

“Where our women used to get the food”: cumulative effects and loss of ethnobotanical knowledge and practice; case study from coastal British Columbia¹

Nancy J. Turner and Katherine L. Turner

Abstract: Knowledge and practices of indigenous peoples relating to local plants used for food, medicine, materials, and other purposes are threatened in many parts of the world. The reasons for declining knowledge and use of traditional resources are complex and multifaceted. We review a series of case examples of culturally valued food plants in British Columbia and identify a suite of interacting social and environmental factors that have resulted in decreased use of and dwindling cultural knowledge about these plants over the past 150 years. Reasons for this loss include compounding influences of changing knowledge systems owing to religious conversion and residential schools, loss of indigenous languages, loss of time and opportunity for traditional practices owing to participation in the wage economy, increasing urbanization of indigenous populations, loss of access to traditional resources, restriction of management practices for sustaining these resources, and most recently, forces of globalization and industrialization. Efforts to renew and restore traditional practices and relationships with plants and environments must recognize the cumulative effects of these factors and find ways to retain and reinforce the knowledge and practices still held by individuals and communities, to reverse some of the negative influences on cultural retention, and to develop new, relevant, and effective ways to revitalize languages, cultures, and ethnobotanical knowledge within contemporary contexts.

Key words: indigenous peoples, ethnobotany, British Columbia, traditional food, food security.

Résumé : Les connaissances et les pratiques des peuples indigènes, concernant les plantes locales utilisées comme aliments, médicaments, matériaux et autres usages, sont en danger dans plusieurs parties du monde. Les raisons pour le déclin des connaissances et de l'utilisation des ressources traditionnelles sont complexes et multiples. Les auteurs revoient une série de cas types de plantes alimentaires culturellement importantes en Colombie Canadienne et identifient un ensemble de facteurs sociaux et environnementaux interactifs, qui ont conduit à une diminution de leur utilisation et à une disparition de la connaissance culturelle au sujet de ces plantes, au cours des 150 dernières années. Les raisons pour cette perte incluent des influences interactives liées au changement de systèmes de connaissance dû à la conversion religieuse et aux écoles résidentielles, à la perte des langages indigènes, à la perte d'opportunité et de temps pour les pratiques traditionnelles liées à la participation à l'économie salariale, l'augmentation de l'urbanisation des populations indigènes, la perte d'accès aux ressources traditionnelles, les restrictions des pratiques d'aménagement pour maintenir ces ressources, et plus récemment, les forces de globalisation et d'industrialisation. Les efforts pour renouveler et restaurer les pratiques traditionnelles, et les relations avec les plantes et l'environnement, doivent tenir compte des effets cumulatifs de ces facteurs et trouver les moyens de retenir et de renforcer la connaissance et les pratiques encore détenues par les individus et les communautés, de renverser certaines des influences négatives sur la tradition culturelle, et de développer de nouvelles façons efficaces et pertinentes pour revitaliser les langages, les cultures et les connaissances ethnobotaniques, dans un contexte contemporain.

Mots-clés : peuples indigènes, ethnobotanique, Colombie Canadienne, aliments traditionnels, sécurité alimentaire.

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Introduction

And this whiteman he immediately put a fence around the place [in Kingcome River estuary] enclosing the place

where our women used to get the food ... Chief Cesaholis, address to Royal Commission on Indian Affairs for the Province of British Columbia, 4 June 1914.

Dietary change is common to humans all over the world.

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N.J. Turner² and K.L. Turner. School of Environmental Studies, P.O. Box 1700, University of Victoria, Victoria, BC V8W 2Y2, Canada.

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²Corresponding author (e-mail: nturner@uvic.ca).

Indeed, few societies subsist on diets identical to those of 500 years ago; new foods are added and old foods may be replaced or diminish in importance. However, when change in diet is profound, when it happens precipitously over the span of only a few decades, and when coercive sociopolitical, environmental, and economic pressures are at play during this period of transformation, there can be serious repercussions for peoples' health and well-being (Parrish et al. 2007). This has happened to the indigenous peoples of British Columbia — and all across Canada — and as a result both their food sovereignty³ and food security⁴ have been undermined. Along with the loss of the food itself, perhaps even more serious is the loss of the cultural knowledge relating to the production, harvesting, processing, and use of the food — the knowledge that has sustained generations of people in their home territories for thousands of years (Deur and Turner 2005).

The arrival of colonial powers, and with them European attitudes, had an immense and complex impact on the Canadian First Peoples and their diets. Plant foods — greens, inner bark, fruits, root vegetables, and beverages — were among the most affected. Of the approximately 100 species of plant foods that were harvested traditionally by indigenous peoples of coastal British Columbia, the majority are no longer used, and many are not even known to the younger generations. Why did indigenous people stop eating their traditional plant foods? The story of the loss of the root gardens at Kingcome Inlet, as alluded to in the introductory quote, provides some insights.

In June 1914, Hereditary Chief Cesaholis of the Tsawataineuk Tribe of Kwakwaka'wakw at Kingcome Inlet on the mainland coast of British Columbia made a poignant address before the Royal Commission on Indian Affairs for the Province of British Columbia (the McKenna–McBride Royal Commission). This Commission had been established in 1912 by Canadian Prime Minister Borden with Premier Richard McBride of British Columbia and James McKenna, an official of Indian Affairs, to investigate and attempt to resolve ongoing concerns of aboriginal people regarding their lands and resources and make recommendations about the extent, location, and number of Indian reserves. Throughout the province of British Columbia, indigenous people were interviewed regarding their concerns about land use, and inevitably, the people raised the issue of loss of their traditional food. The quotation at the beginning of this section is a short segment of a much longer address describing how the traditional food gathering areas of the Tsawataineuk had been appropriated by white settlers:

At the mouth of our river on both sides ... a man by the name of McKay came to build his house on that place. ... This McKay took for himself the land where our forefathers always got their food. ... where the women used to take the roots out of the ground. ... They put down stakes [to] mark the boundary lines for each one, and to our surprise this whiteman came and just took the place and ... our women were surprised to be ordered away

from that place and they don't know why they were ordered away ... (Cesaholis 1914)

Matters went from bad to worse in this account, as the women from the village along the south side of the Kingcome River continued to try to access their traditional root gardens, where they cultivated and harvested a number of root vegetables, including springbank clover (*Trifolium wormskioldii* Lehm.), Pacific silverweed (*Potentilla pacifica* Howell), northern riceroot (*Fritillaria camschatcensis* (L.) Ker Gawl.), and Nootka lupine (*Lupinus nootkatensis* Donn ex Sims) (Turner 1995; Turner and Peacock 2005). McKay summarily confiscated the women's root-digging sticks and baskets and then enclosed the property:

... [The women] persisted to go to that place to get the food. Each woman had a wooden spade and a basket. The spade was to take up the roots, and the basket was to carry the roots, and these were taken from them and thrown away by this whiteman, and this whiteman he immediately put a fence around the place enclosing the place where our women used to get the food, and for the first time then we come to know the troubles that we are in now in our own land, and when the food of my people grew on that place ... (Cesaholis 1914)

The new settlers imported livestock, and these took their toll on the root-digging grounds.

... and then the animals of the whiteman, such as the pigs and cattle would come and eat it off; and then my forefathers and the women got tired and gave it up when they saw their food was destroyed by the cattle ... (Cesaholis 1914)

Other valued foods were also destroyed, most notably their Pacific crabapples (*Malus fusca* (Raf.) Schneid.):

Apart from this place where they used to dig for roots was the growth of trees that is where the crab apples grow — whiteman came and cut all that down, and the women gave that up also; that is they got tired; it was useless of going there any more to gather the fruits that grew on these trees. These two foods that I have described are now destroyed entirely by the whitemen and these foods were valued very much; it was worth so much among all our Indians that it used to be preserved in boxes to keep all through the winter. (Cesaholis 1914)

More and more, the white settlers encroached on the Tsawataineuk lands, cutting down their trees, and allowing the settlers' pigs and cattle to trespass on the reserve, eating up the Tsawataineuk Peoples' precious oulachens (*Thaleichthys pacificus* Richards., a small smelt, rendered into a nutritious fat, known as "grease"), and trampling their European-style vegetable gardens behind their houses: "[We] asked them to keep their cattle at home, but they never pay any attention to whatever we say to them" (Cesaholis 1914).

This story is not unique; all over the province and beyond, indigenous peoples were experiencing similar alienation of their lands and food resources. There were other factors at play as well, however, and here we focus on the cumulative effect of multiple factors influencing the loss of

³Food sovereignty is defined as the ability to make substantive choices about food consumption. This includes what types of foods are eaten and where, how, and by whom they are produced (World Food Summit 1996).

⁴Food security, as defined at the World Food Summit (1996), exists when all people, at all times, have physical and economic access to safe and nutritious food that meets dietary needs and food preferences in sufficient quantity to sustain an active and healthy lifestyle.

traditional food systems. To better understand the interacting impacts, we have selected five case examples of plant foods that were formerly important in Northwest Coast First Peoples' diets, and for each, we examine the range of factors contributing to their reduced use.

Case examples

Our case examples include two “root vegetables” [camas (*Camassia* spp.) and springbank clover (*Trifolium wormskoldii*)], one marine alga [red laver (*Porphyra abbottiae* Krishnamurthy)], one fruit [Pacific crabapple (*Malus fusca*)], and one green vegetable [thimbleberry shoots (*Rubus cuneifolius* Pursh)]. All were formerly harvested and eaten in large quantities by coastal First Peoples, and all have diminished significantly in their use, although *Porphyra* is still quite widely harvested. These foods are generally representative of the broader range of traditional plant foods of Northwest Coast First Peoples (Kuhnlein and Turner 1991; Turner 1995). Each food was once used by many indigenous groups throughout the range of the species, and each has had significant ecological and cultural knowledge associated with its harvest, processing, and serving. Each was known to have been traded and used as gifts and to be associated with particular stories or ceremonies. Each could be considered at one time a “cultural keystone species” over all or part of their ranges (Garibaldi and Turner 2004). Now, each fits the criteria for the designation of “culturally at risk”, according to the categories of threat to traditional foods outlined in Nabhan (2006, preliminary pages).

We first provide brief overviews of these foods and their cultural importance, with attention to particular events or factors influencing the intensity of use. Drawing on these examples, we identify common factors that have contributed to the decreasing use of traditional plant foods in general in coastal British Columbia and discuss the implications of dietary change. Finally, we suggest steps to be taken to reinstate traditional food systems in a contemporary context.

Blue camas

One hundred and fifty years ago, camas [*Camassia quamash* (Pursh) Greene and *Camassia leichtlinii* (Baker) S. Wats.; Hyacinthaceae, formerly Liliaceae] was the “queen root” and “number one vegetable” for the Saanich, Songhees, and other Coast Salish Peoples on southern Vancouver Island (Beckwith 2004), as well as in many other regions throughout the range of these two species (Turner 1995) (Figs. 1 and 2). The bulbs filled a vital dietary niche as a principal carbohydrate, as well as a valuable source of dietary fiber, vitamins, and minerals (Kuhnlein and Turner 1991; Turner and Kuhnlein 1983). The role of camas in Straits Salish society, however, extended well beyond simple nutrition. Activities surrounding camas — harvest, preparation, and consumption — were vital sites for Coast Salish knowledge and cultural transmission between generations. As with other “wild” root vegetables (Anderson 2005; Deur and Turner 2005), camas patches were tended, being cleared and burned over routinely to maintain the prairies and promote productivity (Boyd 1999). Prime patches were considered the property of particular Coast Salish families, passed down through generations, and individuals within these fam-

Fig. 1. Common camas (*Camassia quamash*) flowers. Photograph courtesy of Dr. Brenda Beckwith.



Fig. 2. Common camas (*Camassia quamash*) bulbs.



ilies undertook the responsibility for caring for the plots and overseeing their harvest (Jeness 1934–1935; Suttles 2005; Turner et al. 2005). Coast Salish cultures and lifeways are described by Suttles (1987); people resided in permanent winter villages mostly situated along the coast, and then throughout the growing season, they moved to different resource harvesting sites, camping for weeks at a time, and harvesting and processing a variety of foods and materials. Women, children, and small family groups harvested camas bulbs in early summer and cooked them in underground pits, which helped to convert the main carbohydrate inulin, a complex and indigestible sugar, into fructose and fructans, which are sweeter and more digestible. Once cooked, the bulbs were consumed or dried for winter use and trade. Gunther (1945) noted that aside from salmon, in western Washington no food was more widely traded than camas. In British Columbia, camas bulbs were eaten at family meals and at feasts and potlaches. They were traded to the west coast of Vancouver Island and north beyond their range into Kwakwaka'wakw territory (Turner 1995). There is also evidence that the bulbs were transplanted, even outside of their natural range, to make them more widely accessible (Turner and Peacock 2005). The bulbs were harvested seasonally by families into at least the early 1900s (Jeness 1934–1935), although Beckwith (2004) notes that people were probably having to venture much farther away to obtain the bulbs than formerly, as most of the prime productive prairie lands where they would have been most readily obtainable were taken over by Europeans for settlement and agriculture. Additionally, from the mid-1800s, the potato (*Solanum tuberosum*) was being grown in garden plots all over the northwest coast (Suttles 1951), and it soon replaced camas and other root vegetables for the majority of meals.

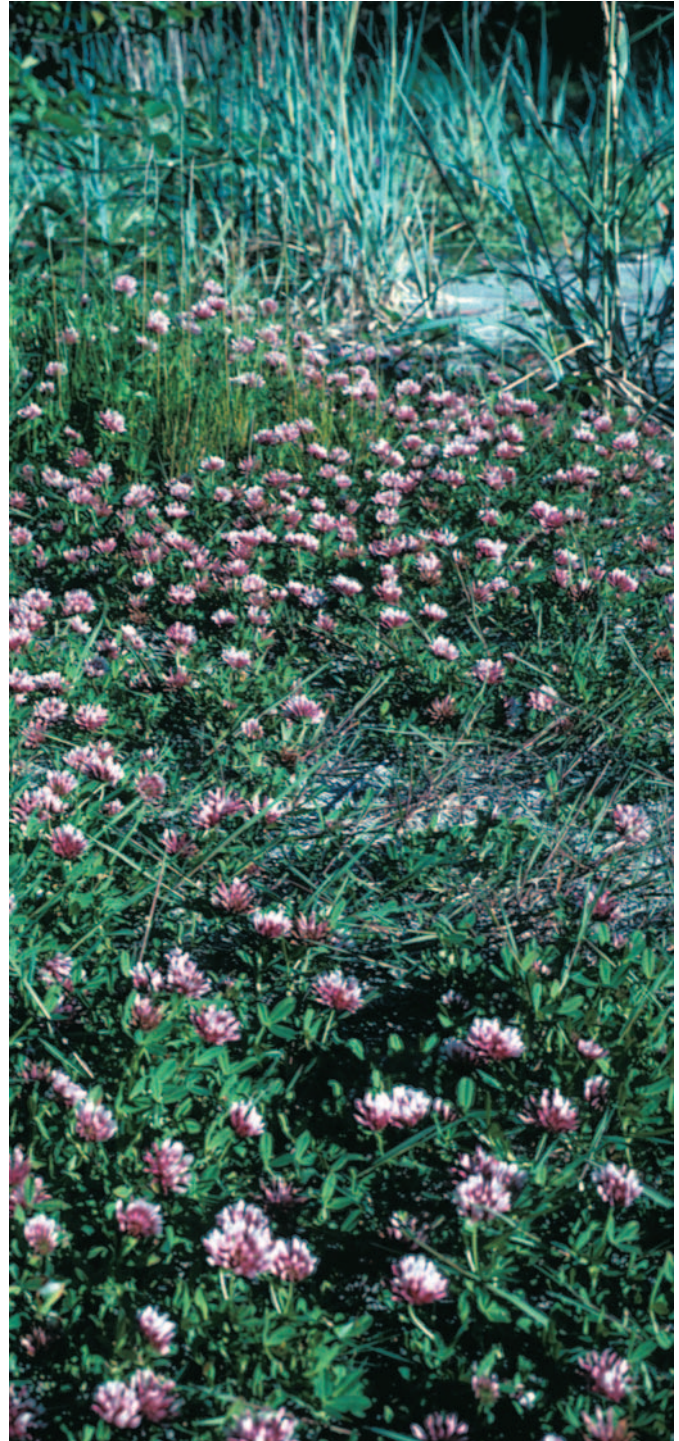
By the 1960s, only a few people were still harvesting and cooking camas, and then only on a limited basis. For example, Christopher Paul was growing camas bulbs in his garden at Tsartlip on the Saanich Peninsula and serving them at the Saanich “Indian days” fair in the mid-1960s and earlier (Turner and Bell 1971). However, subsequent generations of Saanich did not continue this practice. Tsawout elder Elsie Claxton, for example, remembered her mother talking about camas, and Elsie had tasted the bulbs as a child, but she had never harvested them and did not know what the plants looked like (personal communication to N. Turner, 4 October 1996).

Springbank clover

The harvesting of clover “roots” (*Trifolium wormskioldii* Lehm.; Fabaceae) (Figs. 3 and 4) by Nuuchah-Nulth women at Tahsis was chronicled by Archibald Menzies, naturalist on Captain George Vancouver’s voyage around Vancouver Island in 1792:

In the evening our curiosity was excited in observing a number of Females busily occupied in digging up a part of the Meadow close to us with Sticks, with as much care and assiduity as if it had been a Potato field, in search of a small creeping root ... of a new species of Trifolium which they always dig up at this time of year for food ... Wherever this Trifolium abounds the ground is regularly turned over in quest of its Roots every year. (Newcombe 1923, p. 116)

Fig. 3. Springbank clover (*Trifolium wormskioldii*) flowers.



Mentioned previously as one of the foods harvested by the Tsawataineuk of Kingcome Inlet, this clover was a much-favoured root vegetable all along the northwest coast (Edwards 1979; Kuhnlein et al. 1982; Turner and Kuhnlein 1982; Turner 1995; Deur and Turner 2005). It was formerly common along shorelines and in estuarine marshes, often growing together and harvested with Pacific silverweed (*Potentilla pacifica*). Clover Point in Victoria is named after this plant (Turner 1999). The thin, whitish rhizomes, which

Fig. 4. Springbank clover (*Trifolium wormskioldii*) rhizomes.



taste somewhat like bean sprouts, were pried from sandy soil usually in the fall after the leaves had died back and were tied in bundles and steamed or pit-cooked. They were eaten fresh at family meals or feasts and were sometimes dried for storage or trade (Boas 1921; Turner 1995).

Drucker (1951) describes a Nuu-Chah-Nulth root feast in which the clover roots were piled so high for cooking that men had to climb up on the roof of the house to pour the water used to steam them. The longest roots were reserved for chiefs and high-class people (Boas 1921). Clover rhizomes were sometimes transplanted from place to place and were perpetuated in situ by replanting fragments of the rhizomes. They were “tended” in plots that were marked off and owned by individuals and families. They were weeded and maintained for generations (Deur and Turner 2005). Ducks and geese are known to like this clover, and sometimes the rhizomes were used as bait for hunters (Edwards 1979). Clover populations have diminished in many areas because of overgrazing by cattle, industrial development on estuaries, and impacts of introduced species, including European white clover (*Trifolium repens* L.) (Turner and Kuhnlein 1982; Turner 1999). Today, only a very few elders, e.g., Chief Adam Dick (Kwaxistala), remember this clover (called *texwsús*) and are able to identify it. As a food, it has essentially become extinct on the coast (Nabhan 2006).

Edible seaweed

Red laver (*Porphyra abbottiae* Krishnamurthy) (Fig. 5) is the most heavily used of several *Porphyra* species to be harvested and eaten on the northwest coast (Turner 2003). Generally harvested in the spring [May is called “the month of seaweed” in the Gitga’at dialect of Sm’algyax (Tsimshian)], it is still used by many people, especially on the central and northern coasts, but the quantity has diminished significantly. It is pulled from the rocks at low tide and then sun-dried in squares. It is not picked in the rain; this would make harvesting too dangerous, the seaweed would taste bad, and it could not be dried properly once harvested. There are various taboos prohibiting seaweed harvesting, including for the Gitga’at, not picking cedarbark or giant mussels at the time seaweed is being picked (Turner 2003; Turner and Clifton 2006). The dried seaweed is traditionally

Fig. 5. Helen Clifton drying red laver seaweed (*Porphyra abbottiae*) at Hartley Bay.



further processed by redampening it with saltwater, pressing it into cedarwood boxes in layers, and leaving it to “get its flavour” for 3 days or so (probably resulting in some level of fermentation), and then chopping it into small fragments and redrying it in the sun. The dried seaweed is stored in watertight containers and is served at family meals and feasts, and as well as being a common gift and trade item. This seaweed features in origin stories and is valued as a medicine for digestive problems and sore joints among other ailments (Turner 2003).

As with other foods, harvesting and use of seaweed has undergone many changes over the past 150 years or so. Until quite recently, entire families and communities went to traditional spring seaweed camps and stayed for a month or more. Formerly, women were the usual harvesters of edible seaweed, while the men fished for halibut (*Hippoglossus stenolepis* Schmidt) and spring salmon (*Oncorhynchus tshawytscha* Walbaum). The women traveled to the harvest sites along the rocky coastline in dugout cedar canoes and used cedarbark bags and cedar boxes as containers for harvesting, processing, and storing the seaweed. Now speedboats are used, and men participate in the harvest or sometimes go out and harvest it for their families on day trips from the main village. First gunnysacks and then nylon onion sacks replaced cedarbark bags as seaweed containers, and once

dried, the seaweed is stored in plastic totes with lids. Many people freeze the seaweed until they are able to dry it properly, and they use plastic freezer bags with zipper closures for storage. Offshore pollution from pulpmills and domestic sewage has been identified as one reason why many people do not harvest seaweed as much as formerly (Kim Recalma-Clutesi, personal communication to N. Turner, 2004). The demands of school for children and wage jobs for adults have also reduced peoples' ability to stay for any period of time at the camps where seaweed harvesting was a major month-long activity.

Pacific crabapple

Wild crabapple is called *tsitsih'aqtl-mapt*. It was an important food in the old days. (George 2003, pp. 84–85)

This is the only native apple in British Columbia [*Malus fusca* (Raf.) Schneid.; Rosaceae] (Fig. 6). The fruits are small and produced in clusters. Formerly they were harvested in large quantities in late summer and fall and were cooked slightly then stored under water in cedarwood boxes over the winter. They became softer and sweeter with storage and were a favourite food of children and for serving at feasts. They were often mixed with whipped oulachen grease and served together with highbush cranberries [*Viburnum edule* (Michx.) Raf.] (Turner 1995). Nowadays, crabapples are little used, but some people still pick them for making jelly.

People valued and cared for their crabapple trees as an orchard; in some areas, such as among the Kwakwaka'wakw, individual trees were marked out with cedar stakes to denote a family's ownership. Other people, seeing these stakes, would know not to harvest the fruit (Turner et al. 2005). The First Peoples of the central and northern coast recognized different varieties of crabapples. The Gitga'at, for example, have names for six distinct types based on characteristics of the fruit: colour, size, taste, length of stems, etc. (Turner and Thompson 2006). Crabapples were a valued feast food, and boxes of crabapples served as gifts for weddings and visiting nobility. As recounted in Chief Cesaholis' account in the introduction, white settlers often cut down crabapple trees, either because they did not appreciate the value placed on them by First Peoples or to preclude any "trespass" onto their homesteads by local indigenous people.

Sproat (1987, pp. 43) reinforced the Nuu-Chah-Nulth Peoples' attachment to crabapples:

The natives are as careful of their crab-apples as we are of our orchards; and it is a sure sign of their losing heart before intruding whites when, in the neighbourhood of settlements, they sullenly cut down their crabapple trees, in order to gather the fruit for the last time without trouble, as the tree lies upon the ground.

Crabapple was also valued as a tough, resilient wood used for making digging sticks and other implements and was sometimes used as a fuel. The bark was, and is, used as a medicine for a range of ailments from eye problems to digestive tract problems. Many people feel that crabapple trees and their productivity have deteriorated, and although they are still common, they are far less used than formerly.

Fig. 6. Marjorie Hill of Hartley Bay, sorting Pacific crabapples (*Malus fusca*).



Thimbleberry shoots

I remember going by canoe to the smaller outlying islands near Flores Island. ... *ch'aashxiwa* (thimbleberry shoots) grew in rocky areas along the shoreline. ... You broke off the stem at the bottom, peeled off the skin. It is bright green, watery and very clean, with no prickles, and it is very tasty. The kids used to bring a little sugar along, and dip the end in sugar before they ate it. These shoots only grow in the month of June, or early July. During the season the plant hardens when it becomes part of the branch and then is too woody to eat. The ladies around Ahousaht used to bring in armfuls of *ch'aashxiwa* ... and called the other women to come and help with it. ... The kids used to ask to eat it, and they'd give them a little bit. Men ate some, but very little; it was a belief that this food was for women. They had it with "cheese" made out of fish eggs. (Nuu-Chah-Nulth; George 2003, pp. 76–77)

Thimbleberry shoots [*Rubus cuneifolius* Pursh (syn. *Rubus parviflorus* Nutt.); Rosaceae], and those of the related salmonberry (*Rubus spectabilis* Pursh), were a favourite spring-time food for coastal First Peoples (Fig. 7). They were among the very first fresh greens available after a winter of living mainly from stored food and were an important source of vitamins and minerals, as well as being sweet, juicy, and crunchy. They are snapped off with the fingers, peeled from the bottom to the top, and eaten fresh or some-

Fig. 7. Thimbleberry shoots (*Rubus cuneifolius*).



times cooked. They were so important that some people held a “First Shoots” ceremony, similar to the more common First Salmon ceremony, to give recognition to the spirits of this plant, so that this food would always be plentiful:

Another of these [First Foods] ceremonies was kept in connection with the satske, or young succulent suckers of the wild raspberry (thimbleberry: “*Rubus Nutkanus*”) which the Indians of this region eat in large quantities, both cooked and raw. When cooked, I am told they eat like asparagus. The time for gathering these was left to the judgment and determination of the chief. When ready to gather, he would direct his wife or daughter to pick a bunch and bring them to him; and then, the people all being assembled, a ceremony similar to that connect with the salmon ceremony would take place. After the ceremony anyone might pick as much as he liked. A similar ceremony took place later in the summer, when the berries of this plant were ripe. (Maud 1978, p. 115, from Charles Hill-Tout’s account of Chehalis First Foods ceremonies)

Thimbleberry shoots or “sprouts” are still recalled by many elders today as a favourite food of their childhood, and some younger adults remember them as well, but few children today have tasted them, know how to prepare them, or even know that they are edible.

Discussion

As reflected in these five representative cases, the use of traditional food among Northwest Coast First Peoples has dropped precipitously over the past 150 years, most notably within the lifetimes of the eldest generation, within the past 50–60 years. The reasons for this dietary transformation and the implications of the loss of traditional food in terms of health and erosion of knowledge are important topics to investigate, but neither the causes nor the results are straightforward.

Reduction and loss of traditional food use

Through a complex interplay of colonial pressures and policies, traditional foods were marginalized and their use declined dramatically within the diets of the Northwest Coast First Peoples. With diminished use came an erosion of cultural practices relating to food production, management, preparation, and consumption. For thousands of years before contact with Europeans the coastal First Peoples — and indigenous peoples everywhere — held sovereignty over their food systems and maintained their food security through a rich knowledge of their environment and food resources, including famine foods (Turner and Davis 1993), passed down through oral tradition and longstanding land stewardship and cultivation practices. Availability of these resources was balanced through trade, institutions such as the potlatch, and reciprocity of access to harvest sites (Turner and Loewen 1998).

Primary among the causes of dietary change were European attitudes of racial superiority, introduction — and imposition — of new crops and food products, land appropriation, integration of First Peoples into the wage economy, and the enforcement of colonial laws that eroded indigenous self-determination and identity. At the most fundamental level the process of colonization was enabled by a European presumption of superiority over the indigenous occupants. From the beginning, the European newcomers largely and conveniently ignored the sophisticated and complex land and resource management systems of First Peoples, particularly with respect to practices regarding plants (Deur and Turner 2005). It, in fact, was vital to the success of the colonial project to construct an image of First Peoples as “primitive natives”. A critical characteristic of this image is that of the hunter-gatherer, the non-agriculturalist. Using this construction, the appropriation of land to “put it to better use for real farming” and the colonial mission to “civilize” the First Peoples and to enlist them into the industrial workplace was framed as moral and rational (Harris 2002a; Turner and Brown 2004; Turner et al. 2005).

The effects of colonial policies on First Peoples were devastating to their health and cultural integrity. As Duff (1997, p. 50) maintained, “Change came on too strongly, and the Indian cultures ceased to function as effective integrated systems of living.” The exposure of First Peoples to colonial and imperial pressures led, among other things, to a decline in their food sovereignty and security, reflected in the loss of many dietary traditions and resource management practices.

The new foods brought in by the European traders and settlers, from cattle, hay, and garden crops to molasses, flour, and rice, were generally readily accepted by the indig-

enous peoples and were quickly adopted and adapted into their food systems. These new products alone did not cause the demise of traditional food, but they started the process. The introduction of the field potato, for example, which was brought to Vancouver Island by European traders shortly after the establishment of Fort Langley (and even before then by the Spanish explorers), had a particularly direct impact on camas cultivation. Considering the devastation of smallpox and other disease epidemics of 1775, 1801, 1824, 1830, and 1862–1863, the low-input potato must have seemed a promising addition to the diets of peoples in the midst of major social upheaval and loss (Beckwith 2004).

Potatoes rapidly came to replace camas as a staple carbohydrate food for the Coast Salish, as well as for the Haida and other First Peoples in the province (Suttles 1951). Journalist W.C. Hazlitt, who wrote a historical sketch of Vancouver Island in 1858, commented on this shift: “Potatoes and dried salmon form the staple food of all natives who can produce them, the camas being by them considered more of a delicacy” (Beckwith 2004, p. 52). This transition was encouraged, as well, by economic utility of potato as a trade item. Many First Nations People became merchants, selling potatoes — as well as salmon and their physical labour — to the new forts and trading posts. Flour, sugar, tea, pilot biscuits, and other European foods were traded to the Coast Salish and other First Peoples and were quickly integrated into their diets along with potatoes. It is important to note that traditional management practices for the wild plant resources did not reduce the plant populations and, in fact, evidently enhanced their abundance and productivity through cultivation activities (Turner and Peacock 2005). Thus, lack of abundance of indigenous food would not have been a factor in the change in food, although loss of access to traditional food resources certainly played a role in the transition.

The arrival of colonists compounded the social, political, and environmental changes felt by First Peoples as seizures of their territories snowballed to match the growing demands of the newcomers for land and agricultural produce. Between 1843 and 1850, thousands of acres of land around Fort Victoria, for example, were claimed by the Hudson Bay Company and others for farms on southern Vancouver Island (Beckwith 2004). Areas put to the plow and turned to pasture included many flourishing camas gardens; the “number one vegetable” was exterminated as if it were a weed (Beckwith 2004, p. 165). These early land seizures set the stage for those described some decades later in Kingcome Inlet by Hereditary Chief Cesaholis, as well as many other such occurrences throughout the province. One settler described the cumulative impact of settlement on the food system of the Coast Salish:

... the very old people who formerly lived entirely on fish, berries and roots suffer a good deal through the setting up of this country. The lands that once yielded berries and roots are now fenced and cultivated and even on the hills the sheep have destroyed them. (Harris 2002*b*, p. 149)

The Colony of Vancouver Island was declared in 1849, and the appropriation of First Nations lands was formalized through the Fort Victoria Treaties — commonly known as the Douglas Treaties — of 1850–1852. These stipulated that

native lands be consigned forever to the Hudson Bay Company in exchange for 75 pounds sterling — in the case of the Songhees of Victoria — with the exception that the First Peoples were allowed rights to their village sites, to any enclosed fields (camas plots and other demarcated fields not being recognized as such), hunting rights over unoccupied land, and the right to fish as formerly (British Columbia Government 1875, p. 6). The Coast Salish and other groups were thus sequestered on small reserves as their territories and access to food sources were taken from them. The gold rush of 1858 further accelerated land alienation as the non-native population expanded dramatically. This was followed by further waves of settlement and resulting displacement during the 1860s and 1870s, fueled by the provinces’ growing manufacturing and resource extraction industries. Accompanying settlement was a range of industrial development, from forestry to agriculture to fisheries, in almost every instance causing a decline in the food resources themselves, from habitat destruction (e.g., draining and dyking wetlands, overgrazing, urbanization, and conversion to agricultural fields), pollution, resource over-exploitation, impacts of introduced species, and banning of traditional management practices, such as landscape burning (Claxton and Elliott 1994; Boyd 1999). Eventually, as well, the establishment of parks and protected areas regulated by conservation laws further restricting access to these lands for hunting and resource gathering.

The shifting demography, from the fur trade era on, and the deconstruction of the First Peoples’ livelihoods — through the appropriation of land and resources and the denial of First Nations’ access to them — forced or drew many people into the wage economy, including commercial marine mammal hunting, fishing, cannery work, farm labour (clearing land and harvesting hops, fruit, and other crops), and domestic work. Much of this work, such as at the coastal salmon canneries and crop harvesting, was required over the summer season so that traditional food harvesting was either impossible or would have to be worked in around the wage jobs.

Thus, a vicious cycle of cultural transformation was compounded — the more that First Peoples were distanced from their traditional livelihood seeking patterns, the more difficult it became to return to that way of life because without their obvious presence on the land, settlers’ takeover was even more readily justified. At the same time, with fewer opportunities for accessing their traditional food resources, many children and youths were not able to learn the techniques and protocols for harvesting and preparing them, and this accelerated the downward spiral of loss. Many children began to spend their summers working at the canneries to help supplement their family incomes. This cycle intensified peoples’ dependence on money and the purchase of European staples as a means to maintain food security and so furthered the distancing dynamic (Duff 1997, p. 126). The irony of the change was not lost to Elders like Elsie Claxton, who lamented: “No money long ago, but it’s nice: lots of food, lots of clams, lots of wild berries all over ... even they are gone ... We lost everything. Nothin’ [left]!” (Elsie Claxton, personal communication to N. Turner, 1998)

Colonization continued as British Columbia entered Confederation in 1871 and the First Peoples of British Columbia

became subject to the Indian Act. Over the successive decades, this Act opened the door for policies that continued to erode peoples' food traditions. It sought to break down First Nations' cultural practices and vilified traditional feasts and ceremonies, such as the potlatch, at which traditional foods and knowledge about the care and maintenance of resources and habitats were shared and celebrated. The opportunity to celebrate food, and through it culture, knowledge, and tradition, is critical to maintaining the health and vitality of any community. Furthermore, as people became more and more dependent on the wage economy, they were forced to move farther away from their home communities for longer periods of time, and the cohesion and continuity of knowledge transfer was further diminished. In fact, many people left their home communities altogether and moved to urban centres where access to traditional food is even more difficult.

Beginning in the 1880s, and continuing until the 1980s, First Nations children across Canada were taken from their communities to be educated at schools established by the Federal Government in cooperation with the Catholic, Anglican, and other denominational churches (Duff 1997, pp. 129–149). Establishing these schools was an overt attempt to assimilate First Peoples into settler society as farmers and Christians through an attack on First Peoples' traditional family and community bonds and cultural practices. The children who attended these schools, particularly during the mid-1900s, are often referred to as the lost generation because of their disconnection from their cultural heritage (Haig-Brown 1988). The trauma — both cultural and personal — from the residential schools has had, and will continue to have, negative repercussions for generations.

At these schools the children were strictly forbidden to speak their own languages and were fed European style foods, including potatoes, porridge, bread, and garden produce. They were taught that the foods of their parents and grandparents and other aspects of indigenous ways of life were inferior and wrong. It is reasonable to assume that years of a child eating a different type of food would have an impact on their food preferences, particularly considering the psychological coercion involved, in which their former food was portrayed negatively. Furthermore, because children were away at school for extended periods, they were not able to learn the complex food production knowledge of their people, such as tending the clover gardens, pit-cooking camas bulbs, drying seaweed, and picking crabapples and thimbleberry shoots for their families. They also lost touch with the traditional names for these foods and for the places where they were gathered, the terms for the techniques and tools used to process them, and the stories and ceremonies that went along with them.

This change in children's participation in food gathering is of particular concern because children felt proud to help provide food for their families, and sharing food was part of their upbringing. For example, as a child, Adam Dick helped to bring in food. He recalled (personal communication to N. Turner, June 2006) walking through the village at Kingcome with three or four other children, each carrying armloads of thick, juicy thimbleberry sprouts that they had collected — as much as they could carry — and having people all through the village stopping them to ask for a taste. They would peel and eat them on the spot! Yet, at a recent work-

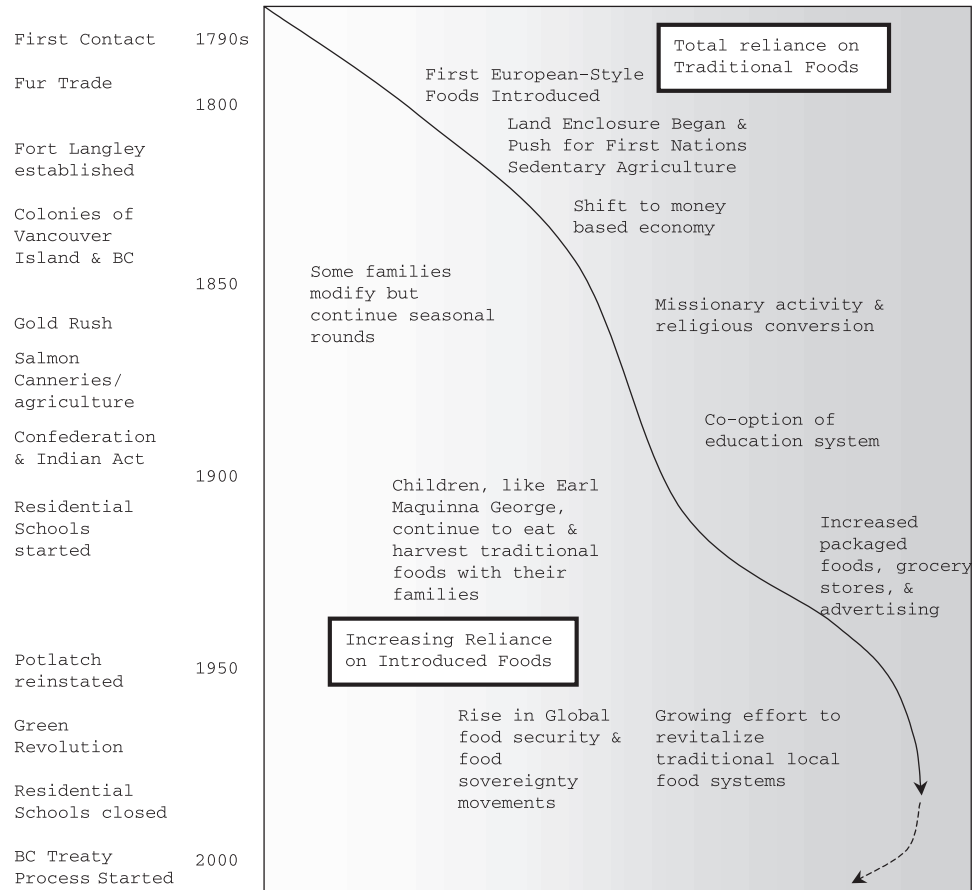
shop on plants with about 20 Ditidaht Nation teenagers, for example, only one youth recognized thimbleberry sprouts and knew of their use as a food for their ancestors. Similarly, children and youths of several other coastal villages were not aware of thimbleberry sprouts as a food. The diet of these youths has come to resemble very closely that of the non-native population, with the exception of including a higher proportion of salmon and seafood, and they participate only minimally in its production or serving.

Some of the different impacts and influences on traditional food systems since the fur trade era are chronicled schematically in Fig. 8. At the present time, for most indigenous communities, only a fraction of their diets are comprised of their original foods. However, as shown by the projected course of the line dividing traditional diet from “western European-style diet” at the bottom of the diagram, there is an increasing interest in renewal of people's traditional food systems (Nuxalk Food and Nutrition Program 1984; Wong 2003).

Health impacts of loss of traditional food

Increasingly, packaged, processed, high-calorie, lower-nutrition food, most of which travels thousands of kilometres between sites of harvest and markets, has become the basis of the western diet. Even the small kitchen gardens that were the norm for both native and non-native families some 50 years ago have mostly disappeared (Parrish et al. 2007). Today the vast majority of people do not have time or inclination to acquire food this way. Rather, modern supermarkets, added to modern food preservation and processing techniques, provide a seemingly efficient alternative, promoted through billions of dollars spent on advertising “fast food” products by transnational corporations each year. A large percentage of advertisements for low-quality foods, high in carbohydrates and fats, are specifically targeted at children; indigenous children and youths are as easily enticed by the candy, soft drinks, potato chips, macaroni and cheese, and ichiban as their non-indigenous counterparts. Additionally, the mass-production of foods, enabled by the agro-industrial model and the so-called Green Revolution of the 1960s, is dependant on enormous inputs of pesticides, herbicides, and fertilizers, which leach into soils and waterways and contribute to undermining the possible acquisition of foods from traditional sources (Soule and Piper 1992).

The health consequences of this “nutrition transition” are profound. First Peoples are over-represented in rates of related dietary health problems, which have become common throughout North America. Incidences of heart disease are 1.5 times higher and rates of type-2 diabetes are three to five times higher than for the general population (Health Canada / Santé Canada 2006). Two intersecting factors help explain this. Firstly, people living in poverty are often most vulnerable to these consequences of an unhealthy diet; in North America the most affordable and accessible fare (as discussed above) is frequently that with the lowest nutritional quality. In Canada, the First Peoples are the poorest overall sector of the general population. And secondly, First Peoples are better adapted physiologically to the makeup of their traditional diets, which were low in simple carbohydrates and higher in protein and fats. Thus, these peoples are particularly vulnerable to the negative effects of the

Fig. 8. Schematic diagram: cumulative effects and dietary change for British Columbia First Peoples.

North American dietary change (Beaton 2004; Heffernan 1995; Wong 2003). Part of the impetus for re-adopting traditional food is to help alleviate the health problems stemming from the dietary transition (Kuhnlein 1984, 1992; Kuhnlein and Receveur 1996; Nuxalk Food and Nutrition Program 1984). As well as consuming healthier food, the production and harvesting of traditional food is also generally healthful, since it promotes activity and exercise, which is itself recognized to be beneficial to health in the broadest sense: physically, spiritually, emotionally, and mentally (Wong 2003).

Cultural impacts of loss of traditional food

In some ways as serious as the direct impacts to health related to decreasing use of traditional food has been the loss of cultural identity and cultural pride that is represented by food traditions among other cultural expressions, many of which are intertwined with food systems. People identify strongly with the food they eat and with the ways in which it is harvested, prepared, and served (cf. 'Ksan, People of. 1980; Turner 1995). The complex traditions associated with food production (cf. Boas 1921) embody a rich understanding of the environment, including virtually all aspects of traditional ecological knowledge, from practical strategies and management techniques, to belief systems that guide sustainable use of resources, to ways of communicating and acquiring knowledge (Turner et al. 2000).

Although we focus here on only five plant foods, there are numerous other examples of traditional foods that have

declined in use, with a resulting loss in cultural knowledge and practice, both in British Columbia (cf. Loewen 1998; Chambers 2001; Bandringa 1999; Garibaldi 2004) and elsewhere (cf. Barsh 1999; Berkes and Farkas 1978; Honigmann 1961; Jacobs and Jacobs 1982; Karst 2005; Norgaard 2004; Nabhan 2006; Parrish et al. 2007). In fact, all across the world, the process of erosion and loss of traditional food systems is ongoing (Kuhnlein et al. 2006), and peoples' health, cultural identity, and traditional knowledge systems are seriously affected.

Renewing food traditions

As exemplified by the plant food cases on which we have focused, the loss of food traditions occurs in stages. At one end is "full involvement" — where one not only consumes a food resource but has a depth of knowledge of, or participates in, its harvesting, processing, and care or management, including its associated terms, stories, and ceremonies. At the other is "total loss" — where a food is completely forgotten by everyone in a community. In between these extremes is a range of different degrees of familiarity with the food; for example, having eaten but not harvested a food or maybe only having heard others tell of it. In the case of our five examples, all have experienced a marked decline in use, and most (except *Porphyra*) are not well known or used by children today, but all are remembered by at least some members of various cultural groups or communities.

Fortunately, as long as some knowledge of the food ex-

ists, with some availability or access to it, the trajectory of this continuum of loss need not be only in one direction. It is possible to reverse the trend, to regain use of and even redevelop knowledge about a given food, and to reinstate it into the diet if this is considered desirable for health, cultural, or other reasons. As a component of eco-cultural restoration, this is exactly what is occurring in many different regions including British Columbia (Bryce 2005; Senos et al. 2006; Nuxalk Food and Nutrition Program 1984). For example, renewal of pit-cooking as a traditional cooking method for root vegetables and other foods has been undertaken on a number of occasions (cf. Anonymous 2005; Higgs 2003; Turner 2005), and this is one step towards reinstating the use of those foods such as camas that require pit-cooking for digestibility and palatability. Regaining access to harvesting grounds is also occurring, with negotiations over First Nations' rights to lands and resources an ongoing enterprise in British Columbia treaty negotiations and alternative negotiations.

Some indigenous people, like Lekwungen (Songhees) Lands Manager Cheryl Bryce (2005; see also Beaton 2004), regard the re-adoption of traditional foodstuffs as a way to combat some of the health problems such as diabetes facing indigenous populations today. They also see rebuilding food sovereignty as an important step in the struggle to overcome some of the most negative socio-cultural impacts of colonialism.

Each stage along the continuum, from full use of a traditional food to total loss, requires attention if food traditions are to be renewed and revived. Combining contemporary methods, such as publications, informational videos, and interactive multimedia, with traditional methods of showing value for traditional food, such as reinstating ceremonial practices relating to traditional food, serving this food at community feasts, and bringing back the language of the food in stories and discourse, will be the most effective means of restoring traditional foods and, with them, intact, productive, and healthy environments. Obviously, the population stability of the food plant species is critically important to maintain. However, through careful monitoring and by applying traditional management methods that enhance productivity of these species as part of renewing knowledge and use of traditional foods, both the plant populations and the indigenous peoples will ultimately benefit.

Traditional food has always been a part of First Peoples' economies (Turner and Loewen 1998; Ommer and Turner 2004); perhaps developing cooperatives and other economic institutions that integrate this food more into the modern economic system is one means of nudging the marker towards the "full-use" end of the spectrum. Incorporating new dishes and new, more contemporary ways of serving traditional food will also help in this effort. For example, young people of Hartley Bay particularly enjoy seaweed that has been roasted or fried in hot oil in contrast to that prepared by being compressed in boxes (Turner and Clifton 2006). Therefore, providing seaweed prepared in this way is one means of ensuring that young people will continue not only to eat it, but also to want to go out to gather it and learn the knowledge associated with its harvesting.

Children's use of and interest in traditional food is a key to its continuation. Therefore, it is particularly important to involve children and youths in educational efforts around

cultural food resources. This can be done within schools, fitting into the set curriculum requirements of biology studies, research, language, communication, and career preparation (Thompson 2004), or as extracurricular projects such as science camps and family harvesting outings. Just as the demise of traditional food use has resulted from a complexity of cumulative factors, so the reinstatement of traditional foods in peoples' diets cannot be realized with any simple fix. Rather, it requires a spectrum of diverse, ongoing initiatives with compounding, positive effects that will eventually turn the tide towards reclaiming this important aspect of peoples' health and cultural heritage.

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