

INTRODUCTION

Non-timber forest products (NTFPs)¹ are the foods, medicines, arts & crafts, landscape plants, natural chemicals, environmental goods, and specialty biofuels that can be derived from forest plants. Unlike the conventional mainstays of the forest industry – namely timber and pulp – NTFPs can come from any part of a tree or forest plant. Products offer excellent commercial opportunities for small business enterprises. Developed in a responsible, sustainable manner, NTFPs and their related services can create and enhance livelihoods. Together with a strong, well-managed timber products sector, they can help to propel Canada’s forestry industry to its fullest potential.

Canada’s immense forest holdings contain over 1,700 species of plants² that occur in woodlands and clearings and on recovering logged or burned forest sites. These trees, shrubs, groundcovers, mushrooms, wildflowers, and wetland plants are potential sources for thousands of commercial NTFPs.

Some NTFPs are commercially well-established and familiar to Canadians – for example, maple syrup, berries, and Christmas trees. But these are only a few of the possibilities. Entrepreneurs across Canada are developing and marketing distinctive botanical products from forest plants. And others desire to do so as well.

Interest in non-timber business prospects is high among woodlot owners, hobby farmers, forest communities, commercial artisans, and even urban entrepreneurs. In addition, others have an interest in seeing the sector developed – community economic developers, educators, financiers, researchers, and

Non-timber forest products

NTFPs are forest botanical goods other than conventional lumber and industrial pulp & paper.

They are obtained from plants of the forests and their environs, including clearings and wetlands. They also come from private woodlots, urban plantings, and cultivated sources.

NTFPs can come from the entire plant, its parts, or its extracts.

¹ Non-timber forest products are also called “special forest products”, “non-wood products”, or “non-traditional forest products”.

² “Plant” is used in the broadest sense here to include fungi and lichens. This estimate of species number is a conservative one, consisting of the author’s count of the more commonly reported plants, edible fungi, and some lichens, but not algae.

traditional forest companies committed to enhancing community partnerships. All can benefit from this publication.

Overall, the non-timber forest sector is still an **emerging** one in Canada. There is limited startup information available for many types of NTFP businesses, few surveys of the potential of Canadian plants, and patchy marketing support across the country. Much more needs to be understood regarding ecological best practices. Given the diverse nature of the NTFP arena, such an information gap is not surprising, but it will have to be addressed for the sector to advance and mature.

NTFPs may be products in their own right, or may be used as ingredients – such as flavours in foods and beverages, fragrances in perfumes, or fixatives and preservatives in products.

They may even be used as information tools – for example, plants as bioindicators of soil quality or metal deposit.

The NTFB Business Companion

The Canadian NTFP Business Companion aims to narrow the information gap by providing an overview of ideas, startup information, and other resources beneficial to NTFP enterprises. It is the first of its kind for Canada, both in its breadth and its practical relevance to the entrepreneur.

Over 60 business concepts are presented, each including plant species that may be used, manufacturing approaches, equipment needs, startup costs, hints for success, precautions, and sources for further information.

The Companion is organized into seven major product sections:

- Food & Beverage Products**
- Materials & Manufacturing Products**
- Health & Personal Care Products**
- Decorative & Aesthetic Products**
- Environmental Products**
- Biofuels**
- Landscape & Garden Products**

In addition to the product sections, there is a **Business Smarts** section that covers general steps for starting a non-timber forest product or service business; legal aspects; organic certification; and NTFP marketing – including **One Hundred Ways to Add Value**. Then the **Resources** section lists sources on cultivation, plant species, sustainability,

associations & cooperatives, education & training, and contract manufacturing. **Appendices** cover nursery & greenhouse establishment and plant toxicity.

Although the focus here is on Canada (notably legislation and suppliers), the technical and practical information is broadly applicable to most temperate and boreal regions outside Canada which share many common or similar plant species. This includes the northern US border states and Alaska, and areas outside North America.

Non-timber goods & services as a business

Non-timber businesses may be operated at various scales from one-person enterprises to small factories or mobile facilities. They include cottage industries, family-run businesses, community enterprises, and other business types. For example, Canada has about **425,000 privately owned woodlots**, most of them family run, whose owners often are curious about commercial products that could be derived sustainably from their lands.³



Moose Meadows Farm. (Photo by Ted Traer)

NTFPs traverse a broad, deep profile of the forest – not just of trees, but other woody and non-woody plants. NTFPs afford a diversity of value-added goods and related services, which may be offered to a broad customer base at prices reflective of their

value-added status. Value-added products created by small- and medium-sized businesses and by microenterprises are emphasized here. Such businesses are desirable in the non-timber sector because they can be flexible and responsive to changing opportunities. If well-managed, they can thrive within a framework of **ecological conservation**.

Non-timber services

Services related to NTFPs are an emerging area too. They include mobile processing services, materials extraction, quality testing, specialty cultivation, research, co-packing, ecotourism, education, and marketing.

The non-timber industry is a versatile one, having the potential to be a highly creative and sustainable foundation upon which to build

³ Private woodlots in Canada account for a total of 18 million hectares of forest land, with an average size of 45 hectares.

Canada's future forest economy. NTFP businesses can be well-integrated into the community, affording opportunities for networks of small businesses supplying materials and services to one another.

Sourcing plant material

NTFPs are produced from various parts of the plant – wood, foliage, stems, roots, flowers, fruits, and seeds. They may be botanical extracts or, in some cases, waste materials.

Plant materials for NTFPs are obtainable by many routes, such as through approved collections in natural or managed forests, and production in agroforestry systems, field plots, nurseries, greenhouses, or laboratories. Other potential sources (for small-scale collections) are urban forests, neighbourhood trees, backyard plantings, rooftop systems – even kitchen gardens.

Although plant materials are often collected directly from forests – a practice known as “**wildcrafting**” – the sustainability of many non-timber businesses will benefit from cultivation or acquisition of materials from cultivated sources. Many species adapted to forest environments may be produced successfully outside the usual forest settings, as long as suitable growing conditions are provided. However, not all NTFP plants are amenable to cultivation.

Plant material for NTFPs may be obtained through:

- ▶ **agroforestry**—growing forest trees, shrubs and other plants together in an agricultural setting, even as windbreaks or shelterbelts
- ▶ **arrangements with forest companies**—obtaining materials from companies that hold tenured contracts with government to harvest Crown forests
- ▶ **arrangements with other forest management groups**—such as First Nations, and overseers of demonstration or community forests
- ▶ **backyard cultivation**—using home gardens for small-scale production
- ▶ **commercial suppliers**—purchasing berries, cones, sap/syrup, greenery, honey, etc., from wholesalers or other industry suppliers
- ▶ **farm cultivation**—growing NTFPs on marginal or other farm lands
- ▶ **forest farming**—growing plants in the forest and managing them for production
- ▶ **forest waste**—salvaging forest slash or other debris after logging
- ▶ **greenhouse or nursery cultivation**—producing plants in plastic or glass greenhouses year-round, or as containerized or bareroot stock in nursery fields
- ▶ **hydroponic culture**—raising plants in soilless irrigated media, typically indoors
- ▶ **laboratory cultivation**—multiplying plants in test tubes or other containers in sterile environments
- ▶ **mill wastes**—obtaining byproducts of wood or pulping operations

- ▶ **private licensed woodlots**—managing small forested parcels for botanical products or services, or working with woodlot owners to arrange access or supply
- ▶ **salvage**—culling of unhealthy or unwanted trees (with permission) from forests, residential yards, municipal sites, development lands about to be cleared, etc.
- ▶ **wetland cultivation**—producing NTFPs in managed ponds or certain other wetland sites⁴
- ▶ **wildcrafting**—collecting material from natural populations in the wild (by permit or permission from local forest authorities so as not to endanger local stocks) (see “Wildcrafting safeguards”, below)

The preferred source typically depends on the final product. For example, food and health products will require clean, uncontaminated plant materials, while some arts & crafts can utilize less pristine inputs as long as the spread of pests and disease is avoided.

Permission is needed to collect NTFPs from sources external to one’s own property – such as from private or Crown forests, community forests, and native reserve lands. Local, provincial, territorial, or federal forest authorities should be contacted regarding restrictions or permits. It is important to work within existing resource management structures, and to comply with all relevant legislation, regulations, and policies regarding forest resources.

Wildcrafting safeguards

Collection of wild botanical materials should respect certain guidelines:

- ▶ **Avoid sensitive species**—Annual plants or others likely to be compromised by collection should not be wildcrafted. No species that is rare, threatened, or endangered should be gathered. Local forest authorities can provide a list of such species.
- ▶ **Exclude toxic plants**—Many plants are toxic if eaten or handled, and some even if inhaled. Plant guides and other expert sources should be consulted to ensure correct identification and safe usage.
- ▶ **Reject contaminated sites**—Plants should not be collected in areas recently treated with potentially dangerous herbicides or pesticides, or which have been contaminated by other toxins.
- ▶ **Limit number of cuttings**—Most useful greens are cut – not dug up – and typically there is only one cutting taken per year from any single plant.

⁴ Natural wetlands are not generally intended here, as these are ecologically important sites that tend to be sensitive to disturbance by human activities. Exceptions might be where wetland management for production assists stewardship activities.

- ▶ **Conserve root crops**—These should not be harvested unless they are present in abundance, and even then, only according to prescribed guidelines.
- ▶ **Support replenishment**—A sufficient number of healthy plants should be left on site to replenish the area. Typically, that means removing no more than one-quarter of above-ground biomass. Wildcrafters should check with local plant experts for harvesting recommendations for individual species.
- ▶ **Respect quarantines**—Avoid taking or transporting materials from regions quarantined against pests (such as ash borers and pine beetles). Materials also should not be harvested from areas that contain biological diseases. (Check with local government ministries for current status.)



Photos by Dan Pernokis

*A stand of **White Birch** in Sault Ste. Marie, Ontario.*

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*Moose Meadows Farms entry gate: Moose Meadow Farms, Quesnel BC
(www.MooseMeadowsFarm.ca) – Photo by Ted Traer
White birch trees in Sault Ste. Marie: Photos by Dan Pernokis*

About the Author

Gina Mohammed is a research scientist specializing in alternative uses of northern forest plants. She wrote the first major study of Ontario's non-timber industry, titled *Non-Timber Forest Products of Ontario: An Overview* during her tenure at the Ontario Forest Research Institute, Ministry of Natural Resources. Her research and over 130 publications cover the topics of botanical health products, plant biotechnology, bioindicators of forest health, forest physiology, and business applications of plant science.

In *The Canadian NTFP Business Companion*, Dr. Mohammed shares ideas and practical information on non-timber forest products & services, distilled from her research into the uses of over 1,700 forest species in Canada and her interactions with small businesses throughout North America.

Gina has a Ph.D. in plant physiology from Simon Fraser University, supplemented with over 25 years of international R & D experience. She is co-owner and research director of P & M Technologies, a Canadian science and information technology company formed in 1996 with her husband, Dan Pernokis.



Photo by Dan Pernokis

The Canadian NTFP Business Companion

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The United Nations General Assembly declared 2011 as the **International Year of Forests** to raise awareness of sustainable management, conservation, and sustainable development of all types of forests. *The Canadian NTFP Business Companion* is part of our on-going contribution to this endeavour. For further information about IYF, visit the UN website: www.UN.org/forests