Indigenous Toponyms as Pedagogical Tools: Reflections from Research with Tl'azt'en Nation, British Columbia

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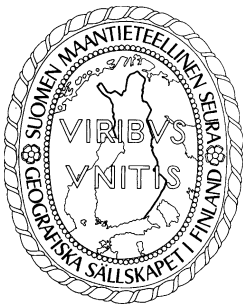

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Apart from conventional understandings of its utilitarian function as spatial labels (often eponymous in character), toponymy is seldom appreciated as palimpsest or for the layers of meaning it assumes, conveyed in place-name etymologies and local knowledge associated with the named places. Over the years, a growing body of literature has emerged on the use of toponymy in several research fields: the range spans from linguistic investigations into place-names and naming practices to the use of place-names in tracking environmental change, locating places of archaeological interest, and understanding the knowledge possessed by local communities about the natural environment. The latter focus describes place-names research with Tl'azt'en Nation, the Dakelh-speaking people whose territory lies in the Stuart-Trembleur watershed of central British Columbia, Canada. From the perspective that indigenous place-names communicate knowledge about the natural world, indigenous language and (oral) history, this paper will draw upon examples of Dakelh place-names to demonstrate the value of indigenous toponymy in education.

Key words: British Columbia, toponymy, First Nations, indigenous, participatory research, culturally sensitive education.

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Introduction

Ethnographic studies of how children acquire knowledge have indicated multiple literacy and numeracy practices (Baker et al. 1996), and with indigenous peoples in particular, knowledge seems to be based on the socio-cultural as well as the ecological, internalized, practiced and transmitted in a "habitus"[1] governed by the subsistence way of life (Sarangapani 2003: 203). Schooling, however, does not necessarily represent the multiplicity of epistemologies, and is thus perceived as problematic by indigenous peoples who view state-sponsored, introduced western-modeled education as antithetical to the values and knowledges that define their communities' worldviews. "Western" standardized education, after all, has often played a part in the marginalization of these peoples, perpetuating the idea that indigenous peoples, their knowledges and ways of life have no place in the present (Urion 1993).

To remedy the alienating and homogenizing influences of formal education, there is a pressing need for schools to accommodate other, non-dominant (and often non-"western") ways of knowing. The need for indigenous ways of knowing in the curriculum is underscored by a dearth of ancestral knowledge among younger aboriginals, at the root of which is insufficient exposure to their community's oral tradition and to life on the land (Rosenberg & Nabhan 1997). One means of introducing such knowledge into formal education is through the use of indigenous toponymy to demonstrate the "knowledge-practice-belief" (Berkes 1999) basis of Traditional Ecological Knowledge (TEK).[2] As an articulation of TEK, toponyms "represent a complex body of knowledge… accumulated over long periods of being part of specific natu-

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ral environments and ecosystems" (Müller-Wille 2000: 146), and "…constitute a detailed encyclopedic knowledge of the environment, [telling] much about how native people perceive, communicate about, and make use of their surroundings" (Afable & Beeler 1996: 185).

As well, the role of indigenous toponymy in curriculum is recognized to be liberative, serving as a medium to reflect on the indigenous ancestral past for guidance on living "right" in the present (Basso 1996:59). Beyond their capacity for relaying environmental information, place-names possess the potential to be employed in a post-colonial exploration and reclamation of identity (Nash 1999). Places that are referred to by their indigenous names anchor indigenous identity to those places, replacing histories of dispossession and erasure of cultural knowledge with accounts grounded in precise locations (Cruikshank & Argounova 2000). In other words, the symbolically rich resources of place-names and place-based narratives serve to re-establish meanings locally and affirm a sense of continued indigeneity. This is seen most clearly in efforts concerned with the construction of culturally appropriate curriculum, where the transmission of culture is active and the use of cultural knowledge is emphasized over the need to amass and protect it for reasons of posterity (see Cruikshank 1981; Cruikshank & Argounova 2000). From research with Tl'azt'en Nation (see Heikkila 2007), we propose that indigenous toponyms can serve as valuable tools to sensitize education and to increase its accessibility and appeal to indigenous students.

Tl'azt'en Nation

The Tl'azt'enne are Dakelh (Carrier)-speaking people of the Stuart-Trembleur Lakes watershed in central interior British Columbia, Canada. Their territory, comprising some 6 500 square kilometers north of Fort St. James, is embedded in a region that experiences a continental climate and a short growing season. The region straddles the upper watersheds of two major rivers, the Fraser and Skeena, which support numerous fish species, including several types of salmon. Migrating waterfowl descend upon the region's lakes to nest in the spring, returning in late summer to molt in preparation for migration southward (Morice 1897; Hall 1992; Sam 2001). The territory's lakes, ponds, rivulets and rivers are home to beavers and muskrats, prized for fur and meat. The territory is densely blanketed with spruce, fir, pine, aspen and birch, and along alluvial systems, with black cottonwood and willow. In addition to serving as habitat for game such as moose, mule deer and black bear, and fur-bearing animals such as marten, fisher and lynx, the forest exists as a source of edible plants, and materials for shelter, medicines, and implements such as nets, baskets and canoes (Hudson 1983; Hall 1992).

Traditionally hunter-gatherers and foragers, the Tl'azt'enne led a generally mobile way of life and adhered to a social organization consisting of patrilocal hunting bands (Morice 1895; Jenness 1943; Donahue 1977; Hudson 1983; Fiske 1987). Thorough understandings of their surroundings were crucial for survival, and similar to other Athapaskan peoples, the Tl'azt'enne employed a subsistence technology that "depended on artifice rather than artifact" (Ridington 1990: 12). Knowledge of the land and its resources was valued over material accumulation: crucial to semi-nomadic survival was the know-how to hunt, fish, and trap and to construct dwellings, weaponry and tools in unpredictable and severe conditions. *Yun* and *dune,* the two main knowledge systems in the Tl'azt'en worldview, pertain respectively to the mastery of utilitarian skills and ritual (ceremonial and customary) conduct (Deborah Page, Tl'azt'en Youth Meeting, 27/02/04). These systems of knowledge represented the necessary guides to life in a hunter-gatherer society: understanding the habits of game animals, adhering to proper harvesting methods, observing rituals and taboos, and following etiquette befitting social relations (Jenness 1943). Stories, vision quests and dreams took on a kind of meta-level importance, where their motifs and morals provided a means to connect present reality to myth time (Jenness 1943; Furniss 1986; Ridington 1990), and in turn, to place individuals communally as well as within the physical environment that sustained the community.

From pre-contact trading relations with the northwest Pacific coastal indigenous nations, cultural borrowing is evident among the Tla'zt'enne. Rather than a replacement of the basic paternal Athapaskan[3] group structure of the Dakelh bands, northwest coastal enculturation was absorbed as an addition to the prevailing structure (Ives 1990). A conspicuous vestige of coastal influence that continues to play a role in Tl'azt'en culture is the matrilineal system, which "function[s] solely in the area comparable to a social welfare system,

i.e., the potlatch system" (Walker 1974: 380). This coastal import remains an appendage to the basic Athapaskan identity of the Tl'azt'enne.

Over time, the ancestors of present-day Tl'azt'enne became gradually less mobile. Permanent villages at lake outlets began to emerge, where salmon harvesting was carried out from late-summer to mid-fall. As people congregated at village sites for the salmon harvest, they fulfilled the key social obligations of participating in potlatches and other clan ceremonies (Kobrinsky 1977; Furniss 1986; Carlson and Mitchell 1997). In time, family-owned hunting and gathering territories known as the *keyoh* emerged (Hudson 1983; Morris 1999; Brown 2002). The *balhats* (potlatch) and clan systems regulated rights to resources within the *keyoh*, and permission had to be sought of *keyoh*-owning families to hunt and trap within these territories (Morris 1999). The *balhats* was carried out in order to affirm property rights and resource use in the *keyoh* (Morris 1999; Brown 2002).

The advent of European presence and settlement in Tl'azt'en territory further intensified permanent villages, especially in the vicinity of trading posts, missions and homesteads (see Morris & Fondahl 2002). As their ancestral lands progressively fell under state control and ownership, the Tl'azt'enne were forced to settle on government reserved land (i.e., parcels of "Indian land", under federal jurisdiction, within Tl'azt'en traditional territory) (Morris & Fondahl 2002). The current on-reserve population of Tl'azt'en Nation (approx. half of the total 1 500 members) is concentrated in three villages: Tache, Binche, and Dzitl'ainli (Middle River). Despite the hegemonic legacy of the reservation system, Tl'azt'en access to and use of land was assiduously negotiated between Tl'azt'en leaders and the state (see Morris & Fondahl 2002). Even today, the Tl'azt'enne still depend on subsistence hunting for their livelihood on their traditional territory, supplemented by wage employment and government subsidies.

A challenge that is implicitly linked to the injustices of the reservation as well as a residential school system, and one that is frequently expressed by Tl'azt'en elders, is the limited amount of time youth spend on the land and their limited knowledge of their ancestral language and culture. At present, the Dakelh language is introduced in a pre-school program at the on-reserve school but is spoken fluently in few households, which poses an obstacle to the younger generation relearning it.

Over the years, the Tl'azt'enne have sought to improve the socio-economic well-being of their community through negotiated power arrangements. An instance is the Tl'azt'en Nation – University of Northern British Columbia co-management of the 13 000 ha John Prince Research Forest, located on Tl'azt'en traditional territory.[4] Further, in 2003, members from Tl'azt'en Nation and the University of Northern British Columbia (UNBC), as part of their on-going co-management partnership, formed the non-profit Chuntoh Education Society, mandated to expand culturally appropriate educational opportunities for Tl'azt'en Nation, especially through on-the-land programming involving Tl'azt'en cultural experts. This society developed the *Yunk'ut Whe Ts'o Dul'eh* program (see Mitchell 2003), a land-based culture camp program that aims to connect the learning of natural sciences to Tl'azt'en culture.[5] Elders teach traditional skills in a seasonally-based program offered to both Tl'azt'en and other local children in late elementary school grades.

In 2004, Tl'azt'en Nation and UNBC launched a five-year co-managed research project, "Partnering for Sustainable Resource Development", with several areas of investigation, including the documentation and perpetuation of Tl'azt'en TEK, and the investigation of culturally appropriate means of enhancing science education to improve Tl'azt'en student retention and achievement (see http://cura.unbc.ca).[6] The toponymy research described below was envisioned as addressing both of these areas, and having potential for inclusion in the *Yunk'ut Whe Ts'o Dul'eh* program.

"Indigenizing" science education: a case for indigenous toponymy and on-the-land camp programs

The literature on aboriginal education in Canada cites science as a curricular area requiring considerable reform to help indigenous students succeed. Low rates of enrollment in senior secondary-level science courses amongst indigenous students appear to correlate with insufficient exposure to these subject areas during elementary school, where many students are placed in remedial programs with limited science instruction (MacIvor 1995). A weak foundation in science is also due to a lack of proper facilities and equipment (particularly in rural schools), few indigenous role models in the field of science, and the mistrust many parents have towards institutionalized education that

limits family support for science learning (MacIvor 1995: 84). A significant factor contributing to low attainment in science is insufficient representation of indigenous lifeways in the curriculum (Mackay & Miles 1995; Battiste 2000; Cajete 2000).

The sense of cultural discontinuity experienced by indigenous students in learning science is rooted in interpretations of the world based on "a traditional frame of reference (...that may include the physiography and natural history of their homelands), [within which] cognitive and even moral conflicts may limit or preclude any effective engagement with western science" (Semken 2005: 150). Undoubtedly "the scientific" has negative connotations for many indigenous nations, whose territories and ways of life have been disrupted by resource extraction and the wastage and contamination that often result from land development activities; opposed to place-specific knowledge systems such as TEK that assume the interrelatedness of beings and a spiritual commitment to local ecologies, western science seems a totalizing force toward the construction of universal understandings of phenomena based on paradigms (see Smith 1999; Battiste & Henderson 2000; Howitt 2001; Semken 2005). The objectivity and analytical detachment of the paradigmatic authority is indeed incongruous with the personal authority that propels the initiation of several indigenous led on-the-land programs across Canada.[7] These programs seem to provide a much-needed space for experimentation into ways in which to introduce TEK to children and youth, and can be understood as a transition step to revamping the formal curriculum followed in community or band schools. The programs could be also called laboratories of learning, as the successes and failures experienced through the running of such programs can prove to be important lessons for informing how a culturally appropriate education should be modeled. Additionally, on-the-land programs provide a natural venue for increased community and parental involvement, more representative of traditional ways of imparting knowledge (Yamamura et al. 2003). In fact, the idea of on-the-land programs can be best encapsulated by remarking that when indigenous communities play a part in the development of their own curriculum projects and teach in a manner they determine, they increase their chances for cultural advancement and continuity (Dean 2004; Enkiwe-Abayao 2004).

A significant part of the Tl'azt'en-initiated *Yunk'ut Whe Ts'o Dul'eh* culture-based outdoor science camp program lies in its goal of creating an opportunity for youth to become immersed in the land and the Tl'azt'en culture. To teach about the land in the context of the Tl'azt'en culture, it is crucial to introduce learners to Tl'azt'en conceptions of the landscape and their sui generis relationship to the land. These elements are intricately bound with that which indigenous peoples recognize to be at the core of their epistemologies: the investment of self in knowing and protecting one's surroundings.

Hence, there is a need to include TEK in science education to bring about a more critical and decolonizing approach to the teaching and learning of science. This has been stressed in the literature as a means to problematizing science to uncover its inherent Eurocentric biases and to balancing the western scientific literacy that is taught in schools with other knowledge traditions (see for example Aikenhead 1997; Snively & Corsiglia 2000; Smith 2000). In comparing and contrasting TEK and western science, Battiste and Henderson instruct on the functioning as well as the possible complementarity of both systems of knowledge:

> The traditional ecological knowledge of Indigenous peoples is scientific, in the sense that it is empirical, experimental, and systematic. It differs in two important respects from Western science, however: traditional ecological knowledge is highly localized and it is social. Its focus is the web of relationships between humans, animals, plants, natural forces, spirits, and land forms in a particular locality, as opposed to the discovery of universal "laws". It is the original knowledge of Indigenous peoples. Indigenous peoples have accumulated extraordinarily complex models of species interactions over the centuries within very small geographical areas, and they are reluctant to generalize beyond their direct fields of experience. Western scientists, by contrast, concentrate on speculating about and then testing global generalizations, with the result that they know relatively little about the complexities of specific, local ecosystems (Battiste & Henderson 2000: 44)

While allowances are increasingly made in the curriculum for the teaching and learning of indigenous languages and culture (see for example BC Ministry of Education 2006), indigenous perspectives remain largely absent from the core subject area of science. It is a reality that the inclusion of TEK in science education is problematic, with aboriginal culture and knowledge content treated as tangential to standard curricular mandates. The concept of TEK as a "tried and tested" system of

acquiring and validating information about the world is simply not acknowledged. Where part of the curriculum, TEK is mostly relegated to indigenous language classes, to the learning of traditional stories as part of Language Arts activities or to segregated hunting, fishing, trapping and gathering trips that entail a break from school (McCaskill 1987; Aikenhead 1997; Aikenhead & Huntley 1999).

Alternatively, an effective indigenous school curriculum has been defined as one that is place-based, engages learners in "studies associated with the surrounding physical and cultural environment" and involves increased contact time with "elders, parents and local experts" (Barnhardt & Kawagley 2004: 63). From this perspective, indigenous cultural content is regarded as being complementary, rather than subsidiary, to science, entailing a shift of focus from "teaching about culture to teaching *through* culture" (Barnhardt & Kawagley 2004: 62, emphasis added). Such a philosophy has evoked inspiration for teaching TEK outside the drawn-out and prohibitive process of educational reform. On-the-land learning programs, effected on a small-scale level and community-led, offer an opportunity for local empowerment where culture-based education can be encouraged without the bureaucracy and red-tape associated with either adjusting to or reforming the formal school curriculum.

From a broader standpoint, such programs symbolize the reclamation of education – an institution historically linked to paternalism, racism and cultural dispossession – as a means to transmit cultural knowledge and values. This sentiment may well be the driving force behind the initiation of on-the-land programs, which seek to integrate "the indispensable role of the land as the classroom in which the heritage of each Indigenous people has traditionally been taught" (Battiste & Henderson 2000:53). In this light, place-names have a significant role to perform as aids in making the land accessible in human terms, as signs, pathfinders, containers of knowledge (e.g. environmental, historical, geographical), and meditations of events and people of long ago. In teaching Tl'azt'en youth to re-connect with the land, place-names have an inestimable importance because they are tangible markers of places on the land that give substance to the culture of their people. Therefore, incorporating Dakelh toponymy in educational programs, such as the *Yunk'ut Whe Ts'o Dul'eh* program, has the effect of re-instating Dakelh names on the map, of keeping the land from being lost to Tl'azt'enne (Pauline Joseph, CPNIS, 19/05/04).

Methods

In view of the ongoing negotiations in Canada between the state and indigenous communities over aboriginal and treaty rights[8], as well as the precedential aboriginal land claims settlements in northern Canada, the onus of proving aboriginal presence on and utilization of ancestral lands rests with indigenous communities: evidence of use and occupancy of these lands must be proved by the communities in order to secure future rights to them. To this end, many communities have chosen to conduct land use and cultural heritage surveys known as Traditional Use Studies (TUS) (see for example Freeman 1976; Castonguay 1979; Wonders 1987, Müller-Wille 2000; Tobias 2000; Collignon 2006). At the time of our research with Tl'azt'en Nation, the community had already completed a TUS, which included the documentation of 640 Dakelh place-names. Given Tl'azt'en Nation's interest in toponyms beyond land claims, our collaborative work shifted focus from the recording and mapping of place-names to the analysis and verification of names. One aim of our research was to establish a rigorous and reproducible methodology to collect additional cultural information about place-names that Tl'azt'en researchers could use over time to enrich their place-name data banks. A second objective was to consider the place-names' pedagogical potential. Thus a limited number of toponyms (nine) were chosen for our study, by Tl'azt'en member Beverly Bird[9] (Table 1).

A key criterion used by Ms. Bird in selecting the toponyms was location: as it was likely that toponyms would initially inform the *Yunk'ut Whe Ts'o Dul'eh* program's curriculum, rather than formal educational curricula (given bureaucratic obstacles), Ms. Bird chose places on or near the John Prince Research Forest land base (Fig. 1) where the *Yunk'ut Whe Ts'o Dul'eh* program is held, so that children who participate in the program can visit or at least see these places. Another criterion used by Ms. Bird was the physiographic or cultural-use descriptiveness of place-names. Several types of watercourses, for example, were chosen because segments of their names contain information on the direction of the flow of water. Place-names based on the types of resources found on or near

Table 1. Dakelh toponyms included in the study

Dakelh name & gloss	Official name	Alternate name	Geographical feature	Location (see Fig. 1)
Chuzghun "A down feathers place" (where ducks and geese moult). Also refers to the treed shoreline of the lake. *chuz* = snowflake; soft or hollow wood. *-ghun* (from *bunghun*) = lake, lake area.	Tezzeron Lake	**Chuzghun bun**	Lake	Northern-most bounds of the John Prince Research Forest. Parallel to and north of Pinchi and Stuart lakes.
Chuz tizdli The point at which the waters of Chuzghun discharge. *tizdli* = that flows out; starting to flow; flowing creek; water running out of a lake; beginning of a running river; river running out of a body of water; running water; where water runs out; flowing away from a body of water.	–	–	Lake outlet	Far western end of Tezzeron Lake. Kuzkwa River flows out of Tezzeron Lake via Chuz tizdli.
K'uz koh *K'uz* (from 'u'k'uz) = half; parts that make a whole; half a side of fish. *-koh* (from *'ukoh*) = creek, river, stream.	Kuzkwa River	–	River/creek	Flows out of Tezzeron Lake, in the north-western part of the John Prince Research Forest.
Hadoodatelh koh Describes the soft quality of the bed of the lake it takes its name.	Hatdudatehl Creek	**Ningwus koh** (lit. "soapberry creek)	River/creek	Flows out of Hatdudatehl Lake into the middle of Tezzeron Lake at its northern shore.
Chuzghun koh	Tezzeron Creek	**Yuts'uzuk** **Yat'suzak** (both names refer to the activity of landing a boat or canoe) **Chuz koh**	River/creek	Meandering creek at the far eastern end of Tezzeron Lake. Flows above Yatzutzin Lake.
Tesgha Refers to the mossy quality of the lakebed, which is prime whitefish habitat. Also describes the lake area as a refuge or "resting area" for migrating waterfowl. *Tes* = bed; bedding. *-gha* = hairy, furry or mossy.	Pinchi Lake	**Bin koh** **Binche bun** **Tesgha bun** **Qez-ren [Juzghun]**	Lake	Lies between Stuart and Tezzeron lakes.
Bin tizdli The point at which the waters of Tesgha discharge.	–	**Bun tizdli**	Lake outlet	Southwest portion of Pinchi Lake.
Bintl'at noo Island at Tesgha's farthest end (farthest upstream end of the lake). *-tl'at* = posterior; backside (indicating backwater areas, upstream from settlements).	–	**Bintatoh** ("among lake waters that shoal") **Bintat tl'at**	Island	Far eastern end of Pinchi Lake.
K'azyus *-yus* = ridge (archaic Dakelh form).	Pinchi Mountain	**K'uz yus** **Binche Dzulh** **Tesgha Dzulh** **Natadilht'o*** ("water rising", referring to the multitudinous ponds, lakes, swamps and streams surrounding the mountain)	Mountain	Located between Pinchi and Tezzeron lakes.

*Spelling to be verified by the Carrier Linguistic Committee.

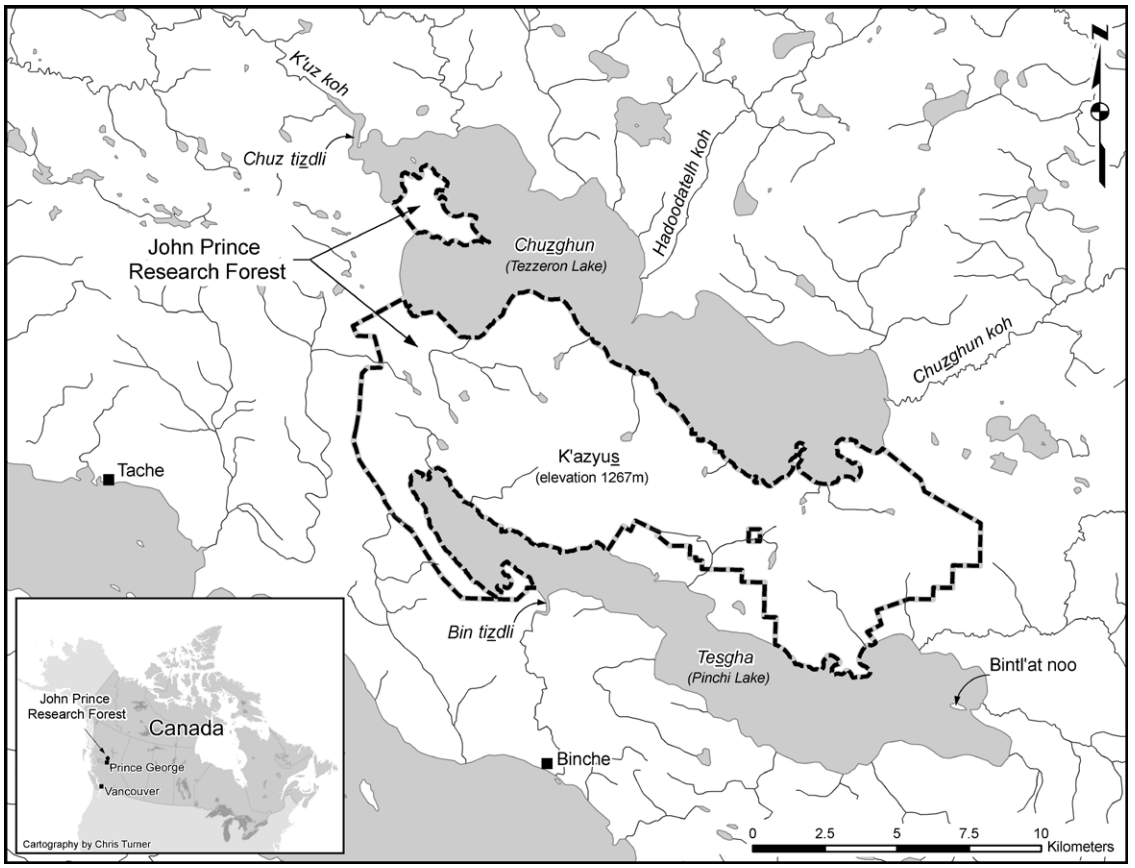

Fig. 1. Dakelh toponyms researched and their locations in the vicinity of the John Prince Research Forest, British Columbia, Canada.

named features provided a third criterion. The study place-names included two lakes (Chuzghun and Tesgha) one mountain (K'azyus), one island (Bintl'at noo), two creeks (Hadoodatelh koh and Chuz koh), two lake outlets (Chuz tizdli, Bin tizdli) and one river (K'uz koh).

The research methods and procedures, developed in adherence to *Tl'azt'en Nation Guidelines for Research in Tl'azt'en Territory* (Tl'azt'en Nation 1997), were approved by both the UNBC Research Ethics Board and Tl'azt'en Nation Chief and Council (Band Council Resolution no. 0520). To ensure community participation in the planning, execution and evaluation stages of the research, a steering committee made up of community elders and researchers was struck.

Extant sources of Dakelh toponymic information

As a first step in this study, existing sources of Dakelh toponymic information were reviewed. Through Tl'azt'en Nation's history, the band has authorized and conducted numerous studies concerning place-names, resulting in a "Tl'azt'en Nation Place-Names Database". A "Tl'azt'en Place-Names Study" (1996) and "Tl'azt'en Place-Names Project" (2003) specifically documented Dakelh toponymy. Two broader studies conducted by the Tl'azt'en Treaty office, the "Elders' Interviews" (1984-1995)[10] and the "Tl'azt'en Traditional Use Study" (TUS) (1998–1999), also included the documentation of some Dakelh place-names. A

project carried out under the auspices of the Yinka Dene Language Institute (YDLI) in 1994 to compile a Dakelh language lexicon (see Poser 1998) involved verifying some place-names culled from the early twentieth century works of the Oblate missionary, Adrien Gabriel Morice, and the recording of additional place-names in interviews with Dakelh speakers. Transcripts of interviews from the latter four studies were available for review, for references to the chosen place-names and their surroundings and associated legends, stories, environmental, cultural and traditional use information. Maps created by the Carrier Sekani Tribal Council[11] such as the 1: 50 000 "Carrier-Sekani Territory Southern Section" (1995) and "Tl'azt'en Nation Traditional Territory" maps (2004) also provided information on Dakelh place-names and their locations.

In the past, individuals with an interest in the history of their family's subsistence areas also collected *keyoh* place-names from their oldest living family members and used them to construct maps of their hunting and trapping territories. While the maps were not available,[12] many research participants talked of there being such a thing as *keyoh* place-names, exclusive to family members who hold the territory.

Along with those materials collected by Tl'azt'en Nation, published sources containing information on Dakelh place-names were reviewed (Morice 1897, 1978 [1904], 1907, 1932, 1933; Carrier Linguistic Committee 1974; Kobrinsky 1977; Hall 1992; Akrigg & Akrigg 1997; Poser 1998; Sam 2001). Copies of notes from Julian Steward's research of the mid twentieth century were also consulted (Steward 1940). These works provided background information on several of the study place-names.[13] However, the information from these sources was minimal and fragmented.

A review of archival and published information on the study place-names exposed gaps and discrepancies. Several facets of the chosen place-names had to be verified, including spelling, dialect, location, translation, meaning and whether the places were associated with any stories or legends. Thus interviews were required with Tl'azt'enne knowledgeable about the Dakelh language, traditions and life on the land.

Interviews

To gain an understanding of the Tl'azt'en-led place-name studies that had been previously undertaken, interviews were carried out with the community researchers who directed these studies, about the purpose of the Tl'azt'en place-names research projects, methodology employed, and areas of interest within the Tl'azt'en traditional territory.[14] The Tl'azt'en researchers were also asked for suggestions as to which elders to interview on the toponyms; each person provided the names of a number of Tl'azt'enne who are members of families on whose *keyohs* the toponyms occur and/or who are regarded by the Tl'azt'en community as having authoritative knowledge of the Dakelh language and the Tl'azt'en culture. Participants were then recruited from this list of names. Using a "snowballing" technique based on a peer recommendation process (Sherry & Fondahl 2004), a total of 12 individuals were identified, ten of whom were available for interviewing. The individuals were mostly elderly males.[15]

An interview guide, consisting of open-ended questions (Johnson 1992; Hart 1995; Grenier 1998; Tobias 2000) was devised, reviewed by Tl'azt'en colleagues, pre-tested and revised. It was designed to verify and expand on information from the earlier place-name projects. Formal interviews were then conducted with Elders Pierre John, Walter Joseph Sr., Robert Hanson, Sophie Monk, Frank Duncan, Louise Alexis, Elsie Alexis, Catherine Coldwell, Stanley Tom and Alexander Tom.[16] Morris Joseph, a Tl'azt'en member fluent in Dakelh, assisted with the interviews. During interviews, the participants were shown maps[17] of the study area, and the places of interest were either pointed at or referred to by their English or French toponyms. A 1: 125 000 map of the study area was specially commissioned by Tl'azt'en Nation for use in the interviews; a mylar sheet placed over the map served as a way to mark events, the settings of stories and legends, trails and additional locations and place-names. The participants were then asked for the traditional Dakelh names of the places, any alternate names, dialectal affinity, and literal translations and glosses.[18] They were asked to expound on translations and interpretations in light of the eco-cultural attributes of the places, to share stories about the places, and to focus especially on those places they knew most about.

Once interviews were transcribed, content analysis was performed (Kitchin & Tate 2000; Silverman 2000; McCracken 1988; Holland 1995). The analysis was presented to the community for verification and feedback. Community review of the content analysis was vital in terms of ensuring

that the information was accurate and interpreted properly. A panel of elder experts, known as the Tl'azt'en Place-Names Committee, verified the findings on each of the nine place-names.[19] This protected the indigenous concepts, terms and place-names from being misconstrued, misrepresented or ignored altogether. Several Tl'azt'en Nation members identified by Beverly Bird because of their knowledge of the Tl'azt'en culture and their experience in the conduct of qualitative research, reviewed the written analysis: Renel Mitchell, Beverly Leon, and Deborah Page, as well as Ms. Bird herself.[20] Feedback from the Tl'azt'en Place-Names Committee was incorporated, and guidelines were developed for the inclusion of the toponymic information into the *Yunk'ut Whe Ts'o Dul'eh* culture-based outdoor science camp program (see Heikkila 2007).

Dakelh Toponyms: Repositories of Tl'azt'en Knowledge

Tl'azt'en traditional toponyms exist as more than place designators. If the Tl'azt'en ancestral territory is analogized to a history book or family tree, a memoryscape (see Nutall 1992) upon which the performance of place routines keep alive ancestral knowledge of the land, the toponyms can also be understood to function as symbolic resources, incorporating information on the specific attributes of places and often highlighting a place's role in navigation and its resource potential. Place-names also convey teachings and practices about the relationship between the Tl'azt'enne and their ancestral territory.

Father Morice, one of the first missionaries to come to Tl'azt'en territory, summed up his observations of the terrain as "*par excellence* a land of lakes" (1933: 646). Journeying through the land, one appreciates the aptness of this statement – rivulets, creeks and rivers crisscross the land, feeding into or draining lakes and ponds of various sizes. Since water is such a major entity in Tl'azt'en territory, its prominent role in survival and identity for the Tl'azt'enne is unsurprising. People have fished in streams and lakes, hunted and trapped along shorelines, and depended on water for transport. Water has also played a symbolic role in people's lives; hydronyms, usually of river mouths and lake outlets and paired with the suffix *–whut'enne* (meaning "people of a certain place"), function to describe the different Dakelh communities (see Kobrinsky 1977). *Nak'azdli whut'enne* and *Tache whut'enne* are examples of ethnonyms that define as well as distinguish the groups of Dakelh speakers living by the outlet of Nak'al koh (Stuart River) and at the mouth of Duzdli koh (Tachie River). As bodies of water have been a means of sustenance, mobility and social life for Dakelh-speaking peoples, the significance of water in their worldview is appreciable from understanding the names given to places on or along water bodies as well as the water bodies themselves.

As the research was based on assembling Tl'azt'en TEK associated with the study sample of nine place-names, there was a need to examine the geographical terms expressed in place-names and to document the topographic, biotic, and cultural use descriptions for each place. The result was a discovery of patterns in the gathered information that were indicative of the logic behind Tl'azt'en place-naming. One pattern, in particular, concerns the role of referents in lake place-names as orientating devices for water travel.

Toponyms as Tools for Teaching Navigation

Study toponyms were found to exhibit particles that act as directionals. For instance, place-names with the particles, *-che* and *tizdli* indicate direction into or out of a lake system. Thus, the main Tl'azt'en village, Tache, is where a river flows into Nak'al Bun (Stuart Lake); Chuz tizdli is the place where the Kuzkwa River flows out of Chuzghun (Tezzeron Lake). These particles, unlike the global direction given by a compass, give direction from a local vantage point. In the Tl'azt'en culture, where rivers and creeks were the primary mode of travel in the past, these particles intimate people's reliance on waterways to leave and return to their home territory.

Another example of a directional is *-tl'at*, a suffix sometimes found in lake place-names, denoting "the end of the lake". This particle seems to indicate to travelers on water a movement away from a settlement into more remote areas. For instance, Nak'al Bun (Stuart Lake), Tesgha (Pinchi Lake) and Dzinghubun (Trembleur Lake) host sites that contain *tl'at* as part of their names. Nak'alat, Bintl'at, and Dzintl'at are located away from the outlets of the lake systems to which they belong, as well as from principal villages on these lakes. The ending *tl'at* signifies that traveling to the "end" of the lake is to move upstream, and away from settlements – an orienting function in traveling the

waters of Tl'azt'en country. Together with the aid of other landforms (such as mountains, hills, islands and coves), knowledge of the *-che*, *tizdli* and *-tl'at* parts of lakes guided travelers on water to both up- and downstream places.

Toponyms as Tools for Teaching Concepts of Ecology

Biotic information that hints at the resource potential of places was also found to reside in the study place-names. Chuzghun (Tezzeron Lake) includes the root *chuz*, which translates as "snowflake" (Poser 1998: 71), and refers to the idea that the lake is a "down feathers place", commonly regarded as a nesting place for waterfowl (Catherine Coldwell & Betsy Leon; CPNIS[21], 31/03/04; CPNVS, 27-28/04/05). *Chuz*, in this context, refers to the molting process water birds undergo after the nesting period. The appearance of bird down in water resembles snowflakes (Catherine Coldwell CPNI, 25/06/04). Indeed, Elder Robert Hanson (CPNIS, 03/06/04) felt that the prefix of the place-name, *chuz*, was amiss, and that it should rather read as *ts'uz*, meaning "feather". As *ts'uz* is also the prefix of the word *tsuzchus*, meaning "down feather", this observation conforms to the idea of a "molting lake", the term noted by Akrigg and Akrigg (1997: 265) to describe Tezzeron Lake as a place "where ducks and geese molt".[22]

An alternate interpretation for the etymology of Chuzghun was provided by Stanley Tom and Alexander Tom (CPNI, 21/12/04), *keyoh* holders in the area of this lake, who maintain that the place-name refers to old, hollow trees that line the lakeshore. Since these trees grow thickly on the shoreline, they give the lake the appearance of a basin when viewed from a distance, as from on top of an incline. The trees were described as "getting old and …soft… [they are] hollow and fall apart when [struck]". The interviewees gave the meaning of the prefix, *chuz*, as "soft wood" and the suffix, *-ghun*, as "area", subsequently translating the whole name as "a body of water surrounded by trees" (CPNI, 21/12/04).

Also significant is the consideration of the short forms or contractions of place-names that are used by Dakelh speakers as an alternative to the complete forms of names. Stanley Tom and Alexander Tom suggest that Chuzghun derives from a special term, *chunzool*, "hollow wood", which is contracted to *chuz* in the place-name Chuzghun (CPNI, 21/12/04). Stanley and Alexander Tom's description of the trees that grow along the lake suggests black cottonwood (*Populus balsamifera ssp. trichocarpa*), which can be found growing on low to medium elevation, on moist to wet soil (Mackinnon et al. 1999: 19). Containing whitish, wispy-like hairs, cottonwood seeds drift through the air like "giant summer snowflakes" to germinate (Mackinnon et al. 1999: 19). This phenomenon may correspond to the idea behind "Snowflake Lake", Poser's etymology for Chuzghun (1998: 67).[23] As well, the reference to black cottonwood is reconciled with the interpretation "soft wood" when viewed in the light of Tl'azt'en material culture: the wood of this tree species is highly pliable and was used to make dugout canoes and paddles (Hall 1992). The various interpretations of the toponym suggest lessons in the multiplicity of resources that a location may offer, as well as the multiplicity of interpretations that language may engender.

Toponyms as Tools for Exploring the Seasons and Subsistence Round

Clues to the Tl'azt'en subsistence round appear in certain toponyms. Place-names carrying the *-che* and *tizdli* particles, as well as the place-names Chuzghun and Tesgha contain environmental information pertaining to faunal life cycle and critical habitats such as nesting and refuge sites. While serving as navigational aids, *-che* and *tizdli* place-names also suggest opportunities for hunting, snaring and fishing by the very nature that the places marked by these names are typically those that remain open or ice-free during the winter. River mouths and lake outlets attract birds and mammals, and allow for fishing even when lakes are mostly frozen. In some cases, as with the toponym Chuzghun, stages of the life cycle of animals are evoked. Chuzghun summons up the yearly migration of waterfowl northwards, the birds' need for shelter in lakes and slow-moving rivers and creeks, and the processes of molting and nesting that the birds undergo after they find refuge. This information on waterfowl is part of Tl'azt'en knowledge relating to subsistence. Through observing the seasons, habits and habitats of the birds, it was possible to predict their arrival, to locate when and where they nest, and to develop efficient harvesting strategies. At the time of the molt, waterfowl are at their most vulnerable, being largely grounded and awkward away from water. Accounts of the traditional means of clubbing or netting waterfowl

in the molting stage are given in Morice (1897) and Hall (1992).

Tesgha (meaning "hairy or furry bed or bedding" (Morris Joseph, pers, comm, 10/06/04/; Alexander Tom, CPNI, 21/12/04)), the lake that lies parallel to Chuzghun, is also associated with waterfowl, in terms of it serving as an "overnight resting" place (Betsy Leon, CPNIS, 31/03/04). Geese and ducks flock on this lake before flying off to other lakes in the vicinity to nest because parts of Tesgha are shallow enough for grasses and other semi-aquatic plants to flourish. Such an ecosystem sustains a variety of waterfowl as well as whitefish fry, which typically use the blades and stalks of the grasses to hide (CPNVS, 27-28/04/05). According to Tl'azt'en knowledge, the shallow eastern portion of Tesgha is habitat for whitefish (Robert Hanson, CPNI, 10/06/04). The island, Bintl'at noo, located at the eastern end of Tesgha, once served as a fishing and hunting camp: this lake system was associated with the autumnal activities of harvesting whitefish and waterfowl.

Historical information on subsistence is also part of Dakelh place-names. The toponym Bilhk'a (Whitefish Lake) translates literally as "snare and arrow"[24] (Walter Joseph and Pierre John, CPNI, 02/06/04), indicating the kinds of traditional technology used in subsistence activities. From the 1900s to 1940s, Bilhk'a played an important role as a source of whitefish to people from throughout the Stuart-Trembleur watershed (Hudson 1983). Bilhk'a was also associated with hunting and trapping (Robert Hanson, CPNI, 10/06/04). The name of the lake emphasizes the value of the lake and its surrounding environs as a place where it is possible to hunt, trap and fish. People traveled to this lake in the fall, when whitefish were plentiful in areas of the lake where spawning occurred (Sophie Monk, CPNI, 03/06/04). The wooded recesses of the periphery of the lake contributed to Bilhk'a's significance as they provided access to small and large game.

Toponyms Exploring Environmental Consciousness

The place-name interviews yielded particular insights into the way knowledge is recalled in a culture that has relied on the oral transmission of information. For Tl'azt'enne, routes to *keyohs* and other resource important areas were memorized and unraveled as needed with the help of place-names and their attendant narratives. People relied upon mental maps that contained detailed information about places on the land, gained from knowledge inherited from elders, personal experience or the experiences of others (cf. Brody 1981; Müller-Wille 1984; Collignon 2006). Occasionally, place-names evoke narratives bordering on the mythic and/or involving the superhuman. These accounts, in providing the context needed to understand the significance of places-names and the places they mark, give toponyms depth. Explaining the origins of places and phenomena, being prescriptive and cautionary, or allowing a momentary view of mystical power, these stories carry a subtext that demonstrates the strong spiritual ties between people and the places on which they depend. The sentiment that emerges from these stories can be termed "environmental consciousness", a moral awareness to honor and engage with places on the land. The two examples below provide an understanding of this ethic.

One instance of environmental consciousness is glimpsed in place-name narratives that involve mythic beings. The place-names Chuzghun and Bin tizdli, for instance, are associated with accounts of giant animals that tell not only of medicine power but demonstrate the sacredness of the land. The presence of animals such as giant Dolly Varden trout and frogs in these places suggests an offsetting of human might and a creation of balance in the interactions between humans and animals. Giant animals serve as powerful reminders that not all things in nature can be controlled or known with surety. It is in this regard that places exude a kind of importance or sacredness, which creates awareness and respectfulness in people as they travel through the land.

With regard to place-name narratives involving giant animals, a cautionary message often underlies these stories. An episode of the story of the giant frog of Bin tizdli tells of a time when a man came to seek the frog with the intention of capturing and selling it (Robert Hanson, CPNI, 03/06/04). What ensued was a catastrophe, where the man drowned during a sudden squall that blew in over the lake. The story warns of the consequences that can befall those who trespass or exceed the bounds of another's space and privileges. Place-name narratives dealing with giant animals seem to also relate a time in the past when animals were extraordinary and endowed with special powers that could either aid or thwart humans. For fear of suffering misfortune, people travelled with caution through places associated with such animals, re-

specting their existence and space. Such stories emphasize the importance of respect for all life and for the land.

Giants, human and animal, are also featured in narratives relating to the origins of places. Ulhts'acho, an island upriver from the village of Nak'azdli on Stuart Lake is the namesake of an ogre whose tragic death caused its formation (Catherine Coldwell, CPNI, 25/06/04). The story not only tells of the origin of the island and a nearby islet, but relays a moral about respect for life and nature. Gluttony made Ulhts'acho kill his dog – his only companion – to get at the lingcod livers in its stomach. After carelessly flinging its carcass into the lake, Ulhts'acho realized the heartless deed he had committed. He waded out to retrieve the body of his dog, but never returned. His body, and his dog's, after being tossed by the waves and swept along by the current, finally settled and became an island. The story of Ulhts'acho exemplifies the interdependence between humans and animals, and cautions against impulsivity, greed and mistreatment. It touches on the continuity between life and the earth – people and animals can be transformed after death into landscape features that endure through the seasons, and ever remind of proper behavior.

Toponyms as Tools for Discussing Local Governance

Environmental consciousness is also intimated in the workings of the *keyoh* system and related toponymies. *Keyoh* or family territories are defined according to both physical and social bounds. On a material level, *keyoh* limits are marked by "posts", or "topographical partitions" by way of hills, mountains, watersheds, meadows, and trails (Margaret Mattess, CPNIS, 19/05/04). Lakes and islands, which can also be claimed as part of a family's *keyoh*, are also used as posts (Stanley Tom & Alexander Tom, CPNI, 21/12/04). Although *keyohs* are thus demarcated, there remains a degree of reciprocity in sharing land and resources. This is observed in the social ties between *keyoh* holders and others. On a social level, *keyoh* boundaries are maintained through respect and deference towards the family members who have disposition rights to the piece of land.

In interviews, participants were reluctant to talk about places in somebody else's *keyoh*. This reluctance was apparently steeped in anxiety of trespassing on and misrepresenting another's authority over and knowledge of a specific area used for subsistence. The unwillingness to discuss another's *keyoh* was explained cogently by Walter Joseph (CPNI, 02/06/04), who remarked that talking about places in someone else's *keyoh* is an intrusion synonymous to crossing or cutting through the *keyoh* without having first informed the owner. While *keyoh* boundaries are not absolute, there is an unspoken rule between *keyoh* holders and others that obtaining permission to use or travel through the *keyoh* is obligatory. This is a tacit acknowledgement of the *keyoh* holder's tenure and authority over the *keyoh*. Even conversing about the place-names in another's *keyoh* is a breach of respect and trust: the place-names can be specific to the *keyoh* in which they belong, forming not only a part of the owner's knowledge of the *keyoh* but standing also as authoritative symbols of that knowledge. Through the *keyoh* system, use of land is controlled, keeping harvesting and regeneration of resources in balance.

The place-name content presented in this section illustrates the wealth of meanings to be appreciated from studying indigenous toponymy. Because Dakelh toponyms often depict physiography or the fecundity of places in the context of the Tl'azt'en seasonal subsistence round, their application in curriculum can serve to enrich understandings of local ecologies, including particular TEK associated with specific places or ecosystems. Furthermore, because of the metaphoric power of place-names to transform places in the physical landscape into places that feed and instruct the moral imagination, the important questions of environmental consciousness, connected to sense of place, cultural survival and self-determination, arise for reflection. Such content is important in the makings of culturally-appropriate curriculum to inculcate a strong sense of self and to build appreciation for ancestral teachings.

Conclusion

Dakelh toponyms continue to occupy an important place in the make-up of Tl'azt'en identity – place-names aid remembrance of people and events in the past, and are markers of a continued Tl'azt'en presence on the land. Knowledge of toponyms demonstrates personal experience with the land, and to learn place-names is to learn about the land. Tl'azt'enne who were interviewed during the course of the research have indicated that

place-names represent much more than the places themselves: to know place-names is to be also acquainted with the narratives and memories linked to the places marked. In this way, toponymy contributes to the continuity of oral tradition: place-name referents, meanings, attendant narratives and memories are relayed when people know and use toponyms.

An interesting point that interviewees brought up time and again during the research was the notion that traveling to named places is of utmost importance to appreciate the essence of place-names. This point supports the idea that to truly know place-names, one must have a relationship with the land: traveling and harvesting are ways of establishing a personal connection with the land. Travel entrenches patterns or systems of place-names in people's consciousness, binding them with places on the landscape, which serve as repositories of ancestral knowledge.

For Tl'azt'enne, to whom the land is an inalienable part of cultural identity and heritage, the link between rights to land and rights to language and culture is embodied in the idea of remembering places and using Dakelh place-names. Place-names provide the opportunity for Dakelh language maintenance and the learning of oral tradition, both vital issues underlying Tl'azt'en cultural continuity. Knowing the place-names and stories of one's homeland is part of knowing one's language and heritage. But the intensity of the connection between knowing the toponymy and stories of one's homeland and knowing one's language and heritage depends on the health of the land and the intactness of places on the land. The well-being and completeness of places are vital not only for place-names to be known and stories to be remembered but ultimately for the continuity of TEK and indigenous identity. Because of the interdisciplinary nature of the subject matter of the study place-names (i.e., navigational, environmental, historical, ethical, political), we believe that the information will find relevance to environmental, science and social studies applications in outdoor science camp programs. As importantly, utilizing indigenous toponymy in a community-driven educational project like the *Yunk'ut Whe Ts'o Dul'eh* science camp program promotes knowing, cherishing and protecting places through direct, personal involvement with the land.

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NOTES

[1] Borrowed from Pierre Bourdieu (1977) to mean a framework for the objects of knowledge consisting of a society's social, historical and political structures, perpetuated through performance.

[2] Three terms used in Canada to refer to aboriginal peoples' knowledge systems are: Traditional Ecological Knowledge (TEK), Indigenous Knowledge (IK), and Traditional Knowledge (TK). There is no absolute definition for these terms (see Berkes 1993, McGregor 2000) other than they indicate the knowledge held by a particular aboriginal community that has been transmitted through time and that assumes an emotional and spiritual connection with the local landscape. At times, the usage of the terms IK and TK is observed in contexts where there is a need to distinguish knowledge specific to indigenous communities from knowledge stemming from the western scientific tradition. TEK is used to refer more specifically to indigenous peoples' knowledge of their local environments, including their values concerning sustainable and responsible use of natural resources (see Grenier 1999). TEK is the term that Tl'az'ten Nation has chosen to use to identify the knowledge of its people (see Tl'azt'en Nation n.d. a; Tl'azt'en Nation and UNBC CURA 2005); hence, out of deference to this choice, TEK is used in this publication when discussing aboriginal knowledge, including the knowledge shared by Tl'azt'enne. (Tl'azt'enne is the plural collective noun for Tl'azt'en.)

[3] The term Athapaskan refers to a branch of the Na-Dene speech family that subsumes languages such as Gwich'in, Dogrib, Slave, Dakelh, Western Apache and Navajo. Each of these languages belongs to one of the three Athapaskan subfamilies – northern, Pacific and Apachean – representing the range of Athapaskan speakers from interior Alaska to western Canada, the Pacific Northwest, northern California and the American southwest. Na-Dene expansion occurred across the Bering Strait into present-day Alaska toward the end of the final great glacial period

(c. 10 000 BC) (Vanstone 1974). In the postglacial period an east- and southward spread took place into what is today the Yukon Territory and interior British Columbia, where the ancestral Na-Dene became adapted to a subarctic environment abounding in large and small game and fish. The new environments catalysed considerable cultural change as observed in the distinct cultural make-up of the various Athapaskan sub-families: linguistic evidence suggests a common Athapaskan lineage (Vanstone 1974).

[4] For more information on this research forest see Fondahl and Atkinson (2007) and Grainger et al. (2006).

[5] The *Yunk'ut Whe Ts'o Dul'eh* (We Learn from Our Land) program, developed mostly by Renel Mitchell, is held on the John Prince Research Forest. For more information see Mitchell (2003) and http://www.cstc.bc.ca/cstc/69/the+chuntoh+forest+education+society.

[6] This project was funded by the Social Sciences and Humanities Research Council of Canada, under their Community-University Research Alliance (CURA) program. It built on several years of previous collaborative research between Tl'azt'en Nation and UNBC.

[7] Some examples include: the Reconnecting with the Land program in Manitoba, the Big Trout Lake land-based program in Ontario, the Nutchimiu-Attuseun Training Centre on-the-land program in Quebec, the Avataq Cultural Institute Inukjuaq and Kuujjuaq summer camps in Nunavik, the Mi'kmaq and Wuastukwiuk (Maliseet) cultural-enrichment summer camp in New Brunswick, and Rediscovery summer camps held in several parts of Canada (INAC 2006). These programs deliver traditional land-based skills and environmental and cultural education to children and youth of aboriginal ancestry, and include the participation of community elders as instructors. On-the-land programs are in some instances initiated by schools – in the Northwest Territories, for instance, schools such as Sir Alexander Mackenzie School (Inuvik), Chief Julius School (Fort McPherson), and Paul William Kaeser School (Fort Smith) organize outdoor experiential camps as part of their curricula to teach students bush survival skills, environmental awareness and traditional knowledge.

[8] Tl'azt'en Nation has been in treaty negotiations with the provincial and federal governments since 1993. A treaty, which would result in recognition of aboriginal land ownership, governance, resource management and economic independence, has yet to be signed.

[9] Beverly Bird, a respected Tl'azt'en member, had long-time involvement in Tl'azt'en cultural and treaty research, and was Tl'azt'en co-leader of the co-managed CURA project's TEK research stream. She suggested place-names as a topic for a thesis project in which Tl'azt'en Nation would be interested.

[10] A series of interviews conducted to produce Tl'azt'en and Nak'azdli elder biographies.

[11] Tl'azt'en Nation is a member of the Carrier Sekani Tribal Council, along with seven other Dakelh- and Sekani-speaking First Nations.

[12] Tl'azt'en Nation has chosen to restrict access to some of its internally-generated maps and documents during treaty negotiations, due to the potentially sensitive nature of these materials.

[13] No published information was available on four of the chosen place-names: Chuzghun koh, Hadoodatelh koh, Bin tizdli, and Bintl'at noo.

[14] Interviewees included Beverly Bird (Researcher, Tl'azt'en Place-Names Study 1996), Renel Mitchell, (Researcher, Traditional Use Study 1999), and Margaret Mattess and Pauline Joseph (Researchers, Tl'azt'en Place-Names Project 2003).

[15] Several people explained that knowledge of the *keyoh* and livelihood related to hunting and trapping is passed down from father to son. The pool of pretest and formal interviewees involved individuals ranging from 40 to 80 years old, with the majority of individuals being male. Only one younger interviewee was nominated; he was considered to be "an exception to the rule", as most youth do not know the Dakelh language or the land as well as their fathers and grandfathers.

[16] Tl'azt'en researchers feel strongly about giving credit to Tl'azt'enne who have contributed their knowledge or perspectives to research projects, rather than preserving anonymity, on condition that the participants are comfortable with having their identities revealed. The consent form used in this study gave interviewees the option of electing to have their name either mentioned or withheld in publications; all interviewees chose to be identified.

[17] An aerial photograph of the John Prince Research Forest area was also available to research participants as an extra recall aid; most participants preferred the map as a way to locate and remember places over the aerial depiction.

[18] Beyond a literal translation of a place-name, it is useful to obtain a gloss or meaning based on its root words. This is important in making the place-name understandable to the non-native speaker. An example is the Dakelh place-name Tsinteltehnoola, literally "burbot [lingcod]-underwater-island" (Poser 1998: 302). A gloss, "island where lingcod are found underwater", enables speakers of English to form a general understanding of this toponym's meaning.

[19] The Committee consisted of Catherine Coldwell, Mildred Martin, Pierre John, Sophie Monk, Helen Johnnie, and Betsy Leon. Mrs. Coldwell and Mrs. Leon are members of the Nak'azdli Band, whose traditional territory borders that of Tl'azt'en Nation's to the south; many individuals of the two communities are related and do possess extensive knowledge of places in both territories. Mrs. Coldwell is a founding member of the Carrier Linguistic Committee. She collaborated with various linguists on dictionary, place-name and traditional plant use projects, and continues to be involved in Dakelh language and cultural programs. Beverly Bird, a Tl'azt'en member, is her daughter.

[20] All four women have worked in various capacities in Tl'azt'en-led and Tl'azt'en–UNBC joint research projects.

[21] CPNI, CPNIS and CPNVS stand for CURA Place-Names Interview, CURA Place-Names Information Session and CURA Place-Names Verification Session, respectively. The interviews and sessions were taped and coded by date.

[22] "Tezzeron" was unanimously regarded by research participants as a corruption of the native name, Chuzghun. Many instances of the kinds of corruptions produced by the early surveyors and travelers in Carrier territory are found in Morice (1902, 1933). Some corruptions are based in inaccurate transcriptions of the native name, which have the effect of distorting or excluding the original sounds of the name. Other corruptions are mistakes in interpretation such as designating whole geographical features by a name reserved for a part on or within them, or giving a native geographical term of a feature as its proper name.

[23] Father Morice's rather different interpretation of the etymology of Chuzghun is also worthy of note. He gives the meaning of the name as "paddle after lake" or Paddle Lake (1933: 648). Discrepancies, however, exist between Morice's translation and that espoused in more recent Dakelh language and cultural research. Morice transcribed the prefix of Chuzghun as *tces*, which corresponds to *chus* rather than *chuz* (Poser 2000). The word *chus* does mean "paddle" and may reflect Morice's familiarity with local knowledge of the lake as a place to obtain wood for making canoes and paddles. This may have had an influence on how he transcribed and interpreted the name. Another discrepancy is Morice's recording of the name of the lake as Tces-ra-ñ-pen [Chus-gha-ng-bun], whereas the Carrier Linguistic Committee (1974) and Poser (1998) give it as Chuzghun.

The suffix *-ghun* was a point of obscurity in the place-name verification process, as none of the Tl'azt'en Place-Names Committee members could confidently explain the meaning of the term (CPNVS, 27-28/04/05). Speculations were made about *-ghun* being a short-form for *bunghun* (lake). However, while *-ghun*, *bun* and *bunghun* all are designators in lake names, *bun* and *-ghun* are both representative of big lakes (e.g. Nak'al bun and Chuzghun), while *bunghun* is a designator for smaller lakes found within *keyohs* (Morris Joseph, pers. comm., 26/03/04). Maps of Dakelh place-names (CLC 1974; CSTC 2004) show *bun* and *-ghun* referencing lakes of considerable breadth, and *bunghun*, the smaller lakes that intermittently dot the landscape. The suffix *-ghun* was also thought to denote a lake located along a ridge (CPNVS, 27-28/04/05; CPNVS, 16/12/05).

[24] *Bilh* or "snare" is an all-embracing term for any device that snags or catches, and includes such implements as snares, snare wire, nets and webs (Poser 1998: 60).

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