Understanding Non-timber Forest Products
Activity on the Land Base
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G.G. Olivetto
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Prepared by
G.G. Olivotto
Consulting Forester, RPF
Campbell River, BC
gerrard@olivotto.com

Prepared for
B.C. Ministry of Forests and Range and Centre for Non-Timber Resources
Research Branch Royal Roads University
Victoria, BC

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The British Columbia Inter-agency Non-timber Forest Resources (IANTFR) Committee was established in January 2006 to facilitate a co-ordinated approach to non-timber forest resource management in the province. The Ministry of Forests and Range and Ministry of Agriculture and Lands co-chair the IANTFR Committee. Other government partners include or have included what are now the Ministry of Small Business, Technology and Economic Development, the Ministry of Aboriginal Relations and Reconciliation, and the Ministry of Community and Rural Development (names of some Ministries have changed since 2006). Representatives from the First Nations Forestry Council and the First Nations Mountain Pine Beetle Initiative have participated in committee meetings. The Centre for Non-Timber Resources at Royal Roads University provides expert advice and support services to the Committee. The Ministry of Forest and Range also contributes to the Committee by providing staff time and expertise, and resources to produce publications.

The goals of the Committee are (1) to improve communication and co-ordination across the provincial government, and (2) to advise government on issues related to non-timber forest resource management in British Columbia. The IANTFR Committee members have produced a communication strategy that includes the production of publications designed to improve awareness about non-timber forest resources so that they are managed appropriately.

A series of Land Management Handbooks on this theme are being co-published by the Ministry of Forests and Range and the Centre for Non-Timber Resources at Royal Roads University:

- **Understanding Non-timber Forest Products Activity on the Land Base** by Gerrard Olivotto (LMH 62)
- **Non-timber Forest Products, Tourism, and Small-scale Forestry: Income Opportunities and Constraints** by Darcy Mitchell (LMH 63)
- **Compatible Management of Timber and Pine Mushrooms** by Shannon Berch and Marty Kranabetter (LMH 64)
- **Non-timber Forest Product Development in British Columbia’s Community Forests and Small Woodlands: Constraints and Potential Solutions** by Emily Jane Davis
- **Managed Access to Non-timber Forest Products on Private Land and Eligible Tenures** by Wendy Cocksedge, Emily Keller, Art Mercer, and Grace Wang
- **Creating a Regional Profile for Non-timber Forest Products** by Wendy Cocksedge, Tom Hobby, Kathi Zimmerman, Dan Adamson, Russell Collier, and Emily Keller
- **What about the Berries? Managing for Understorey Species** by Wendy Cocksedge and Michael Keefer
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# CONTENTS

Foreword .......................................................... iii
Acknowledgements .................................................... iv

1 Introduction. ........................................................ 1
   1.1 Who should read this guide? .................................... 1
   1.2 Contents of this guide ........................................... 1

2 Commercially Harvested Products. ............................ 2
   2.1 Products harvested ............................................... 2
   2.2 Value of Non-timber Forest Products in the forest .......... 2

3 Location of Potential Non-timber Forest Products in the Local Forest. .......................... 3

4 Importance of Knowing Who Is in the Forest. .................. 4

5 Signs of Active Harvesting. ....................................... 5

Literature Cited ...................................................... 11

APPENDIX 1 Campbell River case study, November 2008 ......................... 7

## TABLES

1 Common botanical forest products harvested commercially in British Columbia ............ 2
2 Estimated harvester current production .................................................. 3
3 Signs of Non-timber Forest Product harvesting .......................................... 5
4 Additional Non-timber Forest Product resources ........................................ 6
A1.1 Participants in the Campbell River case study ...................................... 8
A1.2 Non-timber Forest Products harvested for commercial sale in the Campbell River area .. 10
Compatible management is the practice of managing forests for both timber and non-timber values, including non-timber forest products (NTFPs) (Titus et al., 2004). This series of guidebooks developed out of a survey conducted in 2006 in which a wide range of participants in the forestry sector provided their views on the opportunities for, and barriers to, compatible management (Cocksedge et al., in press). Incorporating non-timber forest products within forest management can provide social, ecological, and financial benefits for the land managers and for the surrounding communities and ecosystems. The purpose of the guidebook series is to provide a concise overview of the key issues and concerns for each topic, and to suggest resources that can help forest managers overcome some of the barriers to the compatible management they have identified.

The forests of British Columbia support many species of plants and fungi that have commercial value. Citizens presently harvest parts of plants, and fruits of both plants and fungi, and sell the harvest to buyers located throughout the province. In British Columbia, the harvest of these NTFPs may be measured in tonnes, or, for some products, in hundreds of tonnes. These products come from forest or range lands that are managed under many different types of timber tenure.

This guide was produced to provide forest land managers in British Columbia with an awareness of the NTFPs growing in their forests and the level of harvest activity that may or may not be happening within their land base. Many land managers have expressed a desire to include NTFPs within management plans, but they first require a better understanding of the perceived need within the community, the level of activity, and the focus of the NTFP harvesting. The guide also contains an introduction to commercial production opportunities and related socio-economic considerations.

This guide is based on the appended case study of forest land managers and NTFP sector participants in the Campbell River area, along with a literature review of relevant material. Campbell River has been an important forestry centre in the province, but many local forest product mills are now closing. NTFP harvesting may provide an alternative income for local citizens and land managers. Some topics brought forward in the case study, such as policy issues, access management, and rights to the crop, are covered in companion guidebooks.

Website links on issues related to NTFPs in British Columbia are included at the end of the guide. Each of these primary links leads to a network of other links that provide information for those interested in pursuing more detailed aspects of the subject.

1.1 Who should read this guide?

The guide provides a reference for land managers interested in the NTFPs currently or potentially harvested from their forests. It is written for all forest land managers in British Columbia, including those looking after forest land in community forests, native land claim areas, tree farm licences, woodlot licences, parks, municipal forests, and on private lands. The guide may also be a useful reference for associations of forest industry participants and for government and policy makers.

1.2 Contents of this guide

- Background information about some of the products commercially harvested or available for harvest in the forests of British Columbia, including a table listing fundamental information for fifteen botanical forest products presently harvested, and a table listing general product growing locations
- A brief exploration of socio-economic aspects of the harvest of NTFPs in British Columbia, including a table providing current estimates of harvester productivity and a table listing signs of harvest activity
- Contacts and additional information resources
2 COMMERCIALY HARVESTED PRODUCTS

Non-timber forest products harvested in British Columbia can be grouped into categories according to their end use. The main categories are floral greenery (moss, leaves, and boughs), edible products (mushrooms, berries, and ferns), medicinal nutraceutical products (bark, fungi, foliage, and flowers) and products used to make crafts and arts.

2.1 Products harvested

Table 1 provides a list of examples of the NTFPs that are harvested in British Columbia. Most of these products have commercial value and are sold for cash soon after harvest. All of these products are also collected for personal or community uses, and many have value-added potential for basket making and decorations, which are then sold through retailers or direct marketing. Many other products are harvested, depending on local ecology and harvester knowledge and enthusiasm. For instance, other food mushrooms besides those listed below, including blue chanterelle, cauliflower, chicken-of-the-woods, hedgehog, king bolete, lobster and oyster, are harvested for sale to specialized buyers (Berch and Cocksedge 2003). (For other examples, see Cocksedge and Schroeder 2006; BCCE 2007; Emery and McLain 2001.)

2.2 Value of Non-timber Forest Products in the forest

The value of NTFPs is variable, depending on location, time of year, market, and any value-added factors. Some generalizations can be made for bulk raw products, including estimated amounts of production per person per day. Table 2 provides estimates of harvester current daily production in commercially suitable locations and seasons.

Incomes for harvesters, after allowances for truck, fuel, and equipment costs, are generally at the low end of normal income for a hard-working person. A forest managed for increased production (e.g., care of the canopy), establishment of valuable species (forest farming), and a non-competitive harvest (limited access) may provide interested people with a greater income and the opportunity to build a long-term sustainable business.

<table>
<thead>
<tr>
<th>NTFP common name</th>
<th>Category*</th>
<th>Coastal</th>
<th>Northern Interior</th>
<th>Southern Interior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blueberries and huckleberries</td>
<td>E</td>
<td>X</td>
<td>O</td>
<td>X</td>
</tr>
<tr>
<td>Boxwood</td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chanterelle and pine mushrooms</td>
<td>E</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Conifer boughs</td>
<td>F</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Devil’s club</td>
<td>M</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Fiddlehead fern</td>
<td>E</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Grasses</td>
<td>C</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Morel mushrooms</td>
<td>E</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Mosses</td>
<td>F</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Nettles</td>
<td>M</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Salal</td>
<td>F</td>
<td>O</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Saskatoon berries</td>
<td>E</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sword fern plant salvage</td>
<td>F</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willows</td>
<td>C</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Yew</td>
<td>M</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

* E = edible, F = floral, M = medicinal, C = crafts (Berch and Cocksedge 2003; Kalum LRMP 2002, Appendix E; Wills and Lipsey 1999).
### Table 2: Estimated harvester current production

<table>
<thead>
<tr>
<th>NTFP common name</th>
<th>Estimated daily production of an experienced harvester</th>
<th>Approximate daily production value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blueberries and huckleberries</td>
<td>20 L</td>
<td>$100</td>
</tr>
<tr>
<td>Boxwood</td>
<td>25 kg</td>
<td>$150</td>
</tr>
<tr>
<td>Chanterelle and pine mushrooms</td>
<td>10 kg</td>
<td>$75–$250</td>
</tr>
<tr>
<td>Conifer boughs</td>
<td>50 kg</td>
<td>$100</td>
</tr>
<tr>
<td>Devil’s club bark</td>
<td>10 kg</td>
<td>$150</td>
</tr>
<tr>
<td>Fiddlehead fern</td>
<td>5 kg</td>
<td>$50</td>
</tr>
<tr>
<td>Grasses</td>
<td>5 kg</td>
<td>$50</td>
</tr>
<tr>
<td>Morel mushrooms</td>
<td>20 kg</td>
<td>$75–$250</td>
</tr>
<tr>
<td>Mosses</td>
<td>20 sacks</td>
<td>$150</td>
</tr>
<tr>
<td>Salal</td>
<td>50 kg</td>
<td>$100</td>
</tr>
<tr>
<td>Saskatoon berries</td>
<td>10 L</td>
<td>$50</td>
</tr>
<tr>
<td>Sword fern plant salvage</td>
<td>75 plants</td>
<td>$150</td>
</tr>
<tr>
<td>Willows</td>
<td>10 bundles</td>
<td>$150</td>
</tr>
</tbody>
</table>

* Volumes estimated from author’s experience; prices based on Cocksedge and Schroeder (2006).

### 3 Location of Potential Non-Timber Forest Products in the Local Forest

Existing timber inventories contain a wealth of information that is useful to determine probable and suitable locations to check for, or to establish, commercial NTFPs. For many species, this information will indicate the habitat potential for the presence of the species but not for its quality.

Timber inventories record dominant tree specie(s) and age, stand height and crown closure, and stand management history. Other map layers show the terrain; location of roads, watercourses and wetlands; and ecosystem classification. These data may be used to help identify locations of NTFPs known to associate with particular combinations of tree species and ages within forest stands, and preferred soil nutrient and moisture conditions.

For example, these NTFP species may be located with available information from the timber and land inventory:
- boughs in conifer stands 10 to 20 years old
- morels the year after a forest fire
- moss under cottonwoods
- willows in open areas near swamps

Timber and land maps can help to identify areas to focus on, but many species require specific habitat for suitable abundance and quality; therefore, a further understanding of their predictive habitat attributes is required to either find or map the NTFP. For example, the potential habitat for salal is quite broad, but patches of commercial floral greenery quality or abundant berries are much smaller; very different light levels and moisture and nutrient regimes are required for either good branches or high-quality berries. Blueberries are often associated with young forests after fires or timber harvests, but quantity and quality will often depend on other factors such as elevation, aspect, level of disturbance, and the local bear population.

For specific examples of understanding which attributes are important for selected species, see the other guides in this series: Compatible Management of Timber and Pine Mushrooms and What about the Berries? Managing for Understorey Species. For further discussion of NTFP inventories, refer to the guides Creating a Regional Profile for Non-timber Forest Products and Non-timber Forest Product Development in British Columbia’s Community Forests and Small Woodlands: Constraints and Potential Solutions.
There are 200+ non-timber products that are reported to be collected in British Columbia forests (DeGeus, 1995; Ehlers and Keefer, 2007, Appendix 2); any local forest area likely contains a dozen or more of these products. The resource can be managed and the crop increased using existing scientific knowledge of the life cycles, associations, and preferred habitat of the local plant and fungal species. (See the guide *What about the Berries? Managing for Understorey Species*.)

### 4  IMPORTANCE OF KNOWING WHO IS IN THE FOREST

An important responsibility of the forest land manager is to ensure the sustainability of the timber harvest, which is regulated to maintain a growing inventory—i.e., the allowable rate of timber harvest is generally set to approximate the rate of growth of the forest resource. However, the NTFP harvest is presently not regulated.

Decisions have been made for compatible management where the land manager, having a complete understanding of the situation, has decided to defer timber harvest in order to support an NTFP harvest. For example, in the Queen Charlotte Islands, the land manager in a small, isolated community understood the interests of harvesters and made a no-harvest decision for timber to support the chanterelle mushroom harvest. On the other hand, in another community, the land manager who was based 100 km from the forest area, ignored the NTFP harvesting community’s resistance to logging, which resulted in threatened civil disobedience. For further information, see the guide *Compatible Management of Timber and Pine Mushrooms*.

With small numbers of harvesters of NTFPs there is generally enough crop that all can earn a modest income. However, as the numbers of harvesters increase, the picking pressure intensifies and this forest resource becomes degraded; it may take years to recover to commercial production levels. Using salal as an example, recommendation may be that harvesters take only a quarter of the woody material. This works for the first pass, but after a second and third pick (often with different harvesters) in the same season at that rate, only 40% of the original commercially attractive plant volume survives to produce fresh crop the following year. The third pick is also of lower quality than the first.

Similar conditions apply to a mushroom patch where over-picking results in harvest of the “babies” and both the average grade and the total volume harvested over the season from a particular area are reduced.

There may be ecological impacts caused by using off-road vehicles (quads) to transport harvesters and their product between the harvest location and the open road system. Having people in the woods also creates an elevated risk of wildfire.

Beyond damage to the crop itself, people in the forest may cause other kinds of damage, including wear and tear on the road system, damaged gates, and distribution of litter. There have been reports of vandalism, and theft of equipment and tools.

Safety is a concern. Harvesters generally do not carry communication radios in their vehicles, which poses a risk on the roads for properly equipped forestry vehicles. Harvesters may be injured or become lost in the woods. Hygiene and disposal of human waste are issues where harvesters set up seasonal camps. Harvesters interact with wildlife, especially bears. Food garbage left exposed will attract bears. Harvester groups may carry protection—bear spray or firearms. The British Columbia Ministry of Environment website has information about bear safety and about the resident species of bears and their habitats: www.env.gov.bc.ca/main/subjectindex.html#B.

An important reason for knowing the NTFP harvesters is that, as they come to know the land manager, they may be more willing to co-operate and report early warning signs of problems that may be occurring in the forest.

For further information on timber and land maps, see the British Columbia Ministry of Forests and Range Research Branch website, which provides official codes, maps, software, and a description of the classification system for the application of ecology to resource management in British Columbia: www.for.gov.bc.ca/hre/becweb/resources/.

Hectares BC is a new tool for geospatial data analysis in the natural resource area: www.hectaresbc.org/trac.
In order for the manager to understand the current value (both financial and non-financial value) of the non-timber products from the forest, he or she must determine if there is active harvesting. The main signs of harvest activity are human tracks, tire marks, and possibly waste food containers. It then requires a skilled eye or familiarity with the site to notice that something has been harvested. Table 3 lists some signs to notice. For further information on the habitat of each species, refer to the handbooks by MacKinnon et al. (1992), Pojar and MacKinnon (1994), Parish et al. (1996), Schalkwijk-Barendsen (1994) and Vitt et al. (2007).

### Table 3  Signs of Non-timber Forest Product harvesting (Berch and Cockseedge 2003; Kalum LRMP 2002, Appendix E; Wills and Lipsey 1999; personal observations)

<table>
<thead>
<tr>
<th>NTFP common name</th>
<th>Part used</th>
<th>Season</th>
<th>Ecological signs of harvesting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blueberries and bucklesberries</td>
<td>berries</td>
<td>autumn</td>
<td>reduced abundance</td>
</tr>
<tr>
<td>Boxwood</td>
<td>branches</td>
<td>summer</td>
<td>cut stems</td>
</tr>
<tr>
<td>Chanterelle and pine mushrooms</td>
<td>fruit</td>
<td>autumn</td>
<td>cut stems (chanterelle), holes in the moss (pine)</td>
</tr>
<tr>
<td>Conifer boughs</td>
<td>foliage</td>
<td>pre-Christmas</td>
<td>lower branches trimmed</td>
</tr>
<tr>
<td>Devil’s club</td>
<td>bark</td>
<td>spring</td>
<td>bark shaved off leaving cut bare sticks</td>
</tr>
<tr>
<td>Fiddlehead fern</td>
<td>young shoot</td>
<td>spring</td>
<td>footprints in the soft earth</td>
</tr>
<tr>
<td>Grasses</td>
<td>stem and flower</td>
<td>summer</td>
<td>cut stems</td>
</tr>
<tr>
<td>Morel mushrooms</td>
<td>fruit</td>
<td>spring</td>
<td>footprints in the ash, cut stems</td>
</tr>
<tr>
<td>Mosses</td>
<td>whole plant</td>
<td>spring</td>
<td>bare patches at the base of cottonwoods or on exposed bedrock</td>
</tr>
<tr>
<td>Nettles</td>
<td>young shoot</td>
<td>spring</td>
<td>reduced abundance</td>
</tr>
<tr>
<td>Salal</td>
<td>branches</td>
<td>year-round</td>
<td>shorter bushes, missing leader stems</td>
</tr>
<tr>
<td>Saskatoon berries</td>
<td>berries</td>
<td>autumn</td>
<td>reduced abundance</td>
</tr>
<tr>
<td>Sword fern plant salvage</td>
<td>whole plant</td>
<td>year-round</td>
<td>extraction in advance of road construction</td>
</tr>
<tr>
<td>Willows</td>
<td>stem</td>
<td>autumn</td>
<td>cut stems</td>
</tr>
<tr>
<td>Yew</td>
<td>bark</td>
<td>year-round</td>
<td>missing bark</td>
</tr>
</tbody>
</table>

Once NTFP harvesting is identified, there are several ways to determine the level of activity within the land base.

- Meet the harvesters at each local buying station, which can be located by talking with a few long-term local residents. Some stations are seasonal; others operate year-round. Buyers often have a long association with the industry, and may be willing to explain the collection and handling of the product. If the products from a particular forest are being processed at the buying station, an estimate of the product values harvested can be determined by observing the number of harvesters selling. Multiply the number of harvesters by an expected earning range of $75 to $175 per day, plus a truck allowance sufficient to maintain and operate a sturdy 4x4 in good condition, and divide by the value of the product collected.
- Observe the location and number of parked vehicles, or make counts at main entry points, taking into consideration that there could be many reasons for the presence of these vehicles, such as hiking, hunting, or fishing.
- Walk through the forest during ideal harvest times—crop in season (see Table 3), good weather, possibly the weekend—and talk with the harvesters about crop and market conditions for the current year compared with previous years.
- Go out in the forest with a harvest crew for a day and consider taking along lunch for everybody.
• Consider instigating a voluntary permit system. (See the guide *Managed Access to Non-timber Forest Products on Private Land and Eligible Tenures*.) Permits may be designed to ensure safety and environmental protection. The permit would be left on the dash of the harvester transport vehicle, with emergency contact information showing, while the harvester is out in the forest.

• Further information on non-timber forest products for the resource manager can be found in Table 4.

**Table 4. Additional Non-timber Forest Product resources**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre for Non-Timber Resources (CNTR)</td>
<td>The website for the CNTR at Royal Roads University contains news, education resources, research reports, and an online searchable bibliography for non-timber resources.</td>
<td><a href="http://www.cntr.royalroads.ca">www.cntr.royalroads.ca</a></td>
</tr>
<tr>
<td></td>
<td>A valuable specific reference listed on the CNTR website is Cocksedge (2006) Incorporating non-timber forest products into sustainable forest management. An overview for forest managers.</td>
<td>node/63</td>
</tr>
<tr>
<td></td>
<td>The CNTR supports the “Buy BCwild” website, which provides a directory of botanical products and producer contact information for hundreds of businesses throughout British Columbia.</td>
<td><a href="http://www.buybcwild.com">www.buybcwild.com</a></td>
</tr>
<tr>
<td>Ministry of Forests and Range, Forest Science Program, Research Branch</td>
<td>The website for the British Columbia Forest Service Research Branch provides knowledge and tools for the application of ecology to resource management in British Columbia. The site provides official codes, maps, software, and a description of the Biogeoclimatic Ecosystem Classification system.</td>
<td><a href="http://www.for.gov.bc.ca/hre/becweb/resources">www.for.gov.bc.ca/hre/becweb/resources</a></td>
</tr>
<tr>
<td></td>
<td>The Research Branch also has a link to its research activities and publications related to non-timber forest products.</td>
<td><a href="http://www.for.gov.bc.ca/hre/ntfp">www.for.gov.bc.ca/hre/ntfp</a></td>
</tr>
<tr>
<td>Agroforestry Industry Development Initiative</td>
<td>The Agroforestry Industry Development Initiative, sponsored by the Federation of British Columbia Woodlot Associations, has links to news, education workshops, and information about current projects that are testing the establishment of combinations of plant layers and associations. The site lists demonstration projects located throughout British Columbia.</td>
<td><a href="http://www.woodlot.bc.ca/agroforestry">www.woodlot.bc.ca/agroforestry</a></td>
</tr>
<tr>
<td>Native Plant Society of British Columbia</td>
<td>The Native Plant Society of British Columbia provides links to local horticultural groups, nurseries, and seed suppliers in British Columbia that specialize in native plants.</td>
<td><a href="http://www.npsbc.org">www.npsbc.org</a></td>
</tr>
<tr>
<td>Forum for Research and Extension in Natural Resources (FORREX)</td>
<td>FORREX maintains updated information about current forest research initiatives in British Columbia. A free printed quarterly report is available by mail. Articles in the fall 2008 edition included a study of black huckleberry production in the Kootenays, research into the effects of canopy light intensity on understory plants, resource sharing among trees via mycorrhizal networks, and a description of pine mushroom habitat characteristics.</td>
<td><a href="http://www.forrex.org">www.forrex.org</a></td>
</tr>
</tbody>
</table>
Introduction

This case study was developed to explore the interactions and knowledge of a range of stakeholders of the non-timber forest product (NTFP) harvest within the Campbell River area of British Columbia. Individuals knowledgeable about the NTFP sector in Campbell River were identified in November 2008. Twenty-one participants, including three or more individuals from each of buyers, First Nations, government, harvesters, major licensees, and woodlot owners, were personally interviewed.

The focus of the interviews was how a land manager can know the people that are collecting products from the forest, and what products are being collected and in what volumes. Individual interviews lasted about an hour and were based on an organized list of questions. Each interview allowed the respondent to lead, with interjections or new topics introduced by the author. Each respondent had different issues of interest and somewhat different opinions of the situation being discussed.

Background

Campbell River is located in the Coastal Western Hemlock biogeoclimatic zone, which has mild temperatures and seasonally plentiful precipitation. All the participants of the study work in forests located within 100 km of the city, and many are involved with forestry along the entire coast of British Columbia. Local NTFPs harvested and sold commercially include salal, tree boughs, moss, ferns, and pine and chanterelle mushrooms.

While there are extensive private and park lands in the Campbell River area, most local forests are located on Crown land and are managed for multiple benefits on behalf of society. Some forest areas are managed directly by government through British Columbia Timber Sales. Other specific areas are managed by large forest companies (Tree Farm Licence) or by individuals or First Nations (Woodlot Licence). In the remaining productive Crown forest, companies and First Nations have volume-based rights to harvest timber.

All of these tenures on Crown land include rights that are specific to opportunities to harvest timber, but none carry rights respecting harvest or management of non-timber forest resources.

Project Objective

The objective of this project was to identify the level of understanding and communication between the various stakeholders, as well as opportunities for, and barriers to, information sharing between land managers and NTFP harvesters. This study may contribute to the development of principles to guide the use of the non-timber resources of the “forest commons” in the Campbell River area and throughout British Columbia.

Methods

The case study consisted of a series of one-on-one interviews with selected individuals. People invited to participate generally had 20 or more years experience in their field. They were chosen to represent a complete cross section of NTFP stakeholders.

Table A1.1 lists, in alphabetical order, the association and expertise of the people contacted.

Comments from First Nations were specifically sought because it was thought that they attach special importance to non-timber aspects of the forest. Mainly their interest is hunting (food) and firewood (warmth), with some cultural supplies collected by individuals. First Nations generally do not harvest NTFPs for cash sale in this area.

Of the 21 interviews conducted, 10 were by telephone only. The other 11 consisted of initial contact by telephone, followed up by a visit at the person’s place of business, where discussions lasted from 30 minutes to an hour. A set of interview topics was developed for discussion. The interview process was in the form of discussions rather than attempting to ask everyone exactly the same questions. Clearly, harvesters and buyers are more expert at knowing what the work is like and what products are harvested; land managers are more familiar with aspects of monitoring forest use, reducing potential for damage, using available forest inventories, and administering permits. However, the topics below were discussed to some degree at most interviews. Comments from the interviews are summarized in the following sections.
TABLE A.1.1  Participants in the Campbell River case study

<table>
<thead>
<tr>
<th>Association</th>
<th>Description of expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Nations</td>
<td>Band chiefs (2)</td>
</tr>
<tr>
<td></td>
<td>Band manager</td>
</tr>
<tr>
<td></td>
<td>Band forestry consultant</td>
</tr>
<tr>
<td>Government</td>
<td>Ministry of Forests and Range technician</td>
</tr>
<tr>
<td></td>
<td>Ministry of Forests and Range planner</td>
</tr>
<tr>
<td></td>
<td>BC Timber Sales manager</td>
</tr>
<tr>
<td></td>
<td>Ministry of Agriculture and Lands field specialist</td>
</tr>
<tr>
<td>Major Licensees</td>
<td>Chief forester</td>
</tr>
<tr>
<td></td>
<td>Area forester</td>
</tr>
<tr>
<td></td>
<td>Tree Farm Licence manager</td>
</tr>
<tr>
<td></td>
<td>Forest ecologist</td>
</tr>
<tr>
<td>NTFP Buyers</td>
<td>Floral greenery</td>
</tr>
<tr>
<td></td>
<td>Pine mushrooms</td>
</tr>
<tr>
<td></td>
<td>Florals, pine and chanterelle mushrooms</td>
</tr>
<tr>
<td>NTFP Harvesters</td>
<td>Conifer boughs</td>
</tr>
<tr>
<td></td>
<td>Salal</td>
</tr>
<tr>
<td></td>
<td>Mushrooms</td>
</tr>
<tr>
<td>Woodlot Licensees</td>
<td>Woodlot owners (2)</td>
</tr>
<tr>
<td></td>
<td>Consultant specializing in woodlot planning</td>
</tr>
</tbody>
</table>

Summary of Results

**Question 1: How do you know how many people are harvesting non-timber products in the forest?**

**Summary of Answers**
The primary indicator that people are in the bush, mentioned by at least six respondents, is seeing vehicles parked along roadsides. Respondents also mentioned recognizing particular vehicles travelling the main lines, although they were not sure of their harvesting destination. Both Ministry of Forests and Range (MFR) staff and licensees mentioned seeing bough cutters and salal pickers working near roadsides. Woodlot owners see the same salal harvesters year after year.

Provincial parks in the Campbell River area support good growth of NTFPs. Harvesting in provincial parks is prohibited (*Park Act* section 9) unless in the opinion of the Minister, harvesting is necessary for the preservation or maintenance of recreational values. The absence of parked cars does not mean that harvesters are inactive. Harvesters could be dropped off and picked up later with what they collected.

All respondents agreed that it would be impossible to staff a “bush patrol” to monitor the collection of products in the forest. They stated that to enable monitoring would require gate passage or award of permits for operations in specific areas.

The present perception of respondents is that harvesters do not communicate much with land managers. Several land managers noted that harvesters rarely contribute to public forums during the development of forest stewardship plans or land use plans. The land managers in the study area respect that desire for privacy, and typically pass by harvesters met in the woods with a simple social greeting, and perhaps a reminder to not leave garbage.

**Question 2: What interactions occur between land managers and harvesters?**

**Summary of Answers**
Two harvesters mentioned that a tree farm licensee issues permits for bough collection. The licensee showed the author a sample of the one-page permit. The licensee has also used it for moss collectors. The “permit” is not for revenue collection or harvester exclusion but rather it is an agreement of mutual respect for each other and for forest values and two-way sharing of knowledge. It also has aspects of a waiver, in that a forest user signing a permit accepts responsibility for their own safety.

The local feeling toward permits is that they strengthen identity. The harvester with a permit takes extra pride in the work because someone else knows about the operation and will look over the results. The land manager issuing a permit knows that experienced, competent people are operating in the forest, and is generally willing to help out with guidance about technique and information about resource locations.

Foresters inspect the bough collectors in the forest to ensure they cut only the lower 40% of branches, and make a second cut (called notching) to trim the branch flush with the tree trunk. A valuable local crop species for boughs is western white pine. Clipping the lower branches reduces blister rust
infection of the tree, and allows the tree to grow clear wood thereafter. Foresters have provided maps to competent bough harvesters so they can locate other suitable young stands.

A licensee and an MFR representative each suggested that tolerance helps everybody. Harvesting products in the forest boosts health and exercise. People are doing what they enjoy, and earning an income.

Local land managers said they believe that the freedom of the individual is what matters. A permit or licence for a commercial operation would be different. For example, in exchange for permission to operate within the claim, all major forest licensees interviewed said they would require the new operator to be a safe company registered with WorkSafeBC, carry liability insurance, meet Environmental Management System and first aid standards, and contribute to fire prevention and road maintenance.

**Question 3: What is the work like?**

**Summary of Answers**
Harvesters and buyers were enthusiastic to discuss aspects of their work. Collecting NTFPs is reported to be hard physical work in a fresh forest air environment. It allows for an independent, outdoors life with an opportunity to earn a modest income. In the Campbell River area, rain gear is always present, and usually worn.

Earning a successful income collecting NTFPs requires physical fitness, experience, and knowledge accumulated over years. It also requires ownership of a sturdy 4x4 vehicle in good condition to ensure both livelihood and safety.

There are no machines involved in the NTFP harvest in the case study area, either at the harvest site or at the buying stations. The work is therefore peaceful and social. The only machines used are for picker and product transportation.

Mushroom harvesters cover long distances while harvesting products. Bough and salal pickers work a day within a 100-m radius, accumulating a load and then making several trips to carry the product to the roadside.

Harvesters deliver their product each day to buying stations located in the light industrial section of Campbell River. The buyers generally work on contract for particular product distributors. A multi-product buyer may have one contract for boughs and salal, another for mushrooms. Great care is taken to keep the fresh boughs and salal cool and moist, for pickup by the distributor every 2 to 4 days. Food products are shipped daily.

**Question 4: What products are harvested and in what seasons?**

**Summary of Answers**
Table A1.2 summarizes information about the NTFPs reported to be harvested for commercial sale in the Campbell River area. See the Harvesters Handbook at www.cntr.royalroads.ca/publications for more information on these and other species.

**Question 5: How much of each product is harvested?**

**Summary of Answers**
Buyers know the quantity of products that move out of the Campbell River area through their stations. That information is confidential to the business. Other products may be delivered directly to buyers in Ladysmith or Nanaimo, or pooled and sent to Vancouver. Products are also sold to local businesses, such as nurseries, florists, and specialty restaurants.

At present no system tracks the geographic location or land status of the source of NTFPs. Local land managers were unable to make any estimates of what volumes of products are presently harvested from their forests.

The amount of product harvested is presently self-regulated for some species, due to the level of quality that the market demands. A woodlot owner stated that as a particular area of salal is picked over, the density of valuable branches falls below a commercial quantity, and harvesters move on to other patches that they know about. The salal plants then have an opportunity to establish growth for next year. Regularly harvested salal patches are reported to look similar to, but less tall, than non-harvested patches (inaccessible to harvesters) in the same area.

**Question 6: Are harvesters doing any damage to the forest?**

**Summary of Answers**
One harvester and one licensee recounted seeing white pine trees with all branches and even tops removed. Most observations from land managers were about garbage, especially since the garbage is distributed rather than accumulated at a gathering
site. Most licensees mentioned wear and tear on forest roads, theft, or vandalism to gates and equipment. However, they did not know whether damage was caused by harvesters or by other forest users.

**Question 7: How would a land manager discover what products are available for harvest in the forest?**

**Summary of Answers**
Many of the interviews with land managers were concluded with a question: “If you were given a free map of all the non-timber resources in the forest that you manage, would it be of any value?” One respondent thought yes for academic but not business purposes, another said “yes, if you show the mushroom patches.” All other land managers said no. However, harvesters and buyers would definitely like to have such a map.

One woodlot owner recognized that such a map would support a business case to present to the provincial government of the value that might be added to forestry through adding non-timber product rights to the Woodlot Licence.

Land managers stated that their lack of interest in owning and maintaining an inventory of NTFPS is because they presently have no rights to manage the crop for production and revenue except on private land with gated access. Issues about rights are discussed in the guide *Non-timber Forest Product Development in British Columbia’s Community Forests and Small Woodlands: Constraints and Potential Solutions*.

The author adds the following answers to this question:

The forest manager has inventories of trees by age, density, and species, and maps of ecosystems. Scientists know what types of vegetation each subzone and variant can support. (See the discussion and references in the guide *Creating a Regional Profile for Non-timber Forest Products*.)

The land manager in the Campbell River area, therefore, knows the location of young stands suitable for bough collection. He or she also knows the history of commercial thinning where there can be expected an abundance of chanterelle mushrooms. Ecosystem and crown density maps can be used to highlight probable locations of salal patches. Maps show the location of watercourses with their unique streamside vegetation. And most importantly, maps show the location, and sometimes the condition, of travel routes to access the resources.

**Summary and Conclusion**

This case study sought the knowledge and opinions of 21 people familiar with forestry and the NTFPS harvest in the Campbell River area. The objective was to develop a picture of the socio-economic aspects of the sector. That is, a picture of communications among stakeholders, the economic importance of the sector, and the potential for improvement of both aspects.

The study found that the NTFP harvest is conducted openly in local forests. Sector participants and forest land managers have respect for each other, but seldom interact. Information sharing, which could benefit both parties, is next to non-existent. Each party has complaints about the activities of the other—locked gates versus garbage, for example, but there is no formal mechanism for discussion between the parties.

The information provided by participants was inadequate to develop an estimate of annual revenues generated by the local NTFP harvest. The author visited all three established buying stations in Campbell River, and observed that although not luxurious, they were all housed in permanent year-round heated buildings. Each buyer had been in business for at least 20 years. During a visit at one station, the large truck that arrived to collect a load of salal for shipping was in first-class condition, was insulated, and had a power tailgate lift. All three harvesters interviewed earned probably half their annual income from NTFPS, and each had been harvesting for over 10 years.

**TABLE A1.2  Non-timber Forest Products harvested for commercial sale in the Campbell River area**

<table>
<thead>
<tr>
<th>Products harvested</th>
<th>Use of product</th>
<th>Season of harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>White pine, cedar, and amabilis fir boughs</td>
<td>wreaths and essential oils</td>
<td>September–mid November</td>
</tr>
<tr>
<td>Salal</td>
<td>floral arrangements</td>
<td>August–April (snow permitting)</td>
</tr>
<tr>
<td>Moss</td>
<td>lining hanging baskets</td>
<td>March–May</td>
</tr>
<tr>
<td>Chanterelle and pine mushrooms</td>
<td>food</td>
<td>September–November</td>
</tr>
</tbody>
</table>


Other than comments about garbage and isolated incidents of destructive harvest practice, the forest land managers contributing to the case study were in favour of the NTFP harvest activity. Several, mainly the major licensees, had concerns about potential liability issues. An important conclusion of the case study must therefore be that there is favourable opportunity to formalize and expand the local NTFP sector. Co-operation between NTFP sector participants and land managers could include forest managers sharing maps, inventory information, and safety guidelines, and harvesters ensuring that no damage occurs and that issues observed (a washed out culvert, for example) are reported. Co-operation could eventually result in sharing of knowledge and labour by both sectors in order to support sustainable harvesting of valuable crop species.

**LITERATURE CITED**


