

“A Place That’s Good,” Gitksan Landscape Perception and Ethnoecology

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The Gitksan of northwestern British Columbia live in a mountainous, densely forested environment. In Western ecology, plant communities are based on the dominant species or geomorphic features (e.g., floodplain cottonwood forest, sphagnum bog). Gitksan landscape perception is organized with reference to mountains and rivers, to drainage basins and divides. These orienting perceptions are bound up with the territory system, where the landscape, including drainage basins, slopes of mountains, and river fishing sites, are delimited as owned properties of House groups. Boundary landmarks and significant places within the territory are named. Places are most frequently discussed by name. Vegetation is usually discussed from the perspective of individual plant species. Gitksan terms collected for habitat types include swamp, laalax'u; meadow or treeless area, lax'amaaxws or lax'aamit; and a generalized bush/forest term, sbagaytgan, 'among the trees'. Generalized habitat descriptions such as 'in the swamp' or halfway up the mountain indicate ecological setting.

KEY WORDS: landscape; ethnoecology; Gitksan; British Columbia; toponyms.

INTRODUCTION

When I spoke to Art Mathews, Dinim Gyet, a Gitksan Lax Gibuu (Wolf Clan) Chief, about the sacredness of the Gitksan relationship to land, he told me that I should attend a totem pole raising which was to occur the following weekend in the nearby village of Git-anyaaw. The

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sacred connection to the land was what the totem pole raising was all about, he said. A totem pole bears a series of crests, which are iconic emblems of events in the history of the ancestors of the Chief. The Chief (*Sim'oogit* or *Sigidimnak*) wears his/her chiefly regalia, which also bears crests emblematic of the ancestors, and sings songs or tells histories which attest to the long relationship of the people with their territory. The other chiefs and people who attend and assist with the pole raising, and come to the pole raising feast, validate the relationship symbolized by the displayed crests and dances and recited histories and songs, and act as witnesses to the implicit compact between the people and their land. This relationship is not one of stewardship, which implies a certain inequality of the participating parties, but is one of mutualism. The land takes care of the people, who in turn, through their respect and use of the resources, take care of the land and enable the cycle to continue.

I said to Dinim Gyet,

. . . [Y]ou have to go to aboriginal title and land claims because it's like, you can't give up your land, because it was given to you by the Creator to be there and—is that right?

He replied,

That's what our ancestors say, 'cause the land and language go together, that's your identification. You say you own this, your land, most of the place names are all in our language, hey,' cause they say that the Creator gave it to us and he give us the names to go with it. Not by accident, but most of them, place names, are almost like totem poles to us. It might be an event that happened—in that certain area, so they just name the whole area. It's like a oral history.. . . Place names are events that happen, that really happen to them. So that's why they really believe that their whole territory is sacred. You know, like I say, place name might have been a war or famine or whatever, and it's a constant reminder. All that the whole territory is like that. (Transcript, 9/15/96)

BACKGROUND AND SETTING

The Gitksan of northwestern British Columbia live in a mountainous, densely forested environment along the drainage of the Skeena River (Fig. 1). They are traditionally speakers of an Interior Tsimshianic language (*Simalgyax* or *Gitxsanimx*) related to Nisga'a and Tsimshian. Traditional subsistence was a mixed fishing, hunting, and gathering strategy, with summer dispersal and winter aggregation in large, permanent villages. Modern residence is primarily in one of six villages along the central portion of the Skeena River and two of its tributaries, the Kitwanga and Kispiox rivers, which are approximately in the same areas as precontact winter villages and in adjacent towns and cities. Like other cultural groups of the northern

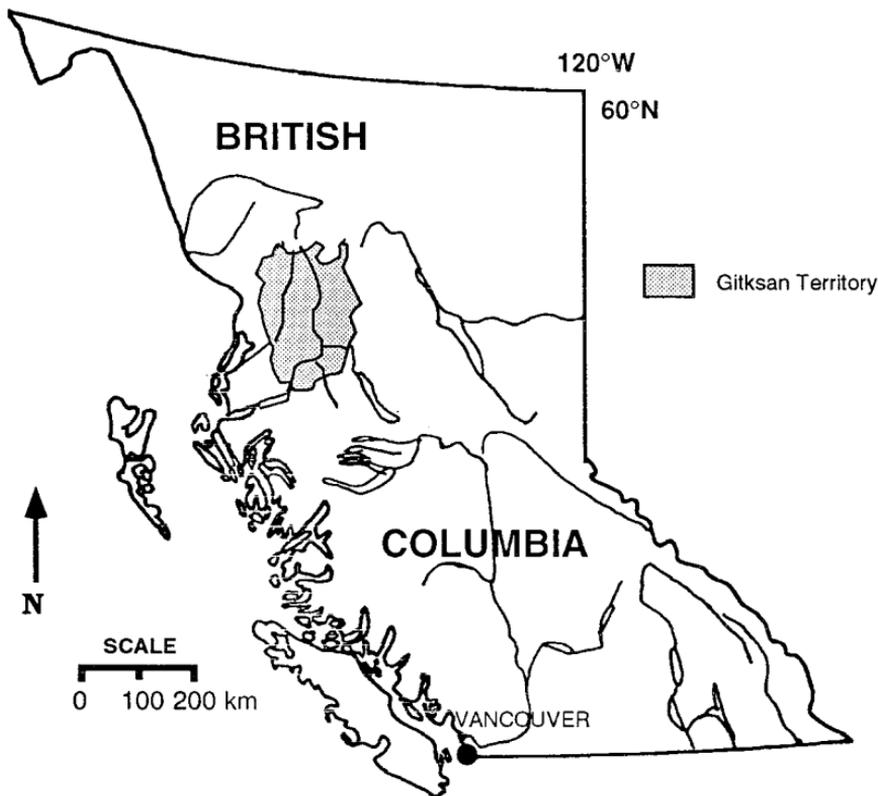


Fig. 1. Location of Gitksan territories in British Columbia. The area shown here includes the territories of all of the Gitksan villages, including Git-anyaaaw, and does not indicate the boundaries of the Gitksan Land Claim or the Gitanyow Land Claim.

Northwest Coast, Gitksan society is hierarchical, with matrilineal corporate groups called Houses (*Wilp*) headed by Chiefs. The Gitksan relationship to land differs from that of most Western peoples; for the Gitksan, people are part of the land, in an inextricable and even social relationship with it. The health of the land and that of the people are intertwined, and there is, as we have seen, a spiritual value to land and the relationship to other species.

Vegetation science, landscape ecology, and geography deal with patterning of landscape from a Western perspective. Such scientifically ordered perceptions and classifications underlie various types of land management, having important ramifications for such fields as forestry and agriculture. Modern ecological classification schemes derive from Western natural science and, as such, reflect both the tenets of Western empirically based science and traditional European cultural beliefs about land and the rela-

tionship of people and land. Traditional perceptions of land and the relationships of people and land by other cultures can provide different, and perhaps complementary, lenses through which to observe and order the world and to understand the place of people on the land.

Recently, I was strongly moved by reading a paper by Keith Basso on Western Apache place names in which he discusses the disorienting totality of having to learn both an unfamiliar landscape and the ways in which a specific indigenous people perceive, order, and talk about it (Basso, 1990b, p. 138). Unlike Basso, I did not come to the Gitksan land as a stranger. I had lived in northwest British Columbia for 7 years before I began to work with Gitksan elders. As I was a long-term resident of forested and mountainous areas of northwestern North America with a strong background in botany, geography, natural history, and formal ecology, the land already told me stories and was rich in my perception. I was also, like the Gitksan people, a traveler on the land, a forager, with my eyes alert for potential resources and camping places. When I started to work with Native elders, I began by using my own perceptions and knowledge of the land as a framework into which to slot the information they shared about plants used and places traveled.

The information upon which this paper is based was collected in a series of open-ended interviews and conversations with Gitksan people in the course of a long-term research program in Gitksan traditional healing, ethnobotany, and ethnoecology. In all, my research with the Gitksan has spanned the period from 1985 through 1998 and has included contributions from more than 60 people in more or less formal contexts. Further information on the study area, the Gitksan, and my methodology is given by Johnson (1997, 2000a).

The first transformation in my vision of the land in northwest British Columbia had occurred when I worked with a Native fisheries management program a year or so before my formal work on ethnobotany began. At that time I came to perceive the significance of many of the inconspicuous truck tracks or foot trails along the rivers and understand their significance as the overt signs of the myriad salmon fishing sites. Only then did I begin to see, with more Native eyes, that Xsan "the River" is the lifeblood of the land, bringing the riches of the salmon to sustain the people. The landscape took on new meaning for me. Gradually, my Native friends and acquaintances shaded in my perceptions of the land with their own stories about the location of a trapline or trail, the name of the person owning a cabin, or the story of an event told in their oral histories which was placed on some seemingly anonymous ridge or rounded hill.

I began to understand that for the Gitksan, the Nisga'a, the Haisla, the Wet'suwet'en, there is no such place as wilderness. The world is not

divided into the natural and the cultural, forever in opposition, wholly different in kind. For the Native people of Northwest British Columbia, nature does not operate by a different set of rules than humankind. Nature is *not* there for exploitation or alteration at the whim of humans (the Eurocanadian prodevelopment view) or to be preserved from the ravages of humans who have no part in it (the Eurocanadian preservationist view) [see extended discussions of these issues by Johnson Gottesfeld (1994b) and Johnson, (2000b)]. The landscape is home. Territories and people are inextricably associated. The history of the people is written *on* the land, which is their larder as well as an active partner in their long history. It bears witness to the successes and tragedies of the ancestors, lessons learned and passed down. It yields the resources necessary to sustain the people, but it must be acknowledged and treated with respect. This background prepared me to examine my own understandings of landscape and of ecology and, finally, led me to investigate indigenous concepts of landscape and ecological classification.

GITKSAN LANDSCAPE PERCEPTIONS AND TERMS

Gitksan landscape perception differs from that of Western ecology. In Western ecology, plant communities are described based on the dominant species or geomorphic features (e.g., floodplain cottonwood forest, sphagnum bog, montane forest, hemlock forest, birch woods, black spruce swamp). My attempts to elicit parallel terms in Gitksan were met by confusion. Terms collected for ecological or habitat features, in Gitksan or local English dialects, include swamp, *laalax'u*; meadow or prairie, *lax'amaaxws* or *lax'aamit*; and a generalized bush/forest term, *sbagaytgan*. In addition, topographic features, such as stream or river (*aks, xsi-*), lake (*t'ax, t'aam*), and mountain (*sga'nist*) are recognized and named. Trapline areas or territories may be referred to in English as a mountain. Elder Kathleen Mathews said, regarding berry patch burning,

Burn only on your own mountain. Not others. If you burn the other place you get the blame. (Interview notes, 12/11/90)

Locations may be discussed as 'on the mountain' or 'halfway up the mountain' as well. Describing berry patch burning, elder Peter Martin said, "They used to burn for berries halfway up the mountain" (Interview notes, 4/24/91).

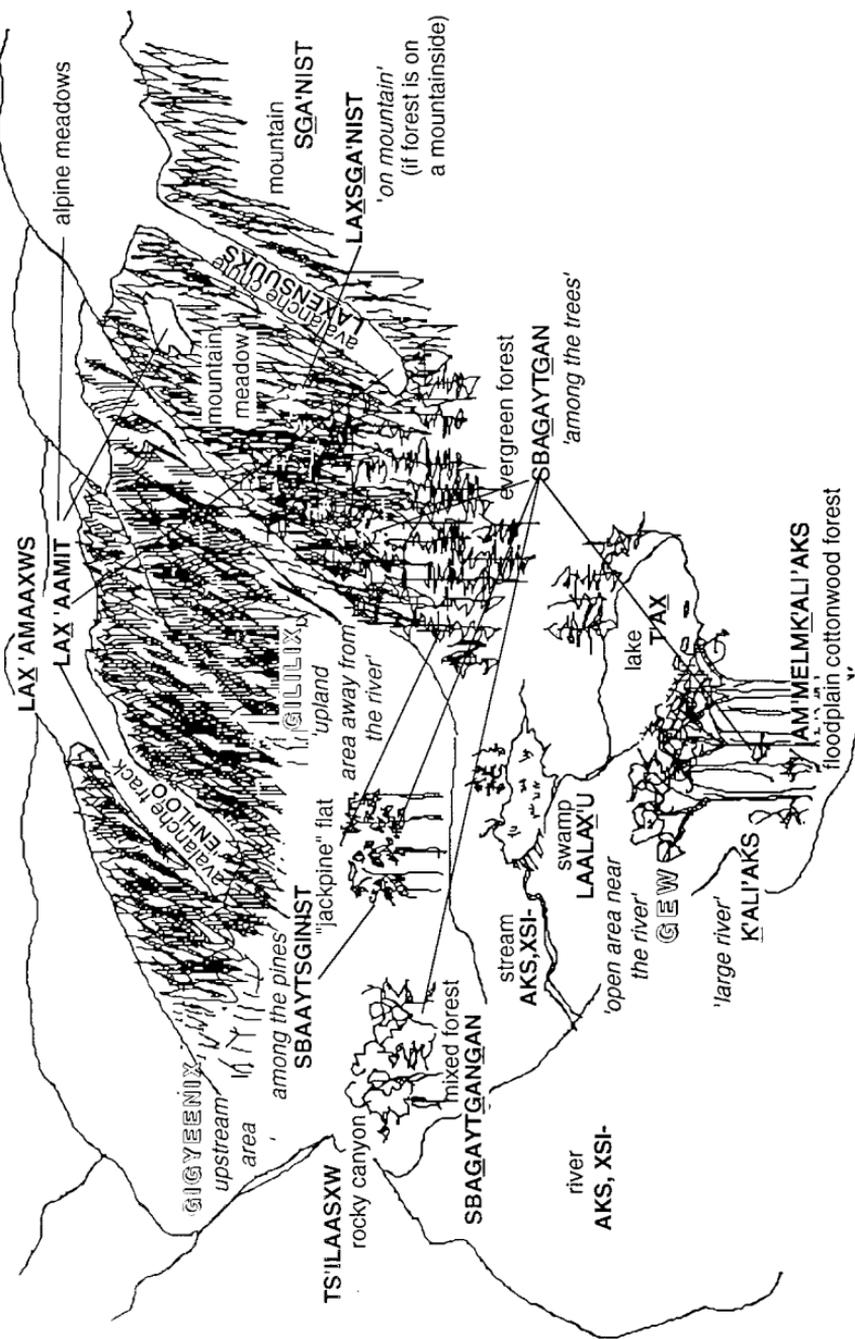
Description of the landscape appears to be primarily topographic and to deal with the presence or absence of standing water (swamp, *laalax'u*)

(Fig. 2) or trees, with the absence described by the term *lax'aamit* or *lax'amaaxws*, 'place that's good, that has no trees' (Gottesfeld Gitksan Dictionary notes, 1988) or prairie, encompassing English terms such as meadow, clearing, avalanche track, and alpine tundra, and the presence indicated by *sbagaytgan*, glossed by modern bilingual people as forest, which literally means 'among the trees'. Snow or landslide areas, also prominent in this mountainous and heavily forested environment, can also be named *hlo'o* ['(plural objects) slide'] and differentiated into snowlides ('*yagahlo'o*, the place designated *en hlo'o*), rockslides (*hlo'omsga'nist*, 'slide-mountain'), and 'timber avalanche', *hlo'om gan* the latter a chief's name found among the Wet'suwet'en, a borrowed Gitksan designation).² An old landslide or snowslide scar, a stripe of disturbed and deforested slope, can be termed *laxensuuks*. The forest condition, by far the most prevalent broad class of vegetative cover, appears to be comparatively unmarked. Forest can be referred to as *sbagaytgan*, 'among the trees'; *galdo'o*, backwoods; or *sbagadegantx*, 'being out in the bush', roughly, forest. Forest or bush seem to contrast primarily within the village, around people.³ In comparison with the number of forest types described by forest ecologists in the region, one could say that the Gitksan class of forest is underdifferentiated (see Fig. 3–5).

A term for 'burned over area', *lax'anmihl*, is also used. This can be seen as equivalent to seral, or immature. A burn can drastically alter the otherwise ubiquitous forest cover and initiate succession to scrub and immature forest. It is particularly significant in the ecology of important food plants such as berry bushes. The Gitksan, like many other North American aboriginal peoples, managed landscape through controlled burning, particularly for berry enhancement (Johnson Gottesfeld, 1994). Berry patches are recognized with a distinct term, *ansimaa'y*. Berry patches are places with good concentrations of harvestable berries; these are usually productive localities for species of huckleberries or blueberries. This term may refer more to territorial prerogative than to an actual vegetation type; a parallel term is also given for hunting grounds (*ansilinasxw*) and for types of places such as camping places and net sites in the list of "Territorial Words" in the Gitksan Glossary prepared for the Delgam Uukw Court Case (Gitksan Interpreters, 1987).

²Although Witsuwit'en is an Athapaskan language related to, but distinct from, Carrier, the Gitksan and Wet'suwet'en have lived in adjacent areas and feasted together for a prolonged period of time, resulting in numerous loan words, especially of chiefly titles and biological terminology, in both languages.

³This sort of organizational axis can also be recognized in the Nuaulu (Ellen, 1993) and the Kalam of New Guinea (Bulmer, 1979), as well as the Sierra Nahua, discussed later in this paper (Taller de Tradición Oral del CEPEC and Beaucage, 1996).



downstream area or region

Imj '98

Fig. 2. Generalized landscape diagram, with Gitksan landscape terms in boldface capitals and glosses in italics with single quotation marks. English habitat and topographic feature terms are in lowercase roman letters. Detailed river terms not shown.

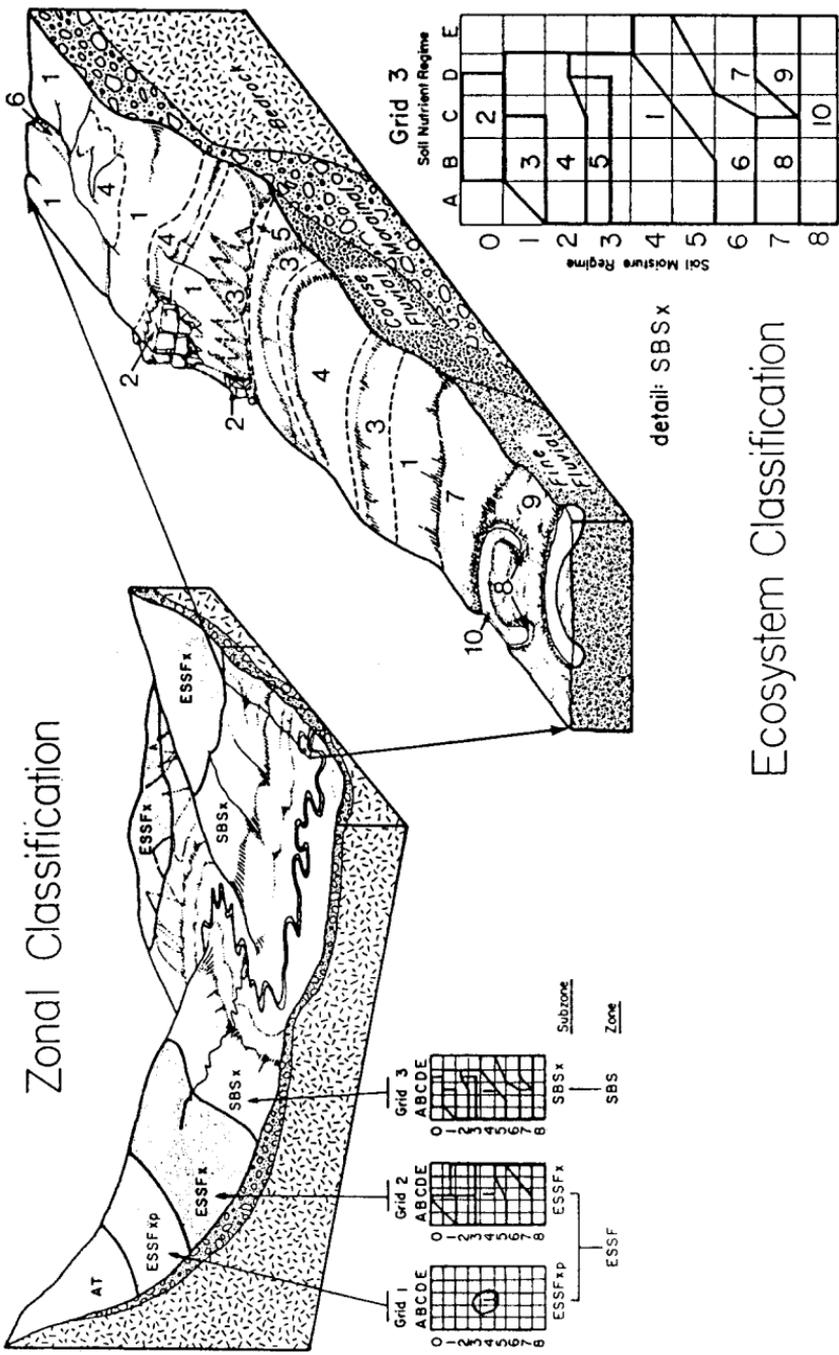
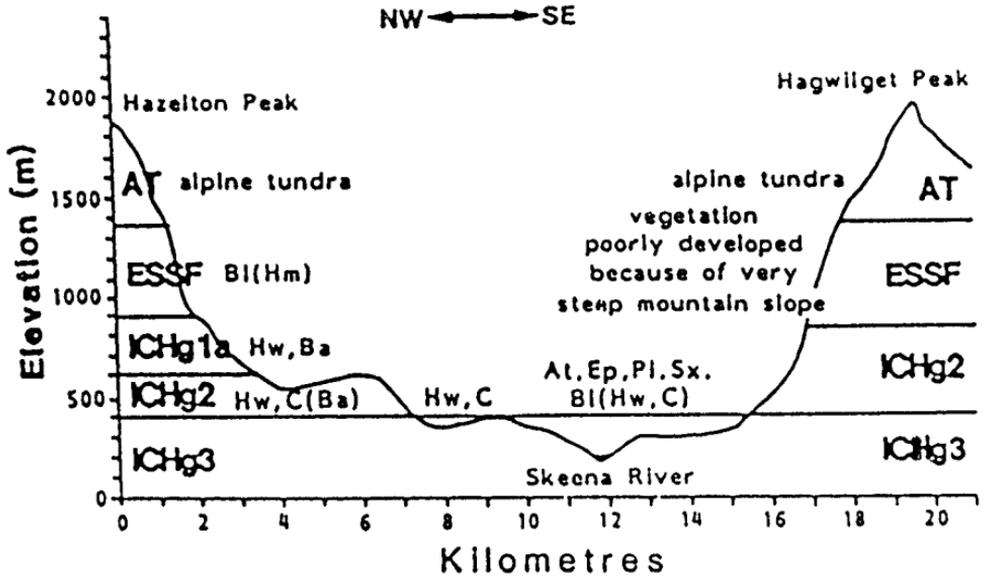


Fig. 3. Sub boreal spruce zone. Schematic relations between zonal and ecosystem levels of classification. AT, alpine tundra zone; ESSFx and ESSFxP, hypothetical forested and parkland subzones, respectively, of the Engelmann spruce-subalpine fir zone; SBSx, a hypothetical subzone of the subboreal spruce zone. Reproduced with permission from Pojar *et al.* (1984).

(a) SKEENA VALLEY AT HAZELTON



(b) BULKLEY VALLEY AT SEATON

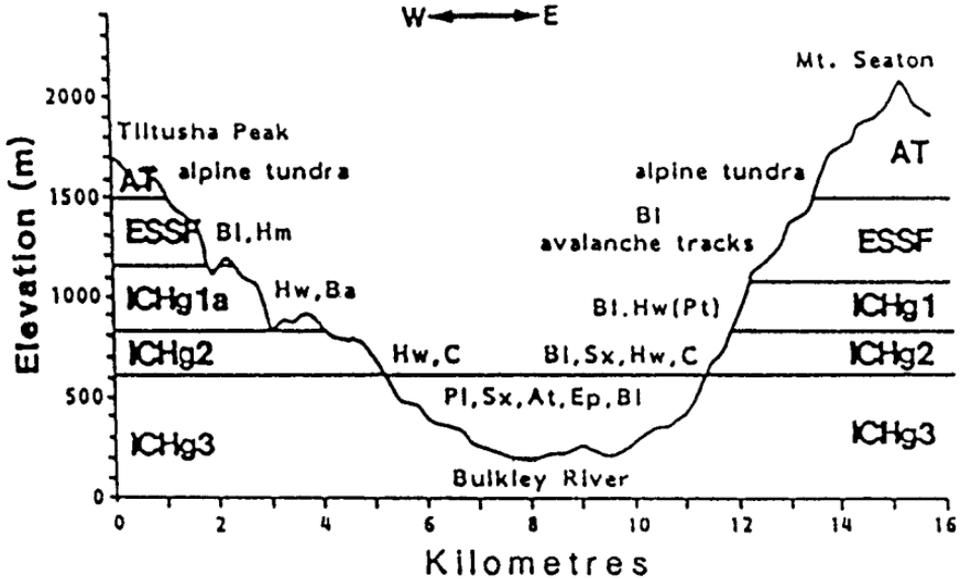


Fig. 4. Interior cedar-hemlock zone: valley profiles showing distribution of biogeoclimatic units. ICHg3, Hazelton variant of the interior cedar-hemlock zone; ICHg2, the Nass Basin variant of the interior cedar-hemlock zone; ICHg1, a higher-elevation cooler variant of the interior cedar-hemlock zone; ESSF, Engelmann spruce-subalpine fir zone; AT, alpine tundra. Smaller letters are the symbols for dominant trees: C, western red cedar; Ba, amabilis fir; BI, subalpine fir; Hm, mountain hemlock; Hw, western hemlock; Sx, hybrid spruce; At, trembling aspen; Ep, paper birch. Reproduced with permission from Houseknecht *et al.* (1986).

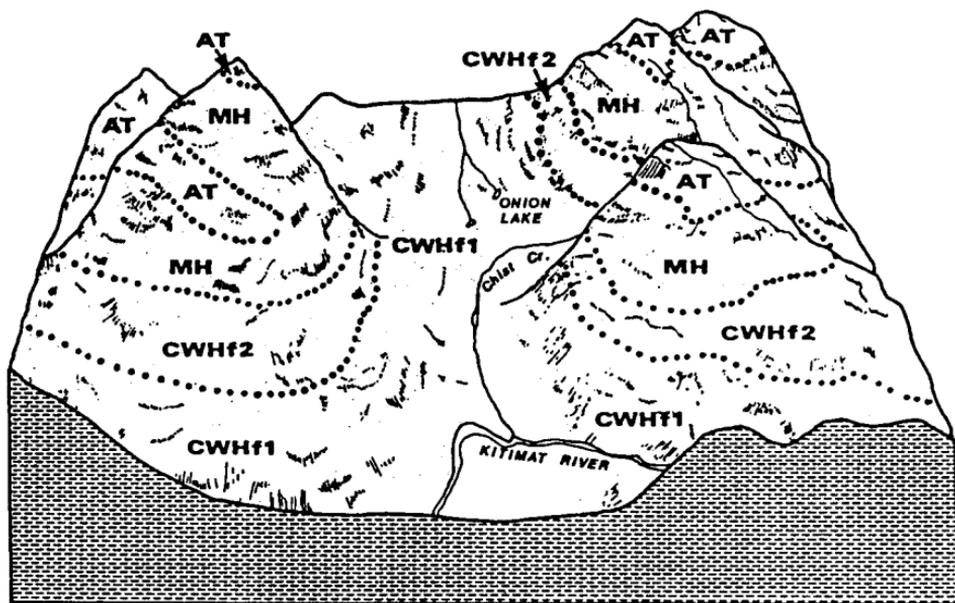


Fig. 5. Coastal western hemlock zone. Oblique view looking northward from the Kitimat River Valley. CWHf1, low-elevation coastal western hemlock zone; CWHf2, higher-elevation, cooler coastal western hemlock zone; MH, mountain hemlock zone; AT, alpine tundra zone. Reproduced with permission from Standish *et al.* (1987).

Gitksan landscape perception is organized with reference to mountains and rivers, to drainage basins and divides, quite natural perceptions when the nature of the landscape is taken into account. Lakes are also salient features that are named and often figure in oral histories, sometimes as the abodes of supernatural monsters overcome by ancestors.

The latter orienting perceptions are intimately bound up with the way that the landscape, including drainage basins and river fishing sites, or mountains forming one side of major lakes or rivers are delimited as owned properties of House groups. The names and histories of this land form the 'deed' to the property, demonstrating ownership in the feasthall, and are thus proprietary (cf. Sterritt *et al.*, 1998; Johnson 1997). For this reason, I emphasize generalized features of landscape perception and deal only in a generalized and superficial way with the rich and informative toponyms of the Gitksan.

General orientation is also by drainage and topography (Table I). Basic orienting terms include *gew*, which has the sense of a relatively open area near the river, that is, bottomland; *gililix*, upland area away from the river; *gyeets'*, downstream area or region; and *gigyeeenix*, upstream area (Rigsby, 1995, pers. commun. Art Mathews Jr., 1997, pers. commun.).

Table I. Gitksan Terms of Orientation^a

Gitksan	Meaning
<i>Gew</i>	Open area near the river; cf. 'bottomland'
<i>Gililix</i>	Upland away from the river; cf. 'slope'
<i>Gigyeenix</i>	Upstream area
<i>Gyeets'</i>	Downstream area or region

^aSources: Rigsby (1995, pers. commun.); Mathews (1997, pers. commun.).

Vegetation is approached by discussion of specific species and where they can be found (Table II). Plants are almost always discussed in terms of their uses (or their disutility). Generalized habitat indications such as in the swamp and halfway up the mountain suffice to indicate the ecological setting. Often a specific locality that the consultant has used will be indicated, usually on their own or a relative's territory, sometimes along a travel corridor such as the old Telegraph Trail.

The terms for forest are somewhat problematic (Table II). Beverley Anderson also placed two labels in an early version of Fig. 1. I drew in 1988: *sbaaytgan* (labeled by me as evergreen forest, shown on the mountain-side) and *k'ali'aks* (labeled by me as floodplain forest, shown as cottonwoods on the flat beside the river). Later, Art Mathews Jr. concurred in the use of *sbagaytgan* for forest and indicated that a cottonwood forest along the river could be described as *am'melmgali'aks*, 'cottonwood along the riverbank'. According to Bruce Rigsby (1995, pers. commun.), *sbagaytgan* means 'among the trees' and is a descriptive, rather than a conventional phrase. However, several informants offered it as the general word for 'forest'. Rigsby states that *k'ali'aks* can be used to indicate a large river, such as the Skeena or the Nass. (The *aks* means 'water', 'stream', 'river'). Thus, these terms actually may not indicate *vegetation* types, but may be descriptions of types of *places*.

People can construct descriptions of places to parallel Western ecological terms, such as *sbagaytgangan* ('among the trees/trees') to indicate mixed forest and *sbagaytgan am 'mel* ('among the trees/cottonwood') to discuss a cottonwood forest. As I heard such terms only in response to my own place type lists and diagrams, they could be verbal translations of my ecological classes, rather than types of places distinguished in Gitksan classification. However, Art Mathews, Dinim Gyet, spoke of *sbaaytsginist* when describing the reputed health-promoting properties of pine stands, so some differentiation of forest types may be linguistically coded in Gitksanimx.

Perhaps as might be expected, there are terms that describe different parts of drainage systems for this quintessentially riverine people. Terms

Table II. Gitksan Landscape Terms

Gitksan term(s)	Approximate English equivalent(s)	Translation	Source ^a
<i>Hlo'o</i>	"Slides"	'It slides'	PM '94
<i>Enhloo'o</i> [<i>anhloo'o?</i>]	Avalanche track, place where it slides every year	'Place-slides?'	AM '95
<i>Hlo'omsa₇nist</i>	Rockslope or landslide	'Slide-mountain'	PM '94
<i>'Yagahlo'o</i>	Snowslide, avalanche		BA '88
<i>Hlo'omigan</i>	"Blowdown" ⁷ or a landslide involving trees?		TT & ST '87
<i>Lax'aamit</i>	'Meadow' (snowbed areas and other treeless places)	'Timber avalanche'	BA '88
<i>Lax'amaaxws</i>	'Meadow' (alpine and other treeless flats)	'Place that's good, that has no trees'; 'prairie'	
<i>Laalax'u</i>	Swamp	'Prairie'	PM '94
<i>Laxensuuks</i>	Old overgrown landslide or snowslide scar		DG '87
<i>Aks; xsi- [xsan, xsu-]</i>	River, stream		AM '95
<i>k'ali'aks</i>	Large, river; "cottonwood forest"	A form of the term for water A form of the term for the upstream direction	KH '95 BA '88; BR '95
<i>Tax; t'aam-</i>	Lake		BR '95
<i>Gwanks</i>	A spring (not a swamp)		SH '92
<i>Ant'ook'</i>	Where moose go, a muddy place		SH '92
<i>Tl'ook'</i>	Mud	'Place of mud?'	SH '92
<i>Gililix</i>	Forest	'Woods'; tree-covered area away from the river	H & R
<i>Lax'elt gililix</i>	Wooded slope (may be a neologism)		AM '95
<i>Sbaaytgan</i>	"Evergreen forest"	'Uphill wooded area'	BA '88
<i>Sbaayigan</i>	Forest	'Among the trees'	AM '95
<i>Sbaayigangan</i>	Mixed forest		AM '95
<i>Sbaay'am'mel</i>	Cottonwood forest [may be a neologism]	'Among the trees, cottonwoods'	AM '95
<i>Spagadeganix</i>	Forest	'Out in the bush, in the forest'	PM '94
<i>Spaganix</i>	Forest	'Place where there's trees'	HH '95
<i>Am'mehngalilaks</i>	Floodplain cottonwood, cottonwood-along-the-river		AM '95

Table II. (Continued)

Gitksan term(s)	Approximate English equivalent(s)	Translation	Source ^a
<i>Lax̱sgá'nist</i>	Forest area if it is up a mountain		SH '92
<i>Lax̱k'elt</i>	Hilly land		SH '92
<i>Sgá'nist</i>	Mountain		GWn.d.
<i>Ts'ilaax̱rw</i>	Rock canyon (as in Kitselas, people of the rock canyon)		AM '95
<i>Ts'imts'uu'tlxs</i>	'Gully'		BR '95
<i>Ts'imt'in</i>	'Valley'		BR '95
<i>Ts'i'naast</i>	Burned-over patch (for berries or deer browse); clearing		BR '94
<i>Lax̱'annmih</i>	Burned-over area	'Place that is burned or charred?'	PM '94
<i>Ansimda'y</i>	'Berry grounds'		GI '87

^aAM—Art Mathews, Dimim Get; PM—Pete Muldow; BA—Beverley Anderson; TT—Tommy Tait; ST—Sara Tait; DG—David Green; KH—Kathy Holland; HH—Heather Harris; GW—Commission Evidence/Court Case information; BR—Bruce Rigsby; SH—Sadie Howard; GI—Gitksan Interpreters' Gitksan Glossary.

for features of rivers significant for fishing and navigation include rock canyon, *ts'ilaasxw*; bay, *k'aldixgaks* or *wil luulamjax*; sandbar? *wisax/wisex*;⁴ waterfall, *ts'itxs*; whirlpool, *ts'a'lixs*; and back channel, *ts'oohlixs*.

A variety of topographic terms also exists, including mountain, *sga'nist*; hilly land, *lax k'elt*; gully, *ts'imts'uu'lixs*; and valley, *ts'imt'in*. There are also terms for small-scale features like *gwanks* (spring) and *ant'look* [a muddy place, where moose go (cf. 'lick')], which are different from swamp (*laalax'u* or lake (*t'ax*)).

Gitksan ethnoecology could be described as interactive; as people and the land are not separate, Gitksan speech about land includes people, their history, and the resource potentialities of the land as major themes. *Specific* places with their attributes are discussed, rather than generalized, abstracted statements such as might be made by a Western geographer or ecologist or travelogue narrator. A person may refer to net sites, trapping areas, berry patches, or swamps good for moose hunting. The basis of the conversation about land is from the consultant's own experience or that related to him/her by someone else in the community. It is not derived by deduction from general landscape characteristics. Discussions are not of the potential resources of cottonwood stands or pine forests in general, but where one might go, or where the narrator has gone, to obtain, for example, lowbush blueberries or good devil's club. Often reference is made to specific named sites on one's territory. For plants of restricted distribution, such as stonecrop, the entire inventory of sites known to the consultant may be listed in conversation. Sometimes habitat information will include comments that one should dig certain roots in soft soil for easier digging or get them from the swamp so they will be more succulent and better suited to the preparation of medicine.

The naming of places is primary, so when asked what the word for 'any lake' was, Pete Muldoe replied, "They call it *t'ax*, any lake. But they different name on it, like. . . They have their own name on those, what they call it, lake, but just a lake is a lake. But to identify the name of the place where it's at, they have to name those lakes" (Pete Muldoe; interview transcript, 7/21/92, p. 15). Pete then proceeded to discuss the names of several lakes on his territory, describing them, their location, and the etymology of their names.

The Gitksan share with a number of other nonliterate peoples the conception of the landscape as embodying *history* (Rosaldo, 1980; Cruikshank, 1990a, b). The land is divided up into named entities that each serve as the visible witness of past events, from the adventures of the trickster/

⁴Both Eastern Gitksan and Western Gitksan transcriptions for the terms are included, separated by the slash.

creator 'Wiigyet to the specific deeds of ancestors of specific clans and Houses. Elders will talk of specific resources and places, mixing personal history with oral narratives, in a way described by Cruikshank (1990*b*), often with reference to their own travels of the past. Each place has its names and its stories and serves as a reminder and tangible evidence of the verity of the events recounted by chiefs and elders, as suggested by the statement of Dinim Gyet at the beginning of this paper.

Although the specific names are proprietary, general classes of toponyms can be recognized. Names may commemorate or indicate the specific adventures of ancestors or of 'Wiigyet. Names may also indicate resources present on the land, also noted for the Sahaptin (Hunn, with Selam and family, 1990; Hunn, 1996) and numerous other North American Native groups. The Shegunia River, locally known as 'Salmon River', is such a name; the Gitksan word is *Xsigunya'a* (stream point spring salmon) (Rigsby, 1986, p. 67). Names may also describe a physical feature (as '*Wiisga'nist*, inaccurately recorded as Weeskinisht on the government topographic maps, which means 'Big Mountain'). Names can describe actions appropriate to a place. Two examples from unpublished material provided by the Gitksan Treaty Office translate as place where you make wedges and place where you set the fish trap.

There are several words that can indicate place of or place where, or provide locative information, which commonly appear in place names (Table III). Another word that forms part of many place names is *Xsi-* (and its variants *xsu-* and *xsa-*), the prenominal ablauted compounding form of *aks* (Rigsby, 1986), water. The names of streams and rivers are almost always preceded by one or another of these forms. Sometimes the word mountain, *sga'nist*, may form part of the names of specific mountains, but many mountain names do not contain 'mountain'.

Because of the proprietary nature of Gitksan toponyms, very few of the myriad Gitksan place names, except those of the villages themselves, have passed into use by modern Eurocanadians or attained the fixed status of names on maps.

DISCUSSION

A brief review of recent ethnobotanical and place name literature reveals little discussion of ethnoecological classification by other groups, though certainly many ethnographers must carry such an informal inventory of indigenous terms and concepts in their heads. Two notable exceptions are the brief but cogent couple of paragraphs and landscape diagram for Sahaptin in *Nchi'-Wána* (Hunn, with Selam and family, 1990, pp. 91–93)

Table III. Gitksan Place Terms^a

Gitksan term	Meaning	Toponym example	Translation	Source ^a
<i>Miin</i>	At the foot of; in front of	<i>Miinhl sginist</i>	“At the foot of the pines	BR '86; '95
<i>Win</i>	Place of, place where	<i>Win'naahaast</i>	‘Place where fireweed stands out (against a background)’	GW 5/92
<i>Gwin; gun</i>	Point extending into water	<i>Gwin'watsx</i>	“Otter point”	GW 5/92
<i>Lax</i>	“On”	<i>Lax'yip</i>	“On ground” = land, territory	BR 1986
<i>An</i>	Where, place when	<i>Anists'idipxst</i>	“Where (they) pick highbush cranberries”	GW 5/92; BR '95

^aGW 5/92—a list of terms used in Court Case (manuscript on file at Gitksan Treaty Office); BR '86—Draft Gitksan Grammar (manuscript on file at Gitksan Treaty Office); BR '95—personal communication.

and the articles on the Sierra Nahua by Beaucage and his colleagues (Beaucage and Taller de Tradición Oral del CEPEC, 1997; Taller de Tradición Oral del CEPEC and Beaucage, 1996). The Sahaptin are traditional foragers and fishers of the Columbia Basin in the western United States. Many of the terms diagrammed by Hunn are primarily topographic or hydrographic ('saddle', 'snow-capped peak', 'cliff', 'eddy'), but some have more biological content, such as 'wet meadow', 'burnt place', 'grove of tall trees', and 'rocky flat' (the habitat of a couple of important root foods). Hunn goes on to discuss the point I have made above, that most of the reference to place is more specific and often deals with activities appropriate to individual places, rather than generalized words for large features or frequently occurring habitats.

The Sierra Nahua, discussed in two papers by Beaucage and his colleagues, (1996, 1997) are shifting cultivators of the rugged Sierra Norte in Puebla, Mexico. They term their classification of places ethnotopography and list five domains within this—the mountain and its parts, watercourses and their banks, soil characteristics, vegetation, and inhabited village spaces. The authors also figure a generalized landscape diagram, which diagrams place types of all of these domains. Beaucage and his colleagues (Taller de Tradición Oral del CEPEC and Beaucage, 1996, p. 43) regard the mountain and watercourses as polythetic categories, while soils and vegetation are regarded as monothetic, and village space is a mixed system. The inventory of topographic types is reminiscent of those reported by Hunn and in this paper. Vegetation types include both noncultivated types and various types of cultivated areas. 'Forest', considered to be *uninhabited, uncultivated space in opposition to the village*, is subdivided into primary forest and second growth or brush. There are also terms for herb-dominated communities, coffee orchards, sugarcane plantations, maize fields, bean fields, and fallows. The authors also suggest a cosmological and symbolic opposition of mountain and water (the former good, and the latter dangerous).

Several other papers dealing with foraging peoples or shifting cultivators include small lists of ecological types recognized and named by the studied group, but without discussion. These partial inventories deal with dominant plant life form and postclearing successional stages (Table IVa) (Vickers, 1994; Atran, 1993; Martínez A., 1987; Mora *et al.*, 1985) and altitudinal zonation and drainage status (Table IVb) (Sillitoe, 1995) or, in the case of terms for riverbank and river terrace types reported for the Ainu, topography, forest status, and dominant species (Table IVc) (Watanabe, 1973, p. 40). Atran (1993) provides, in scattered form, some discussion of terms for topographic features and soils as well. A short discussion of ecological terms of another foraging group, the Mexican desert-dwelling

Table IV. Ethnoecological Terms from Previous Studies

(a) Sierra Nahua terms given by Mora <i>et al.</i> (1985)	
<i>Mil</i>	Planted area
<i>Xiujkual</i>	' <i>Acahual</i> ' with herbs and shrubs (<i>acahual</i> is regrowth on a fallow field)
<i>Kuaujjitik</i>	' <i>Acahual</i> ' with trees
<i>Kuaujta</i>	Woods, forest
<i>Ueyi kuauit</i>	' <i>árbol grande</i> ' <i>chaparral viejo y alto con árboles grandes?</i> ' [tall, old scrub with scattered trees? or old high forest?]
(b) Wola terms given by Sillitoe (1995, p. 203)	
<i>Iyshabuw</i>	Lower montane rainforest
<i>Bael</i>	Secondary forest regrowth
<i>Gaimb</i>	Canegrass
<i>Pa</i>	Swampy vegetation
<i>Mokombai</i>	Recently abandoned garden successions
<i>Em</i>	Gardens and houseyard environs
<i>Aendtay</i>	Gardens and houseyard environs
<i>Maendaim</i>	Alpine vegetation
(c) Ainu terms reported by Watanabe (1973, p. 40)	
<i>Kenashi</i>	Woodland on river bank
<i>Nup</i>	Woodless field on either river bank or river terrace
<i>Komni tai</i>	Oak wood on river terrace
<i>Nitat</i>	Woodland by the side of streamlets on river terrace

Seri, is given by Felger and Moser (1985, p. 77). These are terms describing vegetation or its absence. A historical note is provided by a short discussion of land terms in a paper on Sixteenth-century Zapotec ethnoscience (Marcus and Flannery, 1978), with comments on modern equivalents. A theoretical paper by Hunn and Meilleur (1992) sets forth the notion of traditional landscape classification under the rubric of ethnobiogeography and gives examples from Hunn's Sahaptin material and Meilleur's French Alpine work.

An oblique approach to landscape perception by other groups may be made by examining orienting information. For example, the Kwakiutl oriented by 'up and down coast' (and/or rivers) and 'away from or toward the sea' (Boas, 1934, p. 9). The Hawaiians also recognized *mauka* and *makai* (toward the mountains and toward the sea). Palmer (pers. commun.) reports that upstream and downstream are important orienting terms for the Secwepemc of Alkali Lake, as indeed they are for the Gitksan. One can also read between the lines to glimpse landscape perception by the Dena'ina through the table of place name generics provided by Kari and Fall (1987, p. 33), which lists a number of terms including stems that indicate stream, lake, ridge, mountain, hill, and their subdivisions, such as river mouth, and telling terms such as *ken*, *-kena*, glossed as 'flat, clear area, swamp'.

Perhaps the paucity of information on relevant environmental variables recognized and named by peoples is due in part to the inherent “messiness” of the world in an ecological sense. Since ecology is, by definition, the interface and interaction of the biotic and abiotic worlds, and since history (including utilization and alteration of land and random events such as blowdown and extreme winters) also effects what is manifested on the land, the patterns of topography and species association are very complex. This complexity has led to considerable debate among professional ecologists as to what the criteria of ecological classification should be and what level of detail is appropriate. Indeed, it has been sharply debated whether entities such as plant communities actually exist⁵ or whether they are constructs imposed on a messy continuum with few or no sharp discontinuities. Perhaps, therefore, this important area of inquiry is difficult to bound, and it is not obvious what types of entities might qualify as ethnoecological classes. Terms of ecological relevance range from strictly topographic and hydrological to vegetation *per se*. Hunn and Meilleur (1992) provide provocative evidence that, at least for some groups, there is an indigenous domain of words related to “place” that can serve to delimit the area of concern. In my own efforts to establish the boundaries of inquiry into ethnoecological classification, I have included terms that refer to kinds of place but excluded terms that describe types of substrate. I have, for example, included words for stream, lake, and slide area as ecological terms, while I have excluded terms such as *yip* and *psal/pse* (soil and clay) from consideration as Gitksan ecological terms, because they are not primarily words that designate places. [However, the word for ‘territory’, *laxyip*, does contain *yip* (soil) and can indicate ‘on land’.] It could be argued that stream, lake, and slide area are simply topographic terms, and not ecological in nature. I have chosen to take a relatively broad approach to ethnoecological classification by including any words that indicate types of places (with the exception of words like *lax galts’ap*, village, or *sbilaxnok*, a type of supernatural place where a spirit can pull you in, which lack biological or geographic content).

The exclusion of spiritual sites and villages from ethnoecological classi-

⁵This debate has continued since the early years of this century, when Frederick Clements (1916) put forth what has been called the “superorganism” theory of plant communities. This model was shortly challenged by Gleason (1926), who advocated an individualistic model for plant species distributions. More recently, the European school of phytosociology has taken an approach focused on methodology for accurate delimitation of vegetation communities (Braun-Blanquet, 1932), while some American workers have advocated gradient approaches and vegetation ordination (Whittaker, 1973), or so-called continuum theories (Curtis, 1959; Curtis and McIntosh, 1951), based on Gleason’s individualistic distribution of species. Both gradient approaches and ordination continue to be used alongside classic phytosociological methods. Kershaw (1973) and Barbour *et al.* (1987) contain useful discussions of approaches to delimiting plant communities.

fication could be argued against, however. Bruce Morrison has presented extremely provocative Tibetan ethnogeographic depictions, which include the locations of spiritually significant sites and demons in an otherwise straightforward depiction of a terrain of mountains and valleys. Morrison commissioned paintings to render graphically indigenous landscape conceptions (1995, pers. commun.). Perhaps in a future, more expanded treatment of Gitksan landscape perception, supernatural sites such as *sbilaxnok* should be included as 'types of places'.

It is also arguable that one should not exclude villages, with their focus of human activity and concomitant ecological disturbance, from landscape conceptions; indeed Taller de Tradición Oral del CEPEC and Beaucage (1996), discussed above, chose to include inhabited spaces as one end of an axis of landscape understanding. For the Gitksan, too, villages are in some sense contrasted with out on the land, as I have commented earlier. Villages are foci of the human and social environment and may also be locations that are not spiritually 'clean' (because of dogs and human wastes, as well as the possible malevolent intentions of other human beings) and are hence unsuitable, for example, for the gathering of medicinal plants.

It is much less difficult to address the particular with reference to place and sense of place. The rich literature on toponyms has explored the various kinds of information coded by place names for different ethnic groups (Taller de Tradición Oral del CEPEC and Beaucage, 1996; Hunn, 1996; Müller-Wille, 1983, 1993; Cruikshank, 1990a, b; Basso, 1990a, b; Tom, 1987; Kari, 1989; Kari and Fall, 1987; Correll, 1976; Boas, 1934). Such information reveals aspects of the human/land relationship of different cultures and has also been used as supporting evidence in land claims negotiations and court cases (cf. Hunn, 1996; Müller-Wille, 1983, 1993; court case testimony of plaintiffs in *Delgam Uukw v. the Queen*). Cruikshank (1990a, b) and Palmer (n.d.) have also explored the linkages between place and individual people's experience of land, including resources and events of personal history, for people in the southern Yukon and interior of British Columbia.

Indigenous North American place names tend to share several characteristics, found also in the Gitksan place names I have heard or read. In particular, the short discussion by McNeary (1976, pp. 59–60) and accompanying map key (pp. 227–231) reveal the close similarity of Nisga'a and Gitksan place naming.⁶ Place names may describe physical or topo-

⁶The Gitksan and Nisga'a speak closely related languages, their territories are adjacent, and they have very similar cultures. They occupy generally similar environments, though the Nisga'a territory extends to the estuary of the Nass, while the Gitksan territory is wholly riverine. Rigsby (1987, pp. 363–368, 1989, pp. 245–247) has recently argued that Gitksan and Nisga'a are separate languages because the speakers regard them as such and they have separate autonomous norms, although they are mutually intelligible. Formerly, they were described as two dialects of one language.

graphic features (e.g., in Western Apache, Sahaptin, Northern Tutchone, Kwakiutl, Dena'ina, Ahtna, Inuit, Witsuwit'en, Nisga'a, and Gitksan). They may mention plant or animal species metonymically or make reference to resource species to be found in a named area (found in Sahaptin, Shuswap, Kwakiutl, Northern Tutchone, Witsuwit'en, Nisga'a, and Gitksan). Place names may refer to historical events that occurred in the named area (as among Western Apache, Sahaptin, Nisga'a, and Gitksan) or to events that happened in a mythological beginning time. Kari (1989), in a discussion of Alaskan Athabaskan toponymic knowledge, comments that the Ahtna and Dena'ina may name physiographic regions as well as specific smaller features; sometimes the local band names may reflect the physiographic regions they inhabit.

Place names are a sensitive index to the long-term relationship of peoples to their landbase and reveal information about ecology, cosmology, and history. As Bruce Rigsby (1987, p. 371) says,

The Whites like to believe that they occupied a wilderness a century or so ago, which they are transforming and developing. They also presume to give their own names to the land, but the chiefs and elders who speak Gitksan know well that their homeland is a humanized landscape that has a myriad of place names and associated legends and historical narratives.

It is possible, both for the ethnographer or ethnobiologist and for the members of a culture, that "types of places" may be covert and that discovering a people's ecological classification may involve reading between the lines. People may know, for example, that low bush blueberries are often associated with low-elevation lodgepole pine stands in relatively flat places without erecting the overt class jack pine flat. As another example, a person may also know, in addition to naming a specific traditional gathering area for spiny woodfern rootstock, that one should look for it in a *lax'aamit* (treeless snowbed area), if attempting to find it in an area not well known to the consultant, or that it is frequently associated with *giist* (*Alnus crispa*).

It is out of this richness that we can learn the diverse ways in which peoples see and know land. As McNeary (1976, p. 61) aptly summarizes,

To the Niska, the Nass valley is far from a wilderness. It is a collection of familiar localities, each with its own particular resources. The ownership of each place is known and many old village sites and fish camps dot the valley. There is a richness of historical and supernatural associations which make the landscape virtually a textbook of Niska history and religion.

I would add that it is a textbook in ecology as well. The study of landscape perception and ethnoecological classification, and the study of toponyms, can reveal the intricacy and beauty of relationships of peoples and land.

In the contemporary setting of contestation of ownership and control

of resources between indigenous peoples and nation states, the contrasts in perception of the land can play out in economic and political arenas in important ways. The neighboring Nisga'a have signed the first modern treaty in British Columbia, which gives them wide control over resources in an extensive area of the upper Nass River drainage [which overlaps the claim areas of the Gitanyow and the Gitksan and has been contested by both groups (see Sterritt *et al.*, 1998)] and ownership of the core of their homeland in the lower Nass valley. The Gitanyow won a court case in summer of 1999 dealing with the overlap in claims, and how their claim is settled will effect the management of land and resources in the Nass Valley. It is too soon to know how changes in jurisdiction and devolution of management responsibilities will affect what actually happens with fisheries, wildlife, and other resources of the Nass Valley or how the competing claims of the Gitanyow and Gitksan for some of the area will be accommodated.

At the present time, the Gitksan are making a bid to control their lands and waters (with extensive forestry, fisheries, and mineral resources) in a co-management context with the British Columbia provincial government and the government of Canada. Their landmark land claims court case (*Delgamuukw v. the Queen*) was decided in their favor on appeal to the Canadian Supreme Court in December 1997 (Anonymous, 1998), but the practical consequences of that decision for control of management of their land have yet to be clarified. Some discussion of the possible effects of indigenous ethnoecological perspectives on biodiversity conservation in northwestern British Columbia is given by Johnson (2000b); as yet the situation is too fluid to comment with any certainty on the management or ecological consequences of any changes in relations between the Gitksan and the provincial and federal governments.

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REFERENCES

- Anonymous (1992). List of toponyms and names extracted from materials prepared for Delgamuukw vs. the Queen (Gitksan-Wet'suwet'en landclaims courtcase). Manuscript on file, Gitksan Treaty Office Library, Hazelton, B.C.
- Anonymous (n.d.). Computer search for toponyms prepared from materials for Delgamuukw vs. the Queen (Gitksan-Wet'suwet'en landclaims courtcase). Manuscript on file, Gitksan Treaty Office Library, Hazelton, B.C.
- Anonymous (1998). *The Supreme Court of Canada Decision on Aboriginal Title, Delgamuukw* (with commentary by Stan Persky and foreword by Don Ryan, Maas Gaak), David Suzuki Foundation and Greystone Books, Vancouver, B.C.
- Atran, S. (1993). Itza Maya tropical agro-forestry. *Current Anthropology* 34: 633–699.
- Barbour, M. G., Burk, J. H., and Pitts, W. D. (1987). *Terrestrial Plant Ecology, 2nd ed.*, Benjamin/Cummings, Menlo Park, CA.
- Basso, K. (1990a). Stalking with stories: Names, places and moral narratives among the Western Apache. *Western Apache Language and Culture*, University of Arizona Press, Tucson, pp. 98–137.
- Basso, K. (1990b). Speaking with names: Language and landscape among the Western Apache. *Western Apache Language and Culture*, University of Arizona Press, Tucson, pp. 138–173.
- Beaucage, P., and Taller de Tradición Oral del CEPEC (1997). Integrating innovation: The traditional Nahua coffe-orchard (Sierra Norte de Puebla, Mexico). *Journal of Ethnobiology* 17(1): 45–67.
- Boas, F. (1934). *Geographical Names of the Kwakiutl Indians*, Columbia University Contributions to Anthropology, Vol. XX, Columbia University Press, New York.
- Braun-Blanquet, J. (1932). *Plant Sociology: The Study of Plant Communities*, McGraw-Hill, New York.
- Bulmer, R. (1979). Mystical and mundane in Kalam classification of birds. In Ellen, R. H., and Reason, D. (eds.), *Classifications in their Social Context*, Academic Press, London, pp. 57–79.
- Clements, F. E. (1916). *Plant Succession: An Analysis of the Development of Vegetation*, Carnegie Institution of Washington Publication 242, Carnegie Institution of Washington, Washington, DC.
- Compton, B. (n.d.). Tsimshian botanical terminology (Coast Tsimshian, Southern Tsimshian, Gitksan and Nisgha), manuscript in files of author.
- Correll, T. C. (1976). Language and location in traditional Inuit societies. In Freeman, M. (ed.),

- Report, Inuit Land Use and Occupancy Project, Vol. 2. Supporting Studies*, Department of Indian and Northern Affairs Publication QS 8054-002-EE-A1, Ottawa, pp. 173–179.
- Cove, J. J. (1982). The Gitksan traditional concept of land ownership. *Anthropologica* 24: 3–17.
- Cruikshank, J. (1990a). *Life Lived Like a Story*, University of British Columbia Press, Vancouver.
- Cruikshank, J. (1990b). Getting the words right: Perspectives on naming and places in Athapaskan oral history. *Arctic Anthropology* 27(1): 52–65.
- Curtis, J. T. (1959). *The Vegetation of Wisconsin*, University of Wisconsin Press, Madison.
- Curtis, J. T., and McIntosh, R. P. (1951). An upland forest continuum in the prairie–forest border region of Wisconsin. *Ecology* 32: 476–498.
- Ellen, R. (1993). *The Cultural Relations of Classification*, Cambridge University Press, Cambridge.
- Felger, R. A., and Moser, M. B. (1985). *People of the Desert and Sea, Ethnobotany of the Seri Indians*, University of Arizona Press, Tucson.
- Gitksan Interpreters (1987). Glossary: Gitsenimx/Gitksanimx (Western Dialect)/(Eastern Dialect) Hazelton: Gitksan-Wet'suwet'en Tribal Council.
- Gleason, H. A. (1926). The individualistic concept of the plant association. *Bulletin of the Torrey Botanical Club* 53: 1–20.
- Hindle, L., and Rigsby, B. (1973). *A Short Practical Dictionary of the Gitksan Language*. Northwest Anthropological Research Notes 7(1).
- Houseknecht, S., Haeussler, S., Kokoshke, A., Pojar, J., Holmes, D., Geisler, B. M., and Yole, D. (1986). *A Field Guide for the Identification and Interpretation of the Interior Cedar–Hemlock Zone, Northwestern Transitional Subzone (ICHg), in the Prince Rupert Forest Region*, Land Management Handbook No. 12, BC Ministry of Forests, Victoria.
- Hunn, E. S. (1996). Columbia Plateau Indian place names: What can they teach us? *Journal of Linguistic Anthropology* 6(1): 3–26.
- Hunn, E., and Meilleur, B. A. (1992). The utilitarian value and theoretical basis of folk biogeographical knowledge. Paper presented at the 3rd International Congress of Ethnobiology, Mexico City, Nov. 10–14.
- Hunn, E. S., with Selam, J., and family (1990). *Nch'i-Wána, "the Big River," Mid-Columbia Indians and Their Land*, University of Washington Press, Seattle.
- Johnson, L. M. (1997). *Health, Wholeness and the Land: Gitksan Traditional Plant Use and Healing*, Ph.D. dissertation, University of Alberta, Edmonton.
- Johnson, L. M. (2000a). Gitksan plant classification. *Journal of Ethnobiology* (in press).
- Johnson, L. M. (2000b). Sacred land and biodiversity conservation: Implications of the relationship of indigenous peoples of Northwestern Canada and their land. In Sponsel, L., and Appell, G. (eds.), *Sanctuaries of Culture and Nature: Conserving Sacred Places and Biodiversity*.
- Johnson Gottesfeld, L. M. (1994a). Aboriginal burning for vegetation management in Northwest British Columbia. *Human Ecology* 22(2): 171–188.
- Johnson Gottesfeld, L. M. (1994b). Conservation, territory and traditional beliefs: An analysis of Gitksan and Wet'suwet'en subsistence, Northwest British Columbia, Canada. *Human Ecology* 22(4): 443–465.
- Kari, J. (1989). Some principles of Alaskan Athapaskan toponymic knowledge. In Key, M. R., and Hoenigswald, H. M. (eds.), *General and Amerindian Ethnolinguistics*, Mouton de Gruyter, Berlin, New York, pp. 129–149.
- Kari, J., and Fall, J. A. (eds.) (1987). *Shem Pete's Alaska: The Territory of the Upper Cook Inlet Dena'ina*, Alaska Native Language Center, University of Alaska, Fairbanks.
- Kershaw, K. (1973). *Quantitative and Dynamic Plant Ecology*, American Elsevier, New York.
- Marcus, J., and Flannery, K. V. (1978). Ethnoscience of the sixteenth century Valley Zapotec. In Ford, R. I. (ed.), *The Nature and Status of Ethnobotany*, Museum of Anthropology No. 67, University of Michigan Press, Ann Arbor, pp. 51–79.
- Martínez A., M. A. (1987). Percepción botánica en dos grupos étnicos de la Sierra Norte de Puebla. *América Indígena* XLVII(2): 231–241.
- McNeary, S. (1976). *Where Fire Came Down, Social and Economic Life of the Niska*, Unpublished doctoral dissertation in anthropology, Bryn Mawr College, Bryn Mawr, PA.

- Mora H., E., Mora N., P., Francisco A., J. A., Patron S., R., and Martínez A., M. A. (1985). Nota etnolingüística sobre el idioma nahuatl de la sierra norte de Puebla. *Amerindia, revue d'ethnolinguistique amérindienne* 10: 73–91.
- Müller-Wille, L. (1983). Inuit toponymy and cultural sovereignty. In Müller-Wille, L. (ed.), *Conflict in Development in Nouveau-Québec*, McGill Subarctic Research Paper No. 37, Center for Northern Studies and Research, McGill University, Montreal.
- Müller-Wille, L. (1993). Place names, territoriality and sovereignty: Inuit perception of space in Nunavik (Canadian Eastern Arctic). *Schweizerische Amerikanisten-Gesellschaft Bulletin* 53–54(1989–1990): 17–21.
- Palmer, A. D. (n.d.). Speaking on the land: Shuswap narratives as cartography, manuscript in possession of author.
- Pojar, J., Trowbridge, R., and Coates, D. (1984). *Ecosystem Classification and Interpretation of the Sub-Boreal Spruce Zone, Prince Rupert Forest Region British Columbia*, Land Management Report No. 17, BC Ministry of Forests, Victoria.
- Rigsby, B. (1986). *Gitksan grammar*, unpublished draft manuscript on file, Gitksan Treaty Office, Hazelton.
- Rigsby, B. (1987). Indigenous language shift and maintenance in Fourth World settings. *Multilingua: A Journal of Cross-Cultural and Interlanguage Communication* 6(4): 361–378.
- Rigsby, B. (1989). A later view of Gitksan syntax. In Key, M. R., and Hoenigswald, H. M. (eds.), *General and Amerindian Ethnolinguistics*, Mouton de Gruyter, Berlin, New York, pp. 245–259.
- Rosaldo, R. (1980). Doing oral history. *Social Analysis* 4: 89–99.
- Sillitoe, P. (1995). An ethnobotanical account of the plant resources of the Wola Region, southern Highlands Province, Papua New Guinea. *Journal of Ethnobiology* 15(2): 201–235.
- Standish, J., Haussler, S., Kokoschke, A., Pojar, J., Holmes, D., Geisler, B. M., and Yole, D. (1987). *A Field Guide for Identification and Interpretation of the Coastal Western Hemlock Zone, Northern Drier Maritime Subzone (CWHf), in the Prince Rupert Forest Region*, Land Management Handbook No. 14, BC Ministry of Forests and Lands, Victoria.
- Sterritt, N. J., Marsden, S., Galois, R., Grant, P. R., and Overstall, R. (1998). *Tribal Boundaries in the Nass Watershed*, University of British Columbia, Press, Vancouver.
- Taller de Tradición Oral del CEPEC and Beaucage, P. (1996). La bonne montagne et l'eau malfaisante. Toponymie et pratiques environnementales chez les Nahuas de basse montagne (Sierra Norte de Puebla, Mexique). *Anthropologie et Sociétés* 20(3): 33–54.
- Tom, G. (1987). *Èkiyi: Gyo Cho Chù, My Big Salmon Country. Place Names of the Big Salmon River Region, Yukon Territory, Canada*, Yukon Native Language Centre, Whitehorse.
- Vickers, W. T. (1994). The health significance of wild plants for the Siona and Secoya. In Etkin, N. L. (ed.), *Eating on the Wild Side*, University of Arizona Press, Tucson, pp. 143–165.
- Watanabe, H. (1973). *The Ainu Ecosystem, Environment and Group Structure*, University of Washington Press, Seattle.
- Whittaker, R. H. (1973). *Ordination and Classification of Communities*, Junk, Gotingen, The Netherlands.