

# Forest Farming in British Columbia<sup>1</sup>

Richard D. Hallman<sup>2</sup>, Jill Hatfield<sup>3</sup>, Harold E. Macy<sup>4</sup>

**ABSTRACT:** British Columbia is a huge area of spectacular scenery with a wide range of biogeoclimatic zones. Wild harvesting of a long list of Non Timber Forest Products (NTFP) is a major industry throughout the Province. The most important of these products are the American Matsutake Mushroom and Salal (*Gaultheria shallon*), a floral green. Intentional farming of many of these products is at a very early stage in most areas. Native Stand production of Christmas Trees is a major industry near the Rocky Mountains. Some forest farming systems are being copied from other areas such as forest grown Ginseng and Shiitake mushrooms. First Nations are investigating both traditional and new wild harvest products and forest farming crops. This poster discusses the current state of the industry, problems being experienced with wild harvesting of NTFP industry, the need for expanded forest farming, forest farming opportunities and products currently produced.

Forest farming is a new industry in British Columbia. Many of the crops that are being forest farmed or are being considered for forest farming are currently wildcrafted from the forest. The development of forest farming in British Columbia (BC) is influenced by:

- the massive size of the province (90 million hectares)
- the high percentage of the province that is forested (70%)
- the large proportion of the land area that is publicly owned (only 5% of the forests are privately owned)
- the available land base for forest farming including public and private forests, woodlots, farm land and utility right-of-ways
- land tenure and access problems
- the wide range of biogeoclimatic zones across the province
- the huge diversity of native plants
- shortage of knowledge of the ecology and culture of native plants
- development of the Non Timber Forest Products (NTFP) industry
- rules or lack of rules controlling the harvest and marketing of Non Timber Forest Products (NTFP) from private and public lands
- growing concern about the environmental impact of the wild harvesting of NTFP
- the down turn in the forest industry - unemployment in rural communities
- the potential for forest farming to provide short term cash flow while landowners wait for timber trees to mature

## Non Timber Forest Products (NTFP):

Wildcrafting (harvesting from wild populations) of a wide range of NTFP is a major industry in British Columbia. The 1997 industry revenues are estimated at \$200 million. The size and scope of this industry is detailed in the 1995 publication 'Botanical Forest Products in British Columbia: and Overview' (de Geus, 1995). Plants are harvested for:

- wild edible mushrooms
- medicinal and pharmaceutical products
- floral and greenery products
- wild berries and fruit
- herb and vegetable products
- landscaping products
- craft products
- miscellaneous botanical forest products

Of particular note (due to the size of the harvest) are Pine Mushrooms (*Tricholoma magnivelare*) and Salal (*Gaultheria shallon*), a broadleaf floral green. The Pine Mushroom harvest has had the look and feel of a gold rush, with individual mushrooms returning up to \$50 per pound to the harvester in a good year. This gold rush attitude has resulted in significant social problems, including huge influxes of migrant pickers into small communities, garbage from bush camps, pickers lost in the forest, and fires. These concerns along with a scientific concern about the ecological impact of the harvest forced forest land managers to organize the 'Pine Mushroom Task Force in 1992. The recommendations of the Task Force were released in 1995 (de Geus, 1995) to date, few of them have been implemented.

Since 1995 interest in the harvest of NTFP has

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<sup>2</sup>Agroforestry Specialist, BC Ministry of Agriculture and Food, Creston, British Columbia

<sup>3</sup>Agrologist, BC Ministry of Agriculture and Food, Courtenay, British Columbia

<sup>4</sup>Forestry Manager, Research Farm, Oyster River, University of British Columbia, Campbell river, British Columbia

increased dramatically. BC 's traditional forest industry is in a period of significant downsizing. This downsizing has caused widespread unemployment and lack of job security, particularly in small isolated rural communities. Many of the unemployed hope that the NTFP (and forest farming) industry will replace some of the jobs lost in the traditional forest sector.

### **Forest Farming in British Columbia Is Developing in Two Areas:**

1. The fastest developing is the management and farming of NTFP that are currently harvested from wild stands in forests (private and public) throughout the province. These NTFP & crops are either cultured where they occur naturally or are farmed at varying levels of intensity. The highest level of forest farming interest is with mushrooms, floral greens, medicinal plants and Christmas trees, followed by Christmas greens, berries, landscape plants and tree-based syrups.
2. The second area is the development of forest gardens with 'exotic' crops such as American and Siberian Ginseng, Goldenseal and Shiitake mushrooms. Small forest farms growing these crops are starting to pop up in all areas of the province.

### **Land Base**

#### *Public Lands*

Much of British Columbia is covered with public forest. In the public forests most NTFP are wild harvested. There is enormous interest in sustainable management of these crops/products in the public forests. However, the ecological information required to put management programs in place is generally lacking. Several reports have identified the lack of information and the need for research (Hamilton 1998, de Geus 1995). Projects underway are greatly expanding our knowledge of the plants and opportunities (Wills and Lipsey 1998). Agencies are examining the potential of managing public forests for more than timber. Based on work in the US Pacific Northwest (Hosford, et al. 1997) analysis, some work has been done on the Pine Mushroom and management of timber stands for timber and mushroom production (Olivotto, 1998).

#### *Private Lands*

Most forest farming interest is focused on the

relatively small private land base. A survey of non-industrial forest landowners (Manning, 1994) has identified 21,000 owners of private lands between 20 and 4,000 hectares. There are also 400,000 hectares of private forest lands inside the British Columbia Agricultural Land Reserve (Schwichtenberg, 1997). Private forest lands are some of the most productive forest lands, however, much of these areas are not being well managed. The primary reason for poor or no management is that investment in timber is too long-term. Forest farming is emerging as an excellent way to provide short-term cash flow while waiting for timber to mature.

### **Utility Right-of-Ways**

British Columbia is a major producer of hydro electricity. Transmission power lines on right-of-ways carry electricity from hydro dams to populations centers. One company, BC Hydro, manages more than 90,000 hectares of land in right-of-ways. They must control vegetation so it does not interfere with the powerlines. Various agroforestry systems, including forest farming systems (stump cultured Christmas trees with an understory of floral greens), are beginning to replace traditional methods of vegetation management.

### **Crops/Products**

#### *Mushrooms*

Mycorrhizal Mushrooms - Harvesters of mycorrhizal mushrooms receive an estimated \$40-60 million annual for the crops they harvest in BC. Mushroom harvesters and timber harvesters often disagree on how the land that grows both timber and mushrooms should be managed. So far the timber managers have been in control of land-use decisions, however there are indications that this is starting to change.

Wood rotting fungi - Stumps and logs in forests stands are being inoculated with various wood rotting fungi (primarily Oyster Mushrooms -*Pleurotus ostreatus*). While there is a lot of excitement about the potential of this production system, it is at early stages of development in the forests of British Columbia.

Shiitake mushrooms (*Lentinus edodes*)-In 1979 a research project examined the potential to grow Shiitake in logs of native species. There are several businesses now growing Shiitake in Paper Birch and Red Alder Logs (a wide range of other species are

being tested). At this time birch and alder are often waste when the more desirable conifers are harvested.

Medicinals and Nutraceuticals - There are a wide range of medicinals harvested from BC forests (de Geus, 1995; Wills and Lipsey, 1998). The species of interest for forest farming are those that are in high demand, are difficult to collect large volumes from the wild and that we have information on cultivation or intensive management.

Floral Greens - In 1997 revenues from the harvest of Salal in BC was estimated to be \$60 million. Until recently Salal was considered to be a weed-it can grow to 6 feet tall and completely smother newly established conifer seedlings. So much Salal has been harvested over the last few years that rumors are circulating that it is starting to die out in some places. This plant is perfectly suited to a forest farming system. The best quality floral product is produced in partial shade (60%). Other shade tolerant floral greens that are being considered for farming under forest cover include Falsebox (*Pachistima myrsinites*), Bear-grass (*Xerophyllum tenax*), evergreen huckleberry (*Vaccinium ovatum*) and Sword Fern (*Polystichum munitum*). Sun tolerant floral greens that are also being considered for forest farming systems include Scotch Broom (*Cytisus scoparius*) and Oregon Grape (*Mahonia aquifolium*).

Berries - A recent study (Thiessen, 1998) examined the potential for sustainable harvesting and marketing of value-added forest products; specifically edible wild products in British Columbia. The study examines harvesting, buying, processing and distribution of the value added product. This is still preliminary work-a wild berry industry in British Columbia is still in the future.

Natural Stand Christmas tree culture - An unusual forest farming system that is being developed in BC is the combination of natural stand stump cultured Christmas trees with shade tolerant plants under the trees. This system has enormous potential to replace traditional vegetation management on utility right-of-ways.

Tree Syrups - Non-commercial tapping of native trees is taking place in limited areas within the province. The species of trees being tapped for syrup include Big Leaf Maple and Paper Birch. The sugar concentration in the sap extracted from these trees is much less than that of Sugar Maple. This industry has

potential for the production of syrups, drinks like birch beer, and as an agri-tourism attraction.

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