

## State of non-timber resource inventories

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### Abstract

**BC currently lacks the non-timber resource inventory data required for effective management. Conventional inventories can contribute to information on NTFR distribution but do not address seasonally-specific species or productivity. There is some progress, such as standardized non-timber rating codes, but more empirical and expert information is required.**

Non-timber forest resources (NTFRs, also referred to as non-timber forest products [NTFPs]) provide critical wildlife forage and habitat, as well as cultural, subsistence and recreation values, and they help support diverse and resilient communities. Many communities, both First Nations and non-First Nations, depend heavily upon these resources for their livelihoods. There is anecdotal information to suggest that commercial interest in many of these species is increasing, which brings opportunity for economic diversity but also increases pressure on the resources, particularly when combined with other activities such as development, logging, and mining. British Columbia (BC) currently does not have sufficient NTFR inventory data, and there is no provincial system to collect or manage information on the resource bases or harvest rates. Further, BC does not issue permits, collect information on, or monitor current NTFR harvest, and therefore does not compile any permit-based intelligence or range and distribution estimates.<sup>i</sup> A lack of understanding of species-specific harvest levels, combined with lack of baseline inventory, hinders the ability to assess the requirement – or lack thereof - for regulation. As commercial, recreational and even cultural demand for NTFRs increase, there is an increasing potential for conflict, and an increasing need for government oversight of the resources, but the basic information required is lacking. There are also opportunities to incorporate NTFR objectives into overall resource management plans, but again there is insufficient information on habitat suitability for productivity or response to stand manipulations. BC is thus foregoing opportunities for habitat enhancement (e.g. compatible management for both timber and non-timber values) and for management options that would optimize multiple values and that would recognize and serve a range of stakeholders. For rare or particularly valuable species, inventory information is needed to support conservation objectives. For example, American ginseng (*Panax quinquefolium*) and wild leek (*Allium tricoccum*) populations have been found to be locally threatened from overharvest in central Canada<sup>ii</sup> and there is concern in BC that commercial harvest of species such as devil's club (*Oplopana horridus*), which is considered a 'cultural keystone species', may threaten local populations<sup>iii</sup>. BC does have a number of conventional inventories which can contribute to information on NTFR distribution. Ecosystem mapping (Predictive Ecosystem Mapping and Terrestrial Ecosystem Mapping) have been conducted in areas around the province, and the development of the Biogeoclimatic Ecosystem Classification (BEC) has resulted in thousands of vegetation

sample plots. Forest cover inventory, such as Vegetation Resource Inventories, can provide information on the overstory, and models such as Terrain Resource Information Management (TRIM) can provide information on topography and base features. These inventories provide an opportunity to use existing information to better understand NTFR attributes, as well as adapt data collection to include new information.

All of the conventional inventory data, though, have limitations on their application as NTFR inventories. These inventories were developed to focus primarily on forest timber production, and data is sometimes insufficient for non-forested ecosystems.<sup>iv</sup> Further, sampling for BEC has traditionally focused on mature to climax ecosystems. As the understory vegetation is highly dependent upon the overstory, the structural stage of the forest has a large effect on the occurrence and productivity of the NTFR species.

One of the primary limitations in using conventional inventory data is that the habitat suitability for plant occurrence does not necessarily reflect the habitat suitability for productivity, or quality.<sup>v</sup> For example, based on habitat suitability, the predicted cover of salal (*Gaultheria shallon*) on the coast is quite ubiquitous. However, it has two NTFR uses; the foliage is used as a floral greenery and the fruit is an important food supply for people and wildlife. The site and stand conditions required for floral greenery (e.g. approximately 70% canopy cover) are very different from that required for berry production (e.g. partial to full sun), and high productivity is not necessarily associated with the highest mean cover.<sup>vi</sup> Current inventories do not address these differences, and therefore cannot predict overall cover or potential productivity of NTFRs.

There is some progress on developing specific NTFR inventories. There have been inventory projects for specific species in specific areas.<sup>vii viii</sup> Although the reports are readily available, the data collected is not kept within a provincial repository and therefore may not be readily accessible.

On a broad scale, there is a fair degree of information, knowledge and tools which can be cobbled together on a case by case basis to achieve a better understanding of the potential NTFR resources in an area. This would include layering the different conventional inventories, such as TEM/PEM, VRI, and TRIM, as examples, to enable GIS queries which encompass both predicted cover of the species in general as well as a number of specific predictive attributes required for NTFR quality/productivity (e.g. canopy cover, structural stage, leading species, elevation, aspect, etc.). This is a time-consuming and exploratory approach, with a requirement to assess each species individually, consult local knowledge or literature for contributing attributes, and conduct some level of ground-truthing.

A system of standardized non-timber rating codes (NT codes) is currently being developed which is designed to be used within conventional inventories. The NT codes are included within the revised Field Guide to Terrestrial Ecosystems.<sup>ix</sup> This coding provides for a NT rating to be collected and recorded as part of the vegetation data. This inclusion would enable a centralized repository of NT inventory data which could be accessed for use, analysis, and modeling. The NT codes remain in infancy, however, with more species and specifications required.

Baseline inventories and long-term monitoring are required in order to adequately understand the distribution and quantity of NTFRs. Although enough information is likely available to understand the NTFR component of some species through current inventories (e.g. birch), other species are seasonally specific and excluded from current inventories (e.g. mushrooms), or rely

on more detailed information to predict productivity (e.g. berries). Inventory and assessment of NTFRs is complicated by high variations in annual productivity, which in turn is compounded by increasing climate change effects such as severe weather events. Without this information though, BC is not in a position to claim sustainable forest practices.

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## Literature

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