

Interethnic Preferences for Landscape Change

A Comparison of First Nations and Euro-Canadian Residents

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ABSTRACT Interethnic and cross-cultural preferences for and perceptions of landscape change have been recurrent subjects of interest in environmental psychology, environmental sociology, and landscape architecture research. Cross-cultural studies of Asian, European, and Euro-American perceptions of landscape condition are fairly common, but few if any studies have compared aboriginal and nonaboriginal perceptions of a range of controlled landscape conditions. A sample of aboriginal and non-aboriginal residents of British Columbia's upper Skeena Valley indicates considerable interethnic consistency in preference evaluations of a series of photo-realistic landscape change scenarios. Reflection on the cultural and motivational determinants of landscape preference indicates a need for more explicit operational definitions of the terms *culture* and *community of interest* in landscape research.

KEYWORDS ethnicity, culture, landscape preference, landscape perception, aboriginal

INTRODUCTION

Increasing complexity is a key feature of the current policy environment in British Columbia (B.C.) in which decisions about the forest landscape are made. While relatively few interests have commanded attention in decisions about forest management in the past, a host of perspectives demands access and consideration in decision-making today. For example, in B.C.'s upper Skeena Valley, Crown forests have directly and indirectly contributed to the traditional way of life of aboriginal residents as well as provided employment and solitude for aboriginal and Euro-Canadian residents alike. Clearly, planned landscape changes can have wide-ranging effects.

A significant area of concern for landscape managers is the extent to which local residents differ in their relative preferences for and interpretations of planned landscape change. Across several disciplines (for example, environmental psychology, environmental sociology, landscape architecture), a fundamental question underlies inquiries into human conceptions of landscape and landscape change: are people with different backgrounds (for example, ethnicity, place of residence) or demographic characteristics (for example, age, gender, education), when placed in the same landscape setting, likely to differ in their preferences for and interpretations of that setting (Ingold 2000; Meinig 1979)?

In landscape planning and resource management, particularly in settings such as rural British Columbia where aboriginal and nonaboriginal interests historically have been in conflict in their preferences for and perceptions of planned landscape change, consideration of how an increasingly varied spectrum of interests can be taken into account is necessary (Glavin 1990; Satterfield 2002). The central question underlying this aspect of landscape change is—in what ways, and why, do landscape preference judgments and perceptions of landscape change vary across and within ethnic groups? More specifically, how and why do preferences for and perceptions of landscape change between and among First Nations and Euro-Canadian residents?

The practical significance of these questions lies in the extent to which the answers influence the content and direction of broader landscape management objectives (for example, conservation, multi-use management, scenic quality) and inform more specific policies (such as consultation with local First Nations and non-aboriginal residents). In terms of the latter, landscape planners, resource managers, and policymakers require a better understanding of the preferences of their constituencies and, in particular, the potential for consensus among stakeholders with culturally and historically unique relationships to the forest landscape.

The setting for the research discussed here is the upper Skeena Valley of northwestern British Columbia. Situated below the southeastern border of Alaska, the landscapes of the upper Skeena Valley are exceptionally diverse (Figure 1). The environment through which much of the Skeena River passes is mountainous, and only in the immediate vicinity of the river is there level land. Stretching from Kitwanga in the west to Hazelton in the east, the upper Skeena Valley lowlands are the site of small-scale agriculture (mostly grazing and hay production); vast deciduous forests of cottonwood, poplar, and aspen; and village and town settlement. This is the traditional territory of the Gitksan people, as well as the confluence of the Skeena and Bulkley Rivers, where the natural endowments of access to B.C.'s coast and interior by way of two major river corridors and a

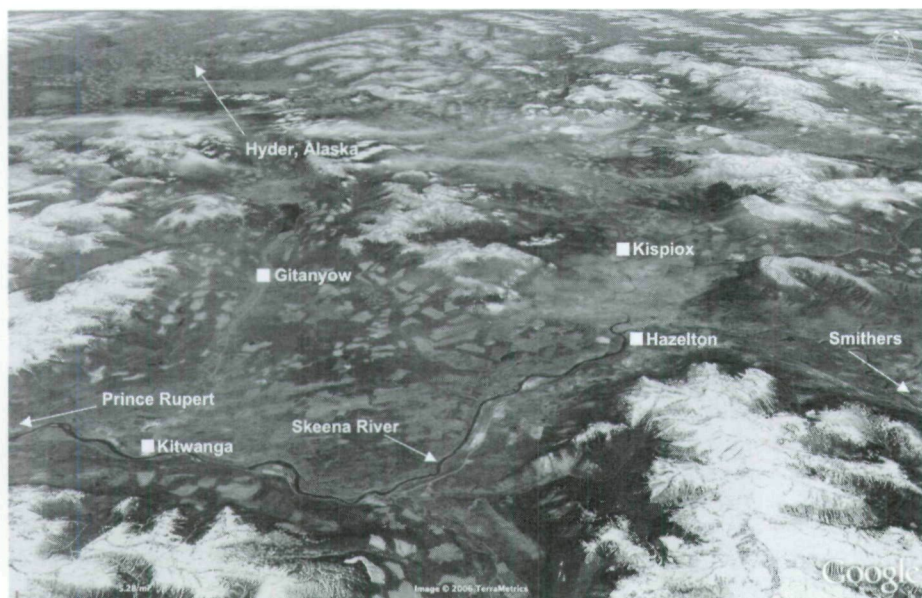


Figure 1. Upper Skeena communities and landscape setting. (Courtesy of Google Earth)

relatively mild climate have made this part of the Northwest a natural choice for habitation by First Nations and Euro-Canadians.

By several accounts, planned or human-induced landscape change is a relatively recent occurrence in the Pacific Northwest, presumably because the indigenous inhabitants did not improve, cultivate, or enhance the productivity of their landscape before European contact occurred (Benedict 1934; Flanagan 2000). Accordingly, First Nations would object to any landscape change that departs from a natural or pristine condition (DiChiro 1996).

A large and growing body of evidence, however, suggests that pre-contact First Nations did engage in large-scale landscape modification, mostly through the controlled use of fire, to enhance the availability of food resources (for example, black huckleberry, low-bush blueberry, thimbleberry, soapberry, and other nutritionally valuable plants) that would otherwise have been dispersed too widely to permit surplus accumulation (Agee 1993; Boyd 1999; Deur and Turner 2006; Johnson Gottesfeld 1994; Lewis 1973; Trusler and Johnson 2008; Turner 1999). The visible imprint of First Nations landscape management diminished over the 19th and 20th centuries as a result of population pressures from European diseases, introduced agricultural crops, fire prohibitions imposed by the B.C. Forest Service, and the advent of the timber economy as the dominant mode of employment in the Skeena Valley.

Timber management has been one of the most visible and hotly contested landscape management issues in the region, pitting local First Nations against

nonaboriginal Skeena residents from the 1970s to the early 1990s (Glavin 1990). Within the last decade, however, the region's commercially viable old-growth forests have been replaced by a new sector in the upper Skeena's economy that finds intrinsic but marketable values in the lofty mountains and expansive forests.

Ultimately, the potential for new expressions of landscape change is causing many aboriginal and non-aboriginal residents of the Skeena to worry about a new host of conflicts related to loss of economic livelihood, traditional uses, habitat reduction, incompatible land uses, and so forth.

The following is an examination of the responses of First Nations and Euro-Canadian residents to a series of potential, simulated landscape changes in British Columbia's upper Skeena Valley. Following an outline of the theoretical and methodological postulates guiding this research is a description of the interethnic and intra-ethnic dimensions of landscape preference among the upper Skeena participants. This leads to the suggestion that landscape preference formation is an essential, commonplace way of engaging one's surroundings to find significance and satisfaction in them, as well as to reflect on the relationship between ethnicity and culture in landscape preference research.

CONCEPTUAL BACKGROUND

The degree to which sociodemographic variables such as ethnicity mediate or influence landscape preferences and perceptions has been the focus of several studies (for example, Balling and Falk 1982; Ingold 2000; Yang

and Kaplan 1990; Yu 1995). International comparisons involving participants from different countries or ethnic groups (for example, South Koreans, Australians, Americans, or Japanese) have failed for the most part to generate consistent results, suggesting that both similarities and differences are to be expected in making interethnic landscape preference comparisons (Bertolas 1998; Kaplan and Herbert 1987; Nasar 1984; Pierce-Colfer et al. 2001; Zube and Pitt 1981). The accumulation of evidence demonstrating widespread cross-cultural similarities in landscape preference evaluations supports the development of evolutionary or biological theories of human perception positing that people are genetically predisposed to favor environments characteristic of the prototypical East African savannah and that, due to their biological foundation, landscape preferences transcend ethnic and other sociodemographic distinctions (Appleton 1975; Kaplan and Kaplan 1989; Virden and Walker 1999). Some researchers, however, have challenged the "consensus assumption" by suggesting that evidence supporting biological theories of preference has been collected under conditions with high potential for intersubject agreement (Hull and Revell 1989; Van den Berg and Vlek 1998). Cross-cultural and interethnic preference research has lacked an explicit definition of ethnicity from which a compelling theory of the relationship between ethnicity and landscape preference and perception could be expressed.

The term *ethnicity* is derived from the Greek word *ethnos* meaning nation and is therefore closely associated with the concept of people who share a perceived common ancestry or place of origin (Cornell and Hartmann 2007). Weber (1968) devoted little attention to ethnicity but nevertheless offered a seminal definition that endures in the literatures of sociology and anthropology: "We shall call 'ethnic groups' those human groups that entertain a subjective belief in their common descent because of similarities of physical type or of customs or both, or because of memories of colonization or migration" (1968, 389).

Although ethnicity is conventionally associated with a fixed set of categories into which individuals assign themselves, Espiritu (1992) noted that ethnic identification is a multilayered labeling process engaged in by people both within and external to an ethnic group. In effect, while national origin (for example, Chinese, Vietnamese, Korean, Japanese) is often an important basis for ethnic identification, an individual may choose to use a larger panethnic identity (for example, "Asian"), depending on the perceived utility and appropriateness of the label in different settings and audiences (Brubaker, Loveman, and Stamatov 2004; Nagel 1994).

Even within a group whose members share a broadly accepted ethnic identity, membership in that group alone is not sufficient to predict attitudes, behaviors, and preferences in a meaningful way (Chandra 2006; Skrentny 2008). Beyond shared physical attributes, history, and geographic origin, culture is the substance of ethnicity and the foundation upon which ethnic identities are constructed (Betancourt and Lopez 1993). Culture is part of the "toolkit," as Swindler (1986) characterized it, used to create the identities and interpretive systems representing particular ethnic groups. Although ethnicity and culture are related, they are distinct concepts and must be defined separately for research (Phinney 1996).

Notwithstanding the plethora of definitions, culture is generally regarded as the learned or socially transmitted beliefs, behaviors, norms, attitudes, and forms of expression deemed appropriate for a group or community (Gamst and Norbeck 1976; Hall 1959; Kroeber and Kluckhohn 1952; LeCompte and Schensul 1999). It represents "an intersubjective reality through which worlds are known, created, and experienced" (Miller 1997, 103).

To the extent that culture acts as an "intersubjective reality" or perceptual filter through which the social and physical world is experienced and appraised (Naveh 1995), cultural variables, specifically differences in social norms, beliefs, and behaviors, likely will contribute more to understanding differences in landscape preference and perception than will differences

in ethnic identity or other sociodemographic labels. In other words, people do not formulate preferences or perceptions in direct response to their sociodemographic characteristics (Erickson 1988; Kruger 2004) but rather—in the consideration of landscape preferences—as the outcome of a transactional process that includes perceiving landscape condition as screened by culturally based filters of knowledge, belief, expectations and purposes (Hull and Revell 1989; Nassauer 1995). In effect, landscape preference is about deriving information about what possibilities exist as far as human purposes or motivations are concerned (Nassauer 1995; Van den Berg and Vlek 1998). For example, in an examination of landscape preferences in a Canadian aboriginal community, John L. Lewis and Stephen Sheppard (2005) found preferences for varying landscape scenarios dependent on the extent to which they were perceived to fulfill the participant's respective material (that is, subsistence), social, or spiritual needs (Alderfer 1972; Van den Berg and Vlek 1998).

What individuals do in a landscape, and whether or not their purposes are thwarted or assisted, will affect the extent to which they prefer a particular landscape condition (Naveh 1995). In turn, the strength of interethnic differences or similarities in landscape preference judgments depends on the degree to which culturally based practices and normative expectations of landscape condition are exclusive to, or transcend, ethnic communities. Thus, considerable interethnic agreement may be expected among the First Nations and Euro-Canadians of upper Skeena in their landscape preference evaluations, due in large part to common values and motivations that derive from inhabiting a northern resource-dependent community that sets bounds to what people know about a landscape and the conditions that they prefer.

METHODS

To address the research questions—how and why preferences for and perceptions of landscape change differ between and among First Nations and Euro-Canadian

residents—a largely qualitative research paradigm was adopted. Its focus was exploration and discovery, that is, how research participants define their world and what contextual factors influence the thoughts they have about their environment.

Within the domain of landscape preference and perception research is a long history of cross-cultural and interethnic preference research investigating Asian, European, and Euro-American perceptions of modified or planned landscapes (for example, Tips and Savasdisara 1986; Van den Berg and Vlek 1998; Zube and Pitt 1981). Lacking in this body of work, however, is an examination of the landscape preferences of aboriginal peoples, particularly in Canada and the United States. Although a wealth of scholarship in anthropology and environmental sociology addresses the values and worldviews that underpin aboriginal environmental perceptions (for example, Basso 1994; Pinkerton 1998), it contains few comparisons of First Nations with European (that is, Euro-Canadian or Euro-American) perceptions of a controlled set of landscape conditions. The need for information grounded in the participants' view of the world, coupled with the distinctive approach to the examination of interethnic landscape preference in this study, are a good fit with the emphasis on discovery and localized meaning that is the hallmark of qualitative research.

Community residents in the upper Skeena valley were invited to contribute to this research based on three selection criteria:

1. Communication ability: a willingness to co-operate with researchers and ability to discuss their perceptions in some depth
2. Interest: concern about the current and future condition of the Skeena region's landscapes
3. Ethnicity: local First Nations and nonaboriginal residents of European ancestry (that is, Euro-Canadians)

For the latter criterion, the recognition that there are multiple ways of describing the ethnic composition

of a community and that those derived from academic literature or personal conception might not be the most representative (Betancourt and Lopez 1993) dictated that the "correct" ethnic labels to describe the participant sample depend on self-reports or labels that the participants identify themselves as the most relevant ethnic groupings (Phinney 1996). In response to the questions—"Are there ethnic groups in the upper Skeena region?" and "To which group do you belong?"—all of the aboriginal participants self-identified as Gitksan and used the broader panethnic term "First Nations." Since many of B.C.'s First Nations peoples possess some European ancestry through nearly two centuries of mixed marriage, participants were asked whether they identified with the terms "Canadian," "aboriginal Canadian," or any other hyphenated labels reflecting a blended heritage. As anticipated, the First Nations participants rejected Canadian identity due to its association with the dominant "white" society and history of colonization. The nonaboriginal participants consistently self-identified as Canadian but added qualifiers such as physical characteristics (for example, "white-Canadian"), or an ancestor's place of birth (typically the United Kingdom or Central Europe) to describe their ethnicity (for example, "I'm Canadian, but my great-grandfather immigrated from England, so I guess I'm English-Canadian."). For this study, the term "Euro-Canadian" refers to non-First Nations, that is Canadian participants of Caucasian or European ancestry.

Thirty individuals chosen from criteria-based key informant lists and personal introductions consented to participate in the research—15 aboriginal and 15 Euro-Canadian participants. Austin (1994) recommends a minimum sample size of 8 to 10 participants per comparison group when using semistructured or structured interviews with some form of "systematic data collection" method. The sampling process ended when it was determined that the research had reached theoretical saturation (Lincoln and Guba 1985). In other words, sampling stopped when it was determined that, due to the repetition of information in the interviews, ad-

ditional interviews would yield little new information to the research (Miles and Huberman 1994).

The bulk of data came from recorded, semistructured interviews. These primarily one-on-one, in-depth interviews were guided by a list of questions, enabling interview response to ideas as they arose and thus to explore more fully the perspectives of each participant (Merriam 1988). A form of photo elicitation was used in discussions with the participants (Stewart, Liebert, and Larkin 2004).

Visual materials can be useful in semistructured interviews since they help participants express perceptions or concepts that may be difficult for them to articulate otherwise. To elicit participant preferences and perceptions of landscape change alternatives, the interviewer used computer-generated (Visual Nature Studio™), photorealistic simulations of the upper Skeena landscape depicting a range of landscape conditions. Existing-condition photography, obtained from three viewpoints identified with community members, represented sites both accessible and familiar to most upper Skeena residents (Sheppard 2001).

Four landscape-change scenarios—Pre-Industrial, Industrial, Multi-Use, and Natural—were developed in consultation with local land use experts (foresters, landscape architects, and ecological historians) and simulated for each viewpoint location for a total of 12 images (Figures 2 to 5). The scenarios represented possible future conditions in the upper Skeena's forested landscapes based on the reintroduction of historic land uses, such as First Nations fire management for ethnobotanical food products; probable changes in the social and economic characteristics of the region, such as continued exurban migration from Vancouver, Edmonton, and Prince George; and transition from a resource-based timber economy to nonextractive land uses, such as recreation and tourism (Chipeniuk 2004).

The interviews generally followed a consistent format. Participants were presented with the landscape simulations for the first viewpoint and asked to sort (that is, rate) the images into three piles according to

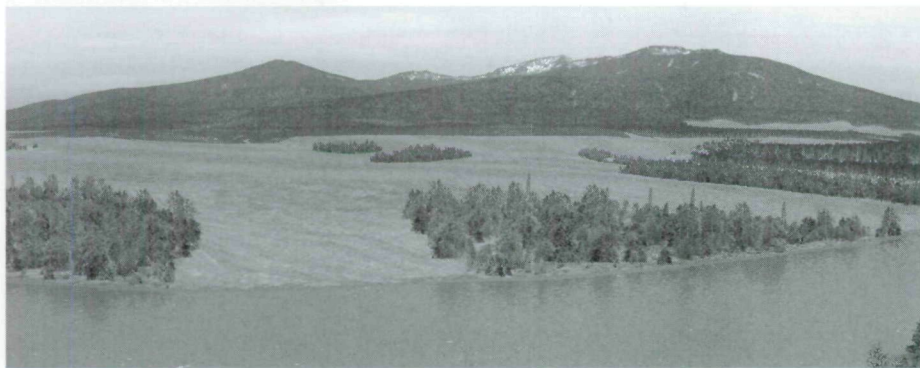
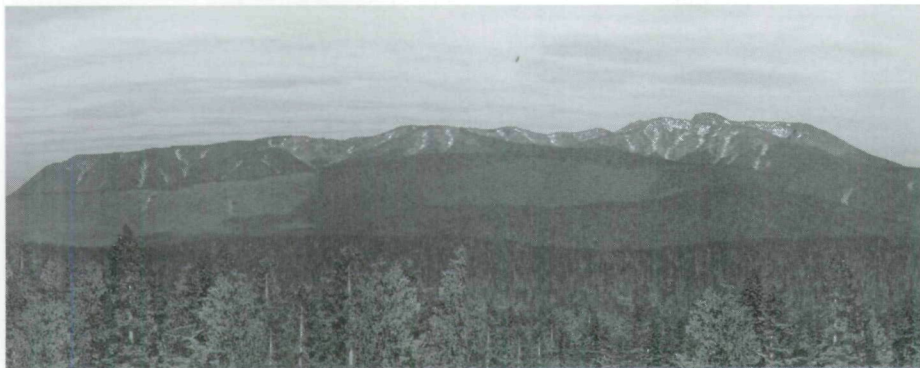


Figure 2. Pre-Industrial Scenario: assumes the reintroduction of traditional burning practices by local First Nations for the management of ethnobotanical food products—that is, berries, root crops, wildlife browse and so forth. Assumptions governing the size and morphology of burn patterns are derived from interviews with Gitksan elders, ecological historians, and archival photography.

their most, least, and, if applicable, moderately preferred condition (Canter, Brown, and Groat 1985; Fairweather and Swaffield 2001; Green 2005; Scott and Canter 1997). Probing questions elicited additional qualitative detail about the participants' preference decisions and explored their perceptions or interpretations of the simulated changes. In other words, the pile-sort exercise was intended to elicit basic preference responses, while the follow-up questions explored the scenario attributes and invited the participants to explain their perceptions of those attributes—for example, "Why do you prefer this condition?" "How will the changes that you see in this/these picture(s) affect the forest?" "Do any of these pictures reflect the way you would manage this landscape?" The process of

image sorting followed by in-depth questioning was repeated for each viewpoint.

The content of the participants' pile sorts was recorded and, together with the qualitative explanations of the sorting exercise, the interviews were tape-recorded, transcribed, and subjected to a form of qualitative content analysis. The preference data was first organized into clusters based on similarities in the participants' scenario ratings or pile-sort decisions. The interview transcripts were then combed for individual pieces of data or "bibbits" related to the common aspects described by each participant cluster as explanations for their pile-sort decisions (Kirby and McKenna 1989).

As a form of content analysis, these bits of information were extracted from each interview and analyzed



Figure 3. Industrial Scenario: posits that large-scale clearcutting may be re-introduced to suppress the proliferation of beetle infestations, provide incomes for local residents, and control "decadent," overmature stands. The simulated harvest openings are based on 60-hectare cutblocks, provincial forest inventory GIS datasets, and consultation with professional foresters.

in terms of consistencies and inconsistencies among individual participants and, in particular, between and within ethnic groups (Goetz and LeCompte 1984). The qualitative analysis sought to ensure that the clusters identified by the preference ratings could stand alone. In other words, each cluster was to describe a discrete group of participants in terms of their scenario preference ratings and the qualitative explanations of those ratings by the participants.

RESULTS

Overall, the pattern of results from the content analysis demonstrates that the preference clusters largely comprised participants from both ethnic groups, thus

suggesting that ethnicity is a weak determinant of relative preference evaluations. As the following discussion illustrates, ethnicity only partially accounts for differences in preferred landscape condition as the participants predominantly tended to evaluate landscape changes purposively or from a user perspective. Landscape-based behaviors seen in terms of how an individual uses the forest landscape, common to both ethnic groups, and the knowledge resulting from purposive activity appear to be the essential determinants of preference judgments.

Cluster 1

The only participant group or cluster clearly distinguished in terms of ethnic identity consisted of four

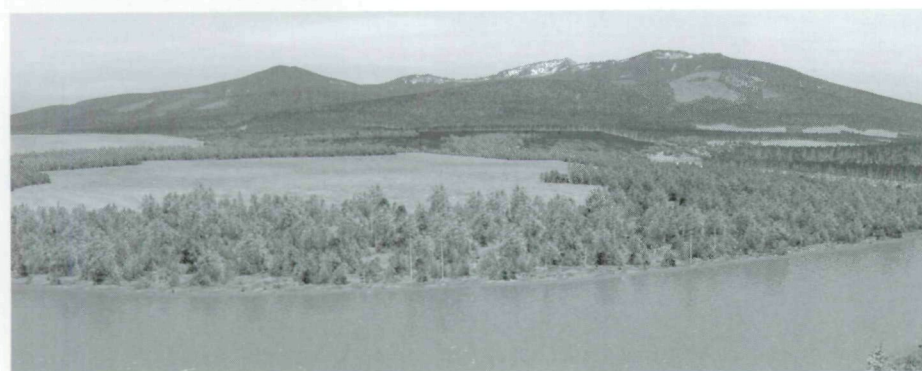
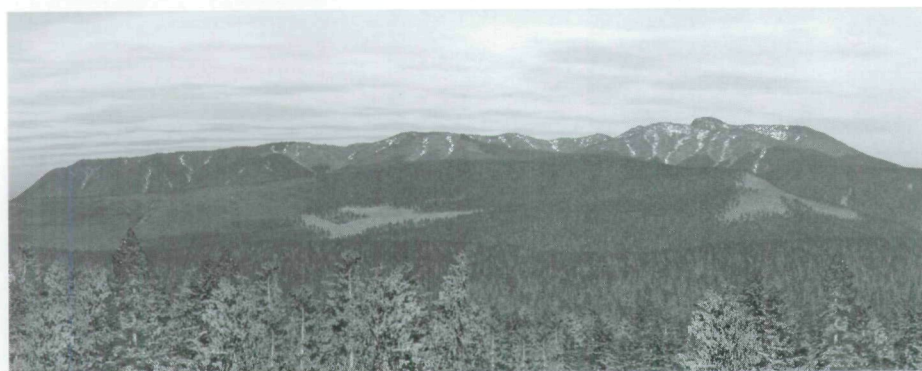
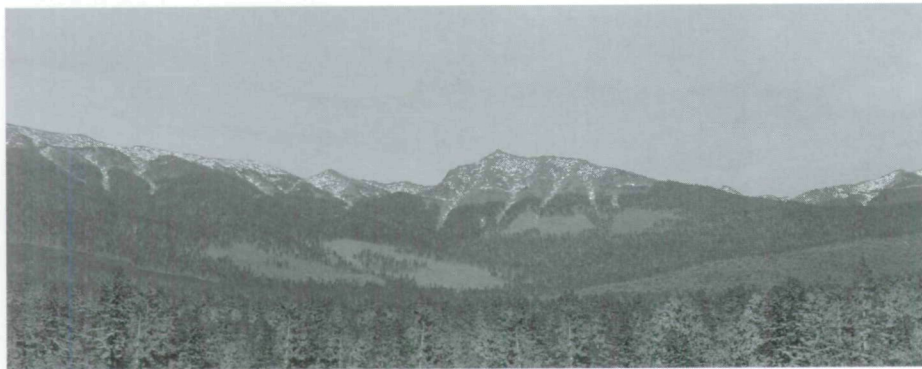


Figure 4. Multi-Use Scenario: posits that as new residents enter the region seeking a bucolic rural lifestyle, forestry must compete with aesthetic interests and forest uses that are increasingly varied. The scenario depicts timber harvest openings that emulate natural disturbance patterns and coincide with range management, ethnobotanical products management (burning), and intensive riparian protection. The scenario was developed in consultation with landscape ecologists, in accordance with provincial Visual Quality Objectives.

baby-boomer (individuals in their midforties to early sixties), Euro-Canadian males actively employed in the forest industry as contract loggers or small-scale sawmill operators. Moreover, based on their biographical statements, a limited range of activities—that is, employment and the occasional hunting or fishing trip—affected the ways they valued and used the forest landscape

Although no single scenario was rated as highly preferred, the most preferred was the Industrial condition. In effect, most of the participants in this cluster described conventional clearcut forestry as a visually unappealing yet sometimes necessary form of management:

EC9: Sometimes clearcuts are ok. It just depends on what your objectives are. But that doesn't mean I like looking at them. (Similar comments expressed by three other participants.)

Initially, the Cluster 1 participants rated the Pre-Industrial and Multi-Use scenarios as moderately preferred due to their perception that these reflected harvest openings with more irregular and, therefore, naturalistic boundaries:

EC10: When we go out hunting and fishing we don't want to look at clearcuts scarring the landscape; that's why I prefer smaller ones. There's less visual impact; it's better public relations. (Similar comments expressed by two other participants.)



Figure 5. Natural Scenario: assumes that the region's forestry sector will continue to decline and eventually be replaced by nonextractive, recreational land uses. The scenario reflects a desire for visually pristine landscapes by allowing natural processes to dominate the course of landscape patterns and processes. Assumptions governing species composition and other forest characteristics (for example, density and height) were developed with the assistance of landscape ecologists.

They changed their preference ratings, however, when informed that the burn patterns in the Pre-Industrial scenario represented the reintroduction of fire for traditional food management by Gitksan residents:

EC8: I think that it's not two hundred years ago now, that we know enough and there's enough value in that timber that it would be stupid to burn it just to make some huckleberries. . . . You see I take issue with the idea that anything the Indians do is just automatically good because they're so in touch with the land because they're Indians . . . wanting to burn berries because they're Indians makes no sense to me. (Similar comments expressed by two other participants.)

Similarly, preserving the landscape according to the Natural scenario for recreation, wildlife, or scenery—without some form of commercial timber management—was described as unacceptable in its wastefulness:

EC11: I wouldn't like it because I think it's kind of a waste of the land base. We're in tough economic times, you know, people kind of need the work. Yeah, to me, I don't know why you'd want to leave the whole area there untouched. (Similar comments expressed by three other participants.)

These and related statements indicate that Cluster 1 participants based their preference evaluations on a conventionally anthropocentric consideration of

landscape change. In effect, their rejections of both the Pre-Industrial and Natural scenarios and qualified preference for the Industrial and Multi-Use conditions were predicated on concerns for how the changes would affect human uses and landscape values, specifically forest-industry employment and recreation.

Where naturalistic changes were appreciated, such as in the irregular cutblock boundaries and reserve patches depicted by the Multi-Use condition, they were viewed instrumentally as a means of improving the public image of forest management and enhancing the quality of recreational experience for local residents and tourists. Implicit in their comments is an opposition or dualism between humanity and the landscape wherein the latter was perceived as an object fulfilling human needs and largely subservient to them (Brunson 2000).

Cluster 2

The second participant cluster was sociodemographically more heterogeneous than Cluster 1 to the extent that of the three participants—two male and one female—one male was Gitksan, both males were baby boomers, and the female was relatively young (in her mid-twenties). Their experience with the forest landscape, however, came mostly through recreational encounters such as frequent hiking excursions and the occasional camping or fishing trip. In this respect, they shared some of Cluster 1's limited breadth of experience with the landscape.

The Cluster 2 participants were consistent in their appraisals of the simulated conditions. For example, the Natural scenario was the unambiguous favorite. In effect, they attributed their preference for a "pristine" condition to the conception that human management is synonymous with the disruption of an environment that is whole and in balance:

FN12: All my life I've liked that sort of forest area, and I really don't know why . . . it might be because it's something that I've regarded as more natural . . . there's been no attempt by humans to interfere with things. . . . I've always had the bias that what we call

management is more interference. (Similar comments expressed by the other two participants.)

Conversely, they rated the Industrial scenario as the least preferred, in part due to the size and shape of the treatments, but their judgments were also informed by a consideration of humanity's place in nature as an agent of change:

EC15: When you've got that kind of thing scarring the landscape, I don't think that it benefits anyone other than the bottom line of the big companies. To me, it just kind of reflects the destructive power that people have over nature. (Similar comments expressed by the other two participants.)

Perhaps owing to the pragmatism of living in a region historically dependent on the timber industry, the participants in Cluster 2 gave the Multi-Use scenario a moderate preference rating. Although the Multi-Use treatments were noticeably smaller than those of the Industrial scenario (35 versus 60 hectares, respectively), their size was the main factor qualifying the participants' generally favorable outlook on landscape disturbances attempting to mimic the form of natural openings and perhaps benefiting wildlife through the retention of riparian and wildlife tree patches. These participants were sensitive to the operational difficulties of the treatments and suggested that the Multi-Use condition reflected greater care and attention to natural habitat and topography:

FN12: It looks more natural because the trees, there's no sharp, like this one here, it's more like a feathered edge. The trees extend into the open area, all around it, and it's a more irregular, more natural pattern. (Similar comments expressed by the other two participants.)

The Pre-Industrial condition strongly resonated with the Gitksan participant. Despite his lack of direct experience with the traditional use of fire for berry management, he saw in the scenario a visible representation of his culture in that it reintroduced activities

and patterns of landscape management that had been practiced for generations and with which he was at least conceptually familiar:

FN12: It's cultural and it's cultural in that the Gitksan and, in other areas, the Wet'suwet'en have through the generations made use of nontimber forest resources. I think it's important that we continue to have that kind of access to those values, to those areas within our own traditional lands.

Both of the Euro-Canadian participants in Cluster 2 were anecdotally aware that First Nations in the Skeena region had traditionally used fire to manage berry crops and generally supportive of reintroducing the practice, but their preference ratings were predicated more on the condition's potential to provide browse for wildlife and enhance the quality of their hiking experiences:

EC15: We like harvesting berries when we head out into the bush, at least when you come across a good patch or two. It would be great to see more of them on trails or beside logging roads. (Similar comments expressed by one of the other two participants.)

Overall, the comments made by this small group reflect a straightforward biocentric position. In effect, judging from their strong preference for the Natural scenario, outright rejection of the Industrial scenario, and generally favorable outlook on the natural disturbance patterns in the Multi-Use and Pre-Industrial scenarios that, in their minds, would provide browse opportunities for wildlife, the importance of natural landscape patterns and processes was paramount. In contrast with the instrumentalist perspective of Cluster 1, members of Cluster 2 based their preferences on the intrinsic worth of nature. However, because the natural world possesses value that transcends human needs, and people are viewed as a threat to the landscape, the Cluster 2 mindset separated people from nature and, to some degree, shared elements of the human-nature dualism expressed by Cluster 1.

Cluster 3

The largest of the three participant clusters was demographically more heterogeneous than the preceding groups. The 23 individuals making up Cluster 3 included 13 Gitksan and 10 Euro-Canadian participants, 9 seniors (people over age 60), 11 baby boomers, 2 young adults, 7 females, and 16 males. In addition, according to their biographical sketches, the people in Cluster 3 had led varied lives. At some point, each depended on the forest industry for employment. In addition, the forest landscape was a vital source of food for Cluster 3 participants, particularly during lean economic times.

Whether it was the source of meat from hunting or fishing or of plants such as wild mushrooms, berries, herbs and medicinal plants for consumption or sale, for the people in Cluster 3 the bush was more than a setting for occasional leisure activity. As illustrated by the comments below, for both First Nations and Euro-Canadians the bush was an essential contributor to their livelihoods, providing income, supplementing diets, and sustaining extended family members who might be incapable of providing for themselves in a given year:

EC1: Hunting's a huge part of the way people live up here, a huge part for whites and Natives. How else are you going to feed a family if you've just been laid off or the mill's been shut down? (Similar comments expressed by eight other participants.)

The simultaneous consideration of multiple impacts on subsistence resources was a common refrain in Cluster 3 responses. In their consideration of the Industrial scenario, participants spoke to a range of salient factors including aesthetics, the integrity of fish and wildlife habitat, timber management, and wild-plant harvesting:

FN14: It's not very cosmetic, but they've left the mountainsides alone. It's all a matter of, if you're looking at it just like fiber, fiber, fiber, then that's no good. I've seen a lot of grazelands up the Kispiox Valley where there's absolutely no in-stream vegetation, and the

fish populations there have just been decimated. And here, what if you want to go shoot a moose, or what if you just want to walk through a nice forest? Yeah, there's other values there besides the fiber. (Similar comments expressed by 11 other participants.)

Equally intolerable were the Multi-Use treatments, characterized as a superficial attempt at aesthetic enhancement that would ultimately be of little benefit to wildlife and hunters, due to the long-term effects of windthrow:

FN9: I don't like them, because the patches a lot of them end up to be blowdown. . . . Because there's no protection, eh? So a lot of the patches, you could see them, they're just blowing down because the winds are too heavy. So it causes a lot of blowdown, and there again it's too tough on our animals. (Similar comments expressed by 10 other participants.)

Given the prevalence of wild-plant harvesters in both ethnic groups, it is reasonable to expect that Cluster 3 would prefer the burn treatments depicted by the Pre-Industrial scenario. These participants, however, were dismissive of that scenario, arguing that it represented a single land use that did not balance or accommodate other important subsistence and economic uses of the forest landscape. In effect, greater value would be derived from the forest if berry production could be reconciled with a range of other land uses:

EC7: I think a better way of doing this would be to log it off and then manage for berries. We need to stop managing our land base as though it were producing a single crop. (Similar comments expressed by six other participants.)

These participants considered the Natural scenario an essential intermediate step toward a more diverse and balanced use of the landscape. Unlike their counterparts in Cluster 2, who valued the Natural scenario as an ideal end condition, Cluster 3 characterized the Natural scenario as an essential means of healing the

damage of the past three decades, following which a selective approach to timber management could sustain the local economy as well as wildlife and plant habitat:

FN9: We could tell them where they might be able to log, and we can tell them areas where they shouldn't log. . . . But it's just beautiful like this, and it's the most perfect area for trapping. (Similar comments expressed by 10 other participants.)

In summary, the forest landscape is a key facet of Cluster 3's way of life in that it provides, and members of Cluster 3 are active beneficiaries of, a diverse range of forest values. Perhaps owing to the multiple and immediate benefits that the landscape affords, Cluster 3 participants engaged in a complex assessment of multiple impacts associated with each scenario. A recurrent theme in their comments was the notion of respect, or the consideration of multiple uses and users both human and nonhuman, in their preference evaluations:

EC7: We've got to respect what we've got here; otherwise we'll have nothing left. What we do to the forest affects everything from timber to fish and hunting. (Similar comments expressed by 11 other participants.)

In other words, landscape change must accommodate the needs of other users and future generations by retaining sufficient resources to ensure their long-term existence and vitality (Lewis and Sheppard 2005). This perspective departs from the first two clusters in that the landscape is not regarded as a detached object to be developed or admired from a distance, but that people are embedded within and are therefore entitled to use their environment with an over-riding sense of responsibility to it and to present and future generations of both human and nonhuman users.

Overall, the participants in Cluster 3 demonstrated a more complex view of the world than those in Clusters 1 and 2. The relatively limited purposes through which Clusters 1 and 2 encountered the forest were reflected

in a similarly constrained conception of what values the landscape held and a more dualistic understanding of human landscape interaction. This framework contrasted clearly with the perspectives of Cluster 3, which spoke of the diverse ways in which participants relied on the forest landscape and the profound disruption they felt as a result of changes to their environment. As described earlier, they demanded more respect for the landscape because of their sense of "belonging to" and connectedness with something on which they and others were dependent:

FN7: It looks like a big festering sore, and it feels like your heart's ripped out.

EC2: I guess if you look at things as if you're connected to it, I don't know if other people go around with these blinkers that maybe I have, is that if you're connected to everything you feel what that feels like. (Similar comments expressed by eight other participants.)

These "blinkers" or perceptual filters seem to be more than a product of an individual's ethnic identity or community affiliation—rather they are largely a product of how people interact with their environment.

DISCUSSION

This study represents an effort to explore ethnicity as a mediating factor in landscape preference and perception using participants from two distinctive ethnic groups who maintain clear conceptions of their respective identities—that is, First Nations and Euro-Canadians. The qualitative responses to the landscape change scenarios resulted in a mixed pattern of insights that nevertheless pointed to some noteworthy findings.

First, the results demonstrate the ethnic heterogeneity of the participant clusters. The preceding discussion makes clear that with the exception of Cluster 1, the study groups included both First Nations and Euro-Canadian participants. Ethnicity proved, at best, however, a weak determinant of landscape preference. The

principal factor appearing to unite First Nations and Euro-Canadians in their appraisals of the landscape scenarios was less *who* they were in terms of superficial sociodemographic characteristics than *how* they interacted with their environment, which is, in turn, influenced the perceptual filters of motivations, needs, and purposes they brought to a landscape setting. In effect, distinctions of ethnicity mattered less than whether an individual used the forest for employment, subsistence plant harvesting, hunting, fishing, recreation, or a combination of these and other activities.

In the context of the upper Skeena valley, many of these uses of the forest landscape were not exclusive to a particular ethnic, age, or gender group, thus reflecting the interethnic significance of what some Skeena residents described as a "bush" way of life or culture.

Second, in addition to the way an individual encounters the landscape, the variety of those encounters may significantly influence on preference judgments. The participants of Clusters 1 and 2 demonstrated narrow or dualistic conceptions of human-environment interactions. Implicit in the comments of both clusters was the conception that the landscape stands apart from humanity as an object of human use or of passive appreciation. This finding is noteworthy in itself to the extent that a number of studies have characterized naturalists and forest industry workers as the opposing ends of an environmental-values continuum (Hull, Robertson, and Kendra 2001; Satterfield 2002; Vaske et al. 2001; White 1996).

Nonetheless, I have chosen to contrast Clusters 1 and 2 with the participants in Cluster 3 who experience the landscape through a variety of perceptual filters, or more diverse and multi-faceted perceptions, and are thus more attuned to the multiple benefits that the forest landscape provides as well as how people are embedded within the landscape and natural environment. This finding is consistent with other landscape perception studies (Morris, Fairweather, and Swaffield 1997; Swaffield 1991), which have found that differing interpretations of landscape are comprehensible only

in the context of an individual's interests or "frame of reference" and, moreover, that involvement is an essential variable in landscape preference and perception. In other words, people with more direct and diverse landscape experience have more complex or nuanced interpretations of landscape change.

In general, sociodemographic variables such as ethnicity (and perhaps gender and age) matter less in understanding local landscape preferences than "community of interest" (Swaffield 1998). In other words, communities of shared interests (for example, hikers, subsistence hunters, and trappers) tend to prefer particular landscape qualities that are most relevant to or capable of providing their preferred activities. Moreover, the more involved or multifaceted a community's relationship with the landscape, the more complex or nuanced its landscape preferences.

Should these findings be interpreted to mean that ethnicity and potentially other sociodemographic variables must be abandoned and that landscape preference research start again on an entirely different conceptual foundation? Ethnicity will remain a factor in social science research because of the importance of describing participant samples as well as of exploring and understanding other potential differences associated with ethnicity. Moreover, if the sample had included participants lacking familiarity with or local knowledge of the Skeena Valley, ethnicity may have exerted a stronger influence on the preference evaluations. Still, ethnicity must be considered with some appreciation of its limitations as an explanatory variable.

For future landscape research, as well as for decision-makers consulting with different communities about landscape management plans, the specification and definition of community must take place within its local context. Community in a general sense may describe an ethnic group as well as a geographic community of location, but based on the findings of this and other studies (Swaffield 1998), communities of interest may be more integral to the expression of landscape preferences. Lived experience gained from how

people interact with their environment through shared patterns of behavior and motivation for behavior is more revealing about how different groups value and perceive the landscape than ethnicity or national origin (Hull and Revell 1989; Jacob 1987; Naveh 1995).

Future research employing explicit operational definitions of *culture* and *community of interest* as well as larger and more heterogeneous samples may provide a valuable contribution to the existing body of landscape preference literature as well as a framework to help planners understand the kind of knowledge frameworks and behavioral interactions that underpin differing responses to landscape plans.

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