# Among the Trees;

## Knowledge and Management of

## Non-Timber Forest Products

**Susie Dain-Owens**
**December 11, 2007**
**RMES 500Q**
**Dr. Charles Menzies**

## Introduction

While British Columbia, and indeed the entire Pacific Northwest, is known for its lucrative timber industry, little attention has been paid to the emerging non-timber forest product (NTFP) industry. Non-timber forest products are resources such as salal (a leafy shrub), huckleberries, pine mushrooms, ferns, beargrass, and other plants thriving in the Coastal Western Hemlock floristic zone. Salal branches end up in the floral greens market, while mushrooms are exported via wholesalers to hungry buyers in Japan. As of 1991, the Pacific Northwest non-timber forest products industry was valued at over $100 million, and employed over 10,000 people (Ballard & Huntsinger 2006: 536). However, "increasing the harvest of non-timber products may provide income sources for increasing numbers of people, lead to interethnic conflict, or threaten the targeted species and the ecosystems of which they are a part" (Hansis 1998: 69).

While provincial regulation does not currently exist in Canada, permits and license systems aim to control harvesting on private and public lands (except provincial parks), and vary by region (Gamiet, et al. 1998: 17). In Washington, "commercial harvesting is not allowed in national parks and some tribal lands, but takes place to some degree on all the other ownership types" (Ballard & Huntsinger 2006: 533).

Harvesters are often migrant or immigrant populations, though First Nations and other local populations are entering this industry as well. For example, in Saskatchewan the Lac La Ronge First Nation owns the company Northern Lights Foods, which sells non-timber products such as wild mushrooms (Ascher 2004). In northern British Columbia, the Gitksan and Nisga'a Nations participate in the pine mushroom industry; a process that demonstrates the dynamic and adaptive nature of traditional ecological

knowledge. In Washington State, "migrant and immigrant workers are a large part of the forestry and forest-dependent workforce, yet are not often part of the public, community, or stakeholder participation process" (Ballard & Huntsinger 2006: 530).

Conflicts often occur between mushroom pickers and between locals and migrant populations, especially over access to harvest patches. Some conflicts have become violent (Gamiet, et al. 1998; Hansis 1998). Regulations could help prevent such conflicts, and some First Nations communities have created monitoring positions in their territories, for example the Haisla Nation watchmen in B.C. (Gamiet, et al. 1998: 18).

Non-timber forest products harvesters have a lot to offer forest managers who have little knowledge about the "ecological, social, and economic impacts of harvesting high value" resources (Ballard & Huntsinger 2006: 530). In this paper I will discuss the nature of the emerging bodies of knowledge surrounding NTFP harvesting, how harvesters can contribute to management planning, and how this can be implemented fairly according to all stakeholders. I draw upon examples from Northern B.C. and Western Washington, focusing on pine mushroom and salal harvesting.

**Knowledge**

Discussions of traditional ecological knowledge (TEK), indigenous knowledge (IK), and local ecological knowledge (LEK) have been increasing in the literature over the past few decades. I will examine predominant definitions in an attempt to differentiate between them. What is the difference between indigenous, or "traditional," and "local" ecological knowledge?

According to Ballard and Huntsinger (2006) local ecological knowledge refers to the "local expertise of peoples that may not have a long-term relationship with the local environment, but nevertheless have local wisdom, experience, and practices adapted to local ecosystems" (Ballard & Huntsinger 2006: 531). Similarly, Davis and Wagner (2003) define local knowledge as constituting "a 'body' and a 'system' of understandings and know-how that arise through time from…individual and shared experiences and observations, mediated by culture, with regard to environmental factors, behavioral attributes, and ecological dynamics" (Davis & Wagner 2003: 477).

On the other hand, Fikret Berkes (1999) presents a definition of traditional ecological knowledge (also referred to by Ballard and Huntsinger):

> "A cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment." (Berkes 1999: 8)

Menzies (2006) explains that traditional ecological knowledge is "best understood as experiential knowledge resulting from human/environment interactions…[it] is an embodied practice directly rooted in everyday livelihood activities" (Menzies 2006: 88). According to Menzies and Butler (2006), traditional ecological knowledge has essential characteristics; it is cumulative and long-term, dynamic, historical, local, holistic, embedded, and moral and spiritual (Menzies & Butler 2006: 7). Indeed, "to ignore the dynamic nature of ecological knowledge…is to maintain a colonial ideology that locks Indigenous people outside of history and ultimately denies them their humanity" (Menzies 2006: 102). Knowledge, as a way of life, changes along with the culture in which it is embedded.

When relating these concepts to the non-timber forest products industry, we see that local indigenous communities harvest mushrooms in a way not done before contact (Menzies 2006). Their knowledge and beliefs surrounding these practices still qualifies as traditional ecological knowledge; migrant salal harvesters who build broad knowledge base from much shorter-term interactions with the land and resources would fall under the category of local ecological knowledge.

Ballard and Huntsinger ask: "Does livelihood dependence…result in extensive ecological knowledge held by migrant harvesters that may only harvest in the area seasonally and/or have only lived in the area for one generation?" (Ballard & Huntsinger 2006: 532). The answer to this question lies not in debating semantics but in addressing the epistemologies of the communities. The point is that both groups of people have gained wisdom about harvesting resources through continued interaction with individual species and the ecosystem as a whole. However, the nature of this knowledge might differ based on the history and spiritual views of the communities. Among harvester communities, long-term might mean since time immemorial, for a handful of generations, or for just 10 years.

***Salal***

Ballard and Huntsinger interviewed migrant and immigrant salal harvesters, of predominantly Southeast Asian and Latino origin, in Western Washington. They discovered that harvesters have knowledge about the environment where salal grows; about relationships between species in the canopy and understory, plant identification, successional forest processes, and the affects of logging on salal. Furthermore, harvesters

with eight or more years experience had "distinctly more detailed answers" when asked about salal harvesting (Ballard & Huntsinger 2006:538). They also realized that differences in harvest amounts existed between harvesters. Those with more experience practiced more sustainable harvesting, as they looked further into the future. For these harvesters, long-term meant more than simply until the next season. The less experienced harvesters removed "proportionally more biomass than more experienced harvesters" (Ballard & Huntsinger 2006: 540). Strategies used by salal harvesters included multiple species management, resource rotation, and succession management (Ballard & Huntsinger 2006). Harvesters transmitted this knowledge to other harvesters, usually through friends and relatives, by harvesting together (Ballard & Huntsinger 2006).

***Pine Mushroom***

In Tsimshian, Nisga'a, and Gitksan pre-contact traditional practices, mushrooms were a marginal food or medicine source (Menzies 2006: 93). However, First Nations in interior and southern B.C. used species of mushrooms much more extensively (Kuhnlein & Turner 1991). Now mushrooms have entered the non-timber forest product industry as a major commodity. Menzies describes how "a pine mushroom TEK has emerged that is simultaneously 'traditional' and 'contemporary,'" and how local knowledge has adapted to meet the demands of the new industry (Menzies 2006: 94).

With First Nations in northern British Columbia, knowledge surrounding the pine mushroom industry relates to specific ecological relationships between species, locations of species, harvesting methods, as well as economic knowledge, including market prices

(Menzies 2006: 96). These First Nations harvesters have adapted their ecological knowledge of their territory and the plants and animals in it to affectively harvest pine mushrooms. Their beliefs also guide them in how to treat the mushroom harvesting areas with "care and respect" (Menzies 2006: 97). These harvesters have applied methods and values from other species to the mushroom industry, including ownership of harvesting patches (Menzies 2006). For example, "contemporary knowledge parallels customary knowledge through a similar relationship to customary land use and governance systems," but it differs from customary knowledge "with respect to the different socioeconomic context within which mushroom harvesting occurs" (Menzies 2006: 99). This case study shows the dynamic nature of traditional ecological knowledge, and "provides an example of how ecological knowledge is transformed in the context of changing socioeconomic practices" (Menzies 2006: 101). This leads one to ask: How can outside management bodies collect and extract knowledge of this nature? Surely the people who live the knowledge (i.e. the harvesters) should be present when management decisions are made, and should be play a central role in developing regulations for the non-timber forest product industry.

**Implications for Management**

Both Canada and the United States do not have very firm regulations in place for non-timber forest products harvesting. While some harvesters are happy with the hands-off approach, others are upset (Avery 2004). However, it is clear that both groups wish to have more input into the rules surrounding their choice of employment; "whatever resentment exists between the different groups of harvesters is outweighed by their

resentment of forest practices which do not consider their needs" (Hansis 1998: 82). However, land managers cite that, "time constraints, lack of confidence with government, and language and other cultural barriers make it difficult to reach out to all affected groups" (Hansis 1998: 85).

The government of British Columbia has failed to regulate pine mushroom harvesting (Menzies 2006: 95). In northern BC, however, the Nisga'a Tribal Council has been successful in implementing management strategies in mushroom picking areas in their traditional territory (Menzies 2006: 95). However, Menzies notes that a handful of major export firms control the pine mushroom market and can take advantage of various regions in the province according to productivity levels. The report prepared for the Northwest Institute for Bioregional Studies lists ways that harvesting could negatively impact the sustainability of the pine mushroom. Scientific research looking at the ecology of the pine mushroom, as well as the impacts of mushroom and timber harvesting on pine mushroom abundance and sustainability, will contribute to sound management of this resource. Similar projects could be put in place for salal as well.

Ballard and Huntsinger argue that "it is important that the experienced harvesters have an opportunity to communicate knowledge to fellow harvesters as well as to scientists and managers," and that "the degree of understanding of ecological processes possessed by these harvesters attests to the human ability to observe and analyze ecosystems and how they work" (Ballard & Huntsinger 2006: 543). In the early 1990s, various committees and task-forces materialized. Workshops were held to encourage sustainable harvesting, to educate, raise awareness of pine mushroom ecology, to provide a forum for concerns to be voiced, and ultimately to give recommendations for the

regulation of the industry (Gamiet, et al. 1998: 13). These sorts of programs and management bodies should be implemented for the entire non-timber forest product industry, to allow for all stakeholders to participate in management, and to increase the capacity of harvesters. Holding workshops and forums must be done in such a way to encourage participation and conflict resolution.

In such studies where local knowledge is drawn upon for creating community based management plans, Davis and Wagner emphasize the need to design clear methodologies that will "produce research results that will thoroughly represent the breadth, depth, and comparability of LEK, while positioning the research outcomes to withstand rigorous public inspection" (Davis & Wagner 2003: 466). They conclude that a successful research methodology includes identifying local knowledge experts through peer recommendations:

> "Peer-referenced, systematic identification of local experts assures that those considered most knowledgeable within either the local community, social group, or livelihood fraternity will be revealed and potentially included in work dedicated to documenting the LEK system." (Davis & Wagner 2003: 484)

Furthermore, they stress the importance of "assigning the highest reliability to information that has been verified by *several* local experts" (Davis & Wagner 2003: 485). When designing such a study to consult with NTFP harvesters about management plans, management bodies should follow Davis and Wagner's recommendations.

**Conclusion**

Great potential exists for the cooperative management of non-timber forest products on both First Nations' territories and public lands in the Pacific Northwest. We

have seen how knowledge is created, adapts to changing conditions, and can differ based on a community's relationship to the land. The emergence of the pine mushroom industry "opens up the possibility of a return to more direct control over natural resources and land by First Nations in their home territories" (Menzies 2006: 99). This could also be a way for First Nations communities to perpetuate connections with their lands and resources, while increasing economic opportunities and capacity among their people. Management processes of non-timber forest products should include all stakeholders, be the harvesters indigenous, immigrants, or non-indigenous locals. With a more regulated industry, perhaps more communities could turn to non-timber forest products as an alternative to large-scale logging activities.

**Bibliography**


Ascher, Avery. 2004. Under the Canopy. *Alternatives Journal* 30(3): 28-30.

Ballard, Heidi and Lynn Huntsinger. 2006. Salal Harvester Local Ecological Knowledge, Harvest Practices and Understory Management on the Olympic Peninsula, Washington. *Human Ecology* 34(4): 529-547.

Berkes, Fikret. 1999. Sacred Ecology; Traditional Ecological Knowledge and Resource Management. Philadelphia: Taylor and Francis.

Davis, Anthony, and John Wagner. 2003. *Who* Knows? On the Importance of Identifying "Experts" When Researching Local Ecological Knowledge. *Human Ecology* 31(3): 463-489.

Gamiet, Sharmin, H. Ridenour, and F. Philpot. April 1998. "An Overview of Pine Mushrooms in the Skeena-Bulkley Region" Prepared for The Northwest Institute for Bioregional Studies.

Hansis, Richard. 1998. A Political Ecology of Picking: Non-Timber Forest Products in the Pacific Northwest. *Human Ecology* 26(1): 67-86.

Kuhnlein, Harriet, and Nancy Turner. 1991. Traditional Plant Foods of Canadian Indigenous Peoples: Nutrition, Botany, and Use. New York: Gordon and Breach.

Menzies, Charles and C. Butler. 2006. "Introduction: Understanding Ecological Knowledge." In Traditional Ecological Knowledge and Natural Resource Management. Lincoln: University of Nebraska Press.

Menzies, Charles. 2006. "Ecological Knowledge, Subsistence, and Livelihood Practices; The Case of the Pine Mushroom Harvest in Northwestern British Columbia." In Traditional Ecological Knowledge and Natural Resource Management. Lincoln: University of Nebraska Press.