically valuable contributions to forest health and biodiversity. To date, the value has not been widely recognized. Although timber uses as well as arts and crafts may have a more immediate and established value chain in the marketplace, the potential of the functional food and health products sectors should not be overlooked. These markets are expected to grow rapidly on a global basis as increasing numbers of consumers turn to natural products to enhance health and well-being.

5. Recommendations

As “next steps” in the process of developing the economic contribution of the birch resource, especially in those areas most severely affected by the MPB epidemic, it is recommended that a small group of experts and stakeholders be assembled to develop a strategic plan for the birch resource, in the context of broader planning for non-timber forest products and ‘the future forest’ in the region. It is recommended that this group include representation by the two beetle action coalitions and interested First Nations, key birch researchers, marketing expertise in both timber and non-timber areas, forest land owners and managers or their associations, key government representatives and current birch producers. This group could ‘launch’ at the anticipated NTFP conference and mini-expo planned for Quesnel in the summer of 2006. The Centre for Non-Timber Resources would be willing to recruit this group and to act as initial secretariat.

Based on our initial findings, CNTR believes that the following elements of a strategic plan should be discussed by the birch resource group:

1. A process by which to engage the provincial government and other landowners and managers in assessing the potential of birch, the need to create more accurate inventories of the birch resource, and the need for secured access to birch stands on crown lands.
2. Identification of specific markets for birch products and develop distinct business cases for product categories.
3. Identification of regions where particular birch products would be viable and consult with key regional interests, including First Nations, rural communities, forest licensees, and affiliated sectors such as agriculture and tourism to determine regional development priorities and concerns. This process should include . development of a comprehensive database of birch producers in those regions in conjunction with regional economic development organizations and producer associations.
4. Development of regional awareness campaigns for birch commercialization opportunities.
5. Development of training programs with appropriate partners to educate individuals and businesses interested in developing product lines.
6. Development of a birch commercialization initiative with one or more pilot projects based on specific products derived from birch, within the context of a systematic assessment and utilization of the birch resource as recommended by Zasada (2002).

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Appendix A - Contacts

Contacts and Interviews

The following individuals and organizations were contacted directly for information on birch utilization.

Alan Madrigga Economic Development Officer City of Williams Lake	Greg Halseth Professor, Geography Program University of Northern BC
Greg Lawrence General Manager Community Futures Development corporation of the North Cariboo	Tanya Turner Marketing coordinator The Wood enterprise Centre Quesnel, BC
Jim Savage Executive Director Quesnel Community and Economic Development Corporation	George Powell Environmental and Resource Management Consultant
Cathy Koot Research Co-ordinator Alex Fraser Research Farm William Lake, BC	Ken Day Manager Alex Fraser Research Forest Williams Lake, BC
Dan Adamson McGregor Model Forest Prince George	Bob Flinton Forester CCBAC
Richard Holmes Manager Quesnel River Research Centre Likely, BC	Ted Traer / Heloise Dixon-Warren Moose Meadows Farm Quesnel, BC
Kim McIvor / Pete Thumand Birch Place Farm Quesnel, BC	Cheri-Lynn Bailey Sweet Tree Ventures Big Lake, BC
Michael Eibl General Manger Venture Kamloops	Jerry Munson Owner Squilax Timber Supply Company Chase, BC
Dave Buck NTFP Project Manager	Michael Erdmann, Creative Director

Northern Forest Diversification Centre	Motherbrand
John Zasada Retired Research Forester North Central Research Station USDA Forest Service	Kathie Dickie Economic Development Officer Fort Nelson First Nation Fort Nelson, BC
Linda Wallace Economic Development Manager Town of Fort Nelson Fort Nelson, BC	Tammy Danshin Economic Development Officer North Peace Economic Development Commission Fort St. John, BC
Joseph Chan CMHC Regional Business Centre Vancouver, BC	Dr. Allen Brackley Team Leader Alaska Wood Utilization Research and Development Center Sitka, Alaska, USA
Chris Hawkins Associate Professor, Forestry University of Northern BC Prince George, BC	Brian Hawrysh Director Remanufactured & Engineered Wood Products BC Wood Langley, BC