

**A Digital Assemblage:
Diagramming the Social Realities of the Stikine River Watershed**

by

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A DIGITAL ASSEMBLAGE:
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Submitted to the Program in Comparative Media Studies on May 15, 2002 in partial fulfillment of the requirements for the Degree of Master of Science in Comparative Media Studies at the Massachusetts Institute of Technology.

ABSTRACT

This study examines the landscape of the Stikine River Watershed through varied perspectives and heterogeneous data sets following a mode of inquiry that uses landscape as a condition for relating factors of knowledge, discourse, and power. Working with the premise that each piece of data represents a fragment of information, the digital assemblage was conceived, built, and examined as a possible solution for reflecting the underlying rhizomatic structure of social realities. At the heart of this study and experimentation is a question of how to represent the complexity of social realities through the limitations and capacities of various forms of media and digital space.

This thesis is comprised of two parts: a written analysis, and a built prototype of the digital assemblage on CD ROM. The written analysis provides a kind of designer's manual for understanding the ways in which theory, history, and practice interact to create a conceptual foundation for the built digital assemblage. The built assemblage experiments with diagramming and representing geographic topography, social and capital institutions governing land use, aspects of cultural history, economic and community land and resource developments, areas of conflict therein, and the resulting social conceptions about the geographic space of the Stikine Watershed.

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I. INTRODUCTION: UNDERSTANDING THE ASSEMBLAGE

“Life on earth appears as a sum of relatively independent species of flora and fauna with sometimes shifting or porous boundaries between them. Geographical areas can only harbor a sort of chaos, or, at best, extrinsic harmonies of an ecological order, temporary equilibriums between populations.”

– From *A Thousand Plateaus: Capitalism and Schizophrenia* by Gilles Deleuze and Felix Guattari¹

How do we look at a landscape? Perhaps, we gaze at it from a lush or spectacular vantage point, or we may take a look at a photograph of a similar view. We may read a map, see a family member’s home video, or listen to stories of an adventure. Or for more remote, distant areas, we may simply know something about a geographical area through television, print or radio journalism and/or tourism propaganda. These broadcast stories for a mass audience may include spectacular imagery or fantastic stories promoting some aspect of a landscape, its inhabitants, or in this day and age, its combatants. Each of these forms of media represents a fragment of information, or a glimpse of a reality present within a certain geographic space.

How is this different than a lived experience within a landscape? How do we explain our knowledge of a city, a park, or a favorite hiking path? Often this kind of knowledge is contextualized within stories, adventures, or an individual’s sense of belonging to a community and/or a history. This kind of non-electronically mediated experience may seem more immediate, realistic, cultural and/or historical, and may reveal several related fragments of information. But there are no widely used methods or conventions for recording this combination of disparate information, nor does it stand as a representation of multiple perspectives. And what of the biologist, geologist or commercial fisher who may work in an area and see it through a lens of data and/or commercial requirements? Like a local resident, or a tourist, their experience, both lived and quantified, reflects the fragmentary nature of our society, and human relationships with landscapes.²

¹ Gilles Deleuze and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi, (Minneapolis: University of Minnesota Press, 1987), p. 48.

² Richard White, *The Organic Machine: The Remaking of the Columbia River*, (New York: Hill and Wang, 1995), p. ix. White’s work in this text originally inspired me to starting thinking in terms of humanity and nature as parts of a synthesized interactive whole. His concept of an organic machine provides an access point and view of the river as a synthesis of human interventions in what is essentially a wild organic system. He considers the river, “...an energy system which, although modified by human inventions, maintains its natural, its ‘unmade’ qualities.” White’s underlying argument is that natural and human histories cannot be understood without each other, and combining the two is not a matter of putting one alongside the other. Instead he employs qualities of energy

THEORETICAL FRAMEWORK

Following Michel Foucault's investigation into mechanisms of power and relations of sites, and Gilles Deleuze and Felix Guattari's rhizomatic framework for analysis, I am interested in looking at landscapes as a condition for relating factors of knowledge, discourse, and power through an assemblage of representative data.³ Data, whether qualitative or quantitative, shapes the way landscapes are understood and represented. It can be defined as official, unofficial, standardized, non-standardized, and exists in various recorded forms. What are most commonly known, used, and archived are the official standardized recorded forms of data – much of which reflects the order, or maintenance of order administered by institutions. Emblematic of the way in which landscapes are understood is the standardized method of categorizing and archiving disparate packets of data and knowledge in various forms. Stories, history, and culture are separated from administrative detail and decision making about land use; biologic and geographic data are not routinely combined with local knowledge or understanding of natural resources. Even this term 'natural resource' poses some kind of division as if there are natural and unnatural resources in relation to a landscape. This separation of data creates the appearance of independent facts and perspectives, and typifies the institutionalized ideal of streamlined information required for judicious, efficient decision making.⁴ But taken as a whole, the reality of a landscape reflects more closely the underlying rhizomatic structure and chaos described by Deleuze and Guattari where linkages between people, data and objects are occurring, and occurring in a constant state of flux based on historical, present, and future events.⁵ Underlying this is a concept of

and work as metaphors to understand the tasks performed by both humans and the river in relation to one another.

³ Michel Foucault, *Power/Knowledge*, trans. Colin Gordon, Leo Marshall, John Mepham, Kate Soper (New York: Pantheon Books, 1980), p.77. In the interview on geography (chapter 4), Foucault was asked about applying his discursive formation to geographical discourses. His work does not address geography directly, but much of his work involves notions of spatiality, and in this interview he stated: "Geography acted as the support, the condition of possibility for the passage between a series of factors I tried to relate."

⁴ Foucault, *Power*, ed. James D. Faubion, trans. Robert Hurley, et al. (New York: New Press, 2000), p. 349. In this text, Foucault was interviewed about the theme of space in relation to knowledge and power. Referring to the eighteenth century, he states: "One begins to see a form of political literature that addresses what the order of a society should be, what a city should be, given the requirements of the maintenance of order..." Jonathan Crary in *Suspensions of Perception* (Cambridge: MIT Press, 1999) and *Techniques of the Observer* (Cambridge: MIT Press, 1992) reiterates this in terms of the visual. I am using these constructs in which to look at data in general.

⁵ Deleuze and Guattari, pp. 3-11. This conceptual structure of a heterogeneously connected rhizome is the underlying basis for thinking about the way relations occur between diverse forms and sets of data.

fragments, and a sum of connected forces and objects in a state of flux, or changing harmony.

By separating geographic data from the perspectives of those who use the land, data becomes incomplete. And further, by separating some perspectives from others, or claiming a removed and therefore objective or administrative perspective, what is presented restricts the domain of knowledge ensuring the continuity of certain types of power. What I am proposing is to look at landscapes, and inhabitants as indecipherable elements of what Deleuze and Guattari call a “temporary equilibrium.” To understand what it is that constitutes a landscape involves combining its related data regardless of form, and revealing the linkages, and relations between data, actors, history, culture, and other related conceptual elements.⁶ These heterogeneous layers of information, and modes of inquiry represent multiple dimensions that are rarely taken as a whole system of interrelations. Alberto Melluci writing about collective action notes that a “reduction of complexity” is necessary to maintain ordered decision making in a contemporary political system.⁷ The temporary equilibriums of everyday life reflect a much more rich and diverse assemblage, or what might be called a bricolage of relations, data, and events.⁸ It is this problem of how to represent complexity that I want to address.

At the heart of a representation of complexity lies a distinct negotiation between standardized and non-standardized information as it relates to objects, patterns, and human actors. What constitutes knowledge in relation to a landscape has been reduced, separated, and synthesized via most of the mediated forms that are currently in circulation. My interest is to create a representation that unveils what is contained within symbols so as to infuse them with knowledge and experience, to infuse perspectives with data and related experience, and to combine multiple fragments in an interactive

⁶ “Of Other Spaces” (Originally published in French as “Des Espace Autres” *Architecture/Mouvement/Continuité*, October, 1984), trans. Jay Miskowiec, 13 May 2002 <<http://foucault.info/documents/foucault.heteroTopia.en.html#1>>. My use of this Deleuzian structure also dovetails somewhat with a created version of Foucault’s notion of a heterotopia described here: “... places... which are something like counter-sites, a kind of effectively enacted utopia in which the real sites, all the other real sites that can be found within a culture, are simultaneously represented, contested, and inverted.”

⁷ Alberto Melucci, *Challenging Codes: Collective Action in the Information Age*, (Cambridge: Cambridge University Press, 1996), p. 177.

⁸ Deleuze and Guattari, pp. 3-4. I had begun this project using the word ‘model’, but Professor Joe Dumit encouraged me to seek a term more descriptive of what I was trying to create. I’ve taken the term ‘assemblage’ from Deleuze and Guattari where they describe their book and an assemblage in these terms: “In a book, as in all things, there are lines of articulation or segmentarity, strata and territories; but also lines of flight, movements of deterritorialization and destratification. Comparative rates of flow on these lines produce phenomena of relative slowness and viscosity, or on the contrary, of acceleration and rupture. All this, lines and measurable speeds, constitutes an *assemblage*.”

framework. It is my contention that how knowledge about landscape is acquired, used, manipulated and passed on is a crucial determining factor in planning and development. Without a method or framework for combining disparate forms of data representing voices, perspectives, and statistics, streamlined decisions can be as deficient as the data used to perform the analysis and decision-making. This becomes particularly interesting in regards to wilderness and rural landscapes. Wilderness and rural areas have historically been seen as a blank slate, and impenetrable or unknowable. Literature, fiction and non-fiction, often reflects this ideal of the pristine and the empty. Decisions are usually made by individuals in urbanized centers of power through a combination of mapping and statistical data and tools. In this sense, much of the knowledge about a wilderness landscape conforms to the larger disciplines that variously map and analyze selected aspects of the world.

PROJECT DESCRIPTION: THE STIKINE WATERSHED

In the interest of using “an object to think with,” I have chosen to analyze the large and sparsely populated area of the Stikine watershed in the northwestern part of British Columbia, Canada.⁹ This area roughly corresponds to the traditional and ancestral territory claimed by the Tahltan Nation, an indigenous tribe of which I am a member through my father. I have some knowledge of the land as a part of my cultural heritage, and as a result of a previous broadcast television documentary I produced and directed on Tahltan culture.¹⁰ I would like to turn my attention to significant factors affecting the land, such as administrative bodies, and capital endeavors now at work in this area, and combine this with historical, cultural, and social factors to develop a representation of a working system that would reflect glimpses of relations and connecting lines of interaction. These elements and factors represent layers of information and knowledge, and modes of inquiry into a landscape that normally retain autonomy from one another. My investigation will focus on inventing a way to represent the rhizomatic structure of overlaps, ruptures, and movements between these layers while taking into account the non-standardized format and heterogeneity of data.

The timing is particularly interesting for this kind of exploration as the Tahltan region has been the subject of a several-year long intensive land planning exercise (called Land Resource Management Plan/Planning or the LRMP) that involved economic stakeholders representing corporate, governmental, and non-governmental interests in the area. These interests focus primarily on natural resource extraction, as well as, conservation and preservation of lands. Data used in the course of this process generally

⁹ Lévi-Strauss, Claude, *The Savage Mind*, (Chicago and London: University of Chicago Press and Weidenfeld and Nicolson, 1966).

¹⁰ Candis Callison, *Traditional Renaissance: Art of the TaLaDeNe*, The Knowledge Network, British Columbia, 1996-2000. This thesis and the assemblage contain images and excerpts of interviews gathered for this production.

conforms to the conditions of separation and specialization described above.¹¹ However, there were moments in which anecdotal, cultural and historical reasoning co-mingled at the negotiation table via the presence of Tahltan Elders, Tahltan cultural leaders, local residents, and environmental activists. The official record of process reflects very little of these interactions or analyses as there is no precedent, format, or reason for such a record. Streamlined specialized methods of valuing and storing data do not reflect the problem-solving processes, nor do they take into account non-standardized data, and the value of system analysis based on interacting relations of knowledge and power.¹²

The Tahltan region is colloquially referred to as the most remote area in British Columbia, and as a result, is most often discovered or understood through data provided in maps. Maps generally reflect the kind of lens with which a wilderness area is viewed.¹³ A tourist or generalized map would reflect the lack of road access, small towns, and the limited human footprint. A mining map, on the other hand, reflects the ongoing explorations, working mines, known deposits, and claims. A hunting map would show invisible arbitrary boundaries that divide up the land on the basis of licensees for trapping or hunting, and conservation standards for animals. The tendency to view an area such as this as an empty, desolate or pristine landscape with little or no human intervention would be incorrect, but perspective is generally dependent on the data available to the individual or administrative entity. Apprehending the way that these lenses and perspectives interact and overlap requires a tool for conceptualization that allows for assemblages.¹⁴

The majority of media tools such as maps, television, and brochures represent a series of fragments sliced and diced in various means and ways according primarily, to the capacity and levels of density inherent in the form of representation.¹⁵ The stories and histories of inhabitants are not necessarily printed on a map that contains the topological layout of their homes and landscape. And watching stories via the stream of television or pause/replay of recorded video does not necessarily provide a sense of relative location,

¹¹ Crary in *Suspensions of Perception* points out that our attention is increasingly focused and rewarded for its specialization and separation.

¹² Bruno Latour, *Science in Action*, (Cambridge: Harvard University Press, 1987), p. 16. Latour notes that the way things are studied in a scientific or academic setting do not stem from the actual problem to be solved, but more closely reflect entrenched relations between disciplines, subject areas and data. This is also reflected in bureaucratic data collection of problem solving exercises such as land planning.

¹³ Arthur H. Robinson and Barbara Bartz Petchenik, *The Nature of Maps: Essays toward Understanding Maps and Mapping*, (Chicago and London: The University of Chicago Press, 1976), p. vii-xi.

¹⁴ Crary, *Techniques of the Observer*, p. 9. Crary uses some of Deleuze and Guattari's framework to look at interactions between media technology and society in the nineteenth century, particularly in reference to the camera obscura.

¹⁵ Many thanks to Professor William Urrichio for helping me make this distinction between dissemination capabilities and capacity of form.

or even a sense of the context of a landscape. Each story contains useful, interesting details and may try to stitch together one or two fragments, but barely touches on the whole of a landscape, nor can it hope to describe the complexity and kinds of forces at work within a landscape. In addition, spatial and temporal restraints are embedded in video, audio, and print media. There are moments when each attains something approaching the kind of assemblage media I am proposing. For instance, medieval maps represented a combination of lore, culture, history, opinion, and geographical markers.¹⁶ And television with its newly windowed effect mirroring digital media seeks to provide multiple points of dissemination in an effort to compensate for spatial, temporal and interactive restraints.¹⁷

USE OF DIGITAL SPACE: DESIGN/METHOD

Digital media, in its remediation of both the restraints and possibilities of video, audio, and print allows fluid access to multiple forms of data, and by its nature is an assemblage of various kinds of representations. My interest is in utilizing what I see as a new space in digital media to conceptualize and reveal the linkages, shifts, and relations that I have been describing. In looking at new or digital media, many have focused on the way in which it reflects current public and private spaces, while others, most notably Lev Manovich have focused on the numerical properties of this new medium.¹⁸ But it is the spatial properties, and uses of the spatial metaphor that I believe are most relevant for this investigation of digital media. Digital space provides an opportunity to layer, combine and negotiate data in various forms – video can be paired with print, imagery, and audio in unique ways to offer opportunities for interaction, and conceptual possibilities for the user/viewer.

To this end, I have chosen to use digital space to create an assemblage of various forms of media to diagram and represent geographic topography, social and capital institutions governing land use, aspects of cultural history, economic and community land and resource developments, areas of conflict therein, and the resulting social conceptions about this geographic space. My focus is to create a prototype of this assemblage that is situated between, and encompasses what can be captured in: measurements of topology, distance, and other numerical GIS data, and sociological, political, or anthropological research. I have gathered video, audio and textually recorded interviews with as many stakeholders as possible. As well, I have gathered other forms of data via the Internet and personal archives belonging to my family and my former self-owned independent production company. All of this data will be incorporated into the assemblage in a

¹⁶ John Noble Wilford, *The Mapmakers*, (New York: Vintage Books, 2001), pp.40-42.
Rehav Rubin, *Image and Reality: Jerusalem in Maps and Views*, (Jerusalem: The Hebrew University Magnes Press, 1999).

¹⁷ Jay Bolter and Richard Grusin, *Remediation: Understanding New Media*, (Cambridge: MIT Press, 1999), pp.185-194.

¹⁸ Lev Manovich, *The Language of New Media*, (Cambridge: MIT Press, 2001).

designed, fabricated environment involving three-dimensional and two-dimensional representations.

Digital space, as I am using it here, is the current digital computerized environment viewed through a monitor attached to a central processing unit, and a navigation device – mouse and/or keyboard. Though in the future, digital space may entail different navigational devices, and immersive environments such as those projected in fictional literature and films. Many refer to digital space as the networked ethereal flow between servers and individual computers. While this is an important component of where digital space is able to take an individual user, my study involves the space that is presented to a designer or programmer, a conceptual space, that is usefully figured in the practicalities and immediate potential of the screen and mouse/keyboard interface available for the user. Digital space is then, for the purposes of this investigation, the black, white or blue screen that can be stretched in various directions and depths for the presentation and representation of differing kinds of information and differing forms of media. It is this space that I believe offers new possibilities for conceptualizing and representing ideals, perspectives, multiple forms, and combinations of data.

While the user perspective is an interesting and integral aspect of the digital experience, for this thesis, I am primarily interested in the designer perspective: how digital space is designed, and implicit notions of construction, architecture, and mapping within this space – both in comparison to other forms of media, and the possibilities engendered by the assemblage I will create within digital space. My analysis of, and active pilot experimentation with this assemblage will encompass the way in which digital space engenders possibilities for representing complex relationships between nature, humanity and the institutions that claim to represent their interests. It is my initial claim that digital space can represent the heterogeneous and rupturing nature of these continuously shifting relationships involving human actors and their environment. The proposed digital assemblage will provide a case study in which to examine and test the validity of this claim.

By assembling multiple viewpoints and fragments of data within a digital framework, my intention is that a deep and rich description of the Tahltan region, its inhabitants, stakeholders, and administrators will emerge. The totality of this assemblage may prove to look something like a cubist painting that on the whole looks fractured, but represents differing perspectives depending on the existing level of knowledge and entry points into the assemblage. This metaphor is also useful in understanding the social conceptions or constructions of space that exist in different sectors of the land use planning exercises. The perceptions of geographic space are carved and sliced up in differing ways, and as a result, are constantly in the process of shifting and flowing in different directions. Referring again to the Deleuze and Guattari quote, and indeed to their concepts embedded in ‘schizoanalysis,’ this assemblage can only reflect a kind of “temporary equilibrium”.

My written analysis in the following chapters provides an accompaniment to or perhaps more appropriately, a “designer’s manual” for the digital assemblage, and an explication of the nature of its temporary equilibrium. For the purposes of linear organization, I have divided the material into three chapters covering issues related to 1) geographical aspects and ideals of the river, 2) human contact and settlement, and 3) administrative actions both currently and historically. Each chapter and section is somewhat similar to a hypertext document in that a thought, discussion, or analysis in the text can become the start or mid-point in a trajectory flowing through many forms of data and land-related issues. Embedded is an explication of the conceptual foundation and analysis of the interface design and an interrogation of the theoretical and practical implications of the assemblage’s use of digital space, form, and content

II. WHAT MAKES A RIVER

“Stikine River Country is raw wilderness. Its headwaters region, the wildlife-rich Spatsizi Plateau, is North America’s equivalent to Africa’s Serengeti Plain. In its mid-region, the mighty river continues to deepen the spectacular 100-kilometre-long Grand Canyon, which has only once permitted the passage of humans... Stikine Country is too precious to squander. It is a place for wildlife to flourish – and a place for you to make a stand.”

- Paul George, Founding Director of Western Canada Wilderness Committee in an introduction to *Stikine: The Great River*¹⁹

Located in British Columbia and Southeast Alaska, the Stikine River Watershed is what Alaska Geographic called the “last unmanipulated wilderness” in North America.²⁰ While this is a contestable, laden descriptor, as is the quote beginning this chapter, it does mark one starting point in attempts to understand the forces at work in this landscape. The vastness of the area coupled with a seeming lack of present human intervention in the form of resource extraction and development makes the Stikine area vulnerable to decisions and descriptions based on these factors. In this chapter, I will highlight several sections where the assemblage opens up geographical implications of the watershed through an examination of linkages, modes of representation, and the ongoing integration of forms and types of geographic and visual data in the assemblage. Related to this explication is a discussion of the interface of the assemblage and how design decisions were made about structuring the framework for the assemblage and ultimately, its modes of inquiry. Flowing from this examination of geography and structure is a deeper analysis of the differences in ideals about wilderness, environmental protection, and what the

¹⁹ Gary Fiegehen, introduction by Hugh Brody, *Stikine: The Great River*, (Vancouver and Toronto: Douglas and McIntyre, 1991), p. 13.

²⁰ “The Stikine River” *Alaska Geographic*, Vol. 6, No. 4, 1979, p.7.

Stikine is or should be in reference to history, politics, race, and the ongoing pressures for development.

DIAGRAMMING THE DIAGRAMMED: GEOGRAPHICAL IMPLICATIONS

The Stikine River begins as a small stream flowing from a nearly spent glacier on a high plateau near Mount Umbach in the Spatsizi Plateau Wilderness Park in British Columbia. Traversing approximately 400 miles until it reaches the Pacific Ocean in Southeast Alaska, the Stikine moves past glaciers, volcanoes, mountain ranges, boreal forests shaping watershed lands, tributaries and drainages. Major tributaries such as the Spatsizi, Klappan, Tuya, Tahltan, and Iskut rivers join the Stikine before it reaches the open ocean.²¹ In total, the watershed covers over 31,000 square miles and has a human population of nearly 1,000 people whose residences are mostly contained within three towns and adjacent Indian reserves: Dease Lake, Iskut and Telegraph Creek.²² Of these three, Telegraph Creek is the only town located on the banks of the Stikine River – the other three are located inland in the watershed.²³ Because of the lack of present human settlement and the distance required to get to urban comforts, the diversity, range, and ‘wildness’ of the landscape have created stunning visual images, impressive biodiversity data, and adventurous narratives both by historical and recent travelers to the area.

One of the most documented and geologically spectacular areas of the watershed is the “Grand Canyon of the Stikine,” a lava encrusted sixty-mile midsection of the river where cliff walls reach heights of 1000 feet, and vary in width. The Coast Mountain Range further down the Stikine protects this anomalous arid section that has yielded fossil finds and vegetation not found elsewhere in the watershed. A *Nature Canada* article on Stikine mountain goats describes it this way:

²¹ Cassiar Iskut-Stikine LRMP Newsletter, May 1997, Issue 3, 13 May 2002, <<http://www.luco.gov.bc.ca/lrmp/cassiar/newsletter/news3.htm>>. During the first meeting for the LRMP process, involved participants changed the name “...to acknowledge the Iskut River as the largest tributary of the Stikine.” More LRMP details are discussed in chapter three.

²² “A Profile of the Canadian Population: Where We Live,” Census 2001, 12 March 2002, <<http://www12.statcan.ca/english/census01/release/index.cfm>>. This figure is according to Canada’s 2001 census. Previous population estimates in the 1996 census were 1,300. The three towns are separately administered from the reserves, which come under the Canadian Government’s Indian Act. However, the reserve population in Iskut and Telegraph Creek far outnumber that of off-reserve population. There are homesteads, ranches, and smaller reserves that lie outside of each of these towns.

²³ “The Stikine River,” p. 39-41. This is difficult to ascertain, but Telegraph Creek seems to be named for the first failed telegraph construction attempt by Western Union in 1866, following the first gold rush on the Stikine in 1861. The Yukon Telegraph was eventually built in 1901 and included a distribution center in Telegraph Creek.

“The canyon region of the Stikine is a tectonic hodgepodge of micro plates slammed against the moving continent from all over the Pacific. (Geologists speculate that it is approximately 50 million years old.) Raw and ragged compared to the polished walls of its namesake on the Colorado River, Canada’s Grand Canyon is singularly unimpressive from the air – a mere wrinkle in the earth’s rolling abdomen.”²⁴

It may seem unimpressive from far above, but pilots, tourists and journalists have documented trips of flying through the canyon, and the assemblage will contain clips of documentary footage from one such journey in the early 1980s.²⁵ The winds and the organic nature of the canyon make for an unpredictable and dangerous flying experience when a pilot ventures inside the canyon’s walls.²⁶ These same barely navigable canyon walls host large populations of mountain goats regularly accustomed to free falls, steep vertical climbs, and sheer rock faces.²⁷ Their rutting grounds and habitat were threatened in the early 1980s by a proposal for a major hydroelectric project (called “Site Z”) that united some local and international environmentalists, and members of the Tahltan Nation in active protest – an event I will return to later in this chapter. The project was eventually shelved due to a combination of lowered demands for electricity and protests.²⁸ And it looks to be permanently retired as a viable concept with the creation of a park along this area of the Stikine. The creation of park area is part of the LRMP that was completed in 2000. I will describe this process and its results in more detail in chapter three. As well, another factor is the new inventions of green technology for producing electricity that have limited the need for major hydroelectric projects.²⁹

²⁴ Monty Bassett, “Life on the vertical: the goats of Canada’s Grand Canyon are a downwardly mobile group,” *Nature Canada*, v. 25(1), Winter 1996, p. 22-28.

²⁵ Peter Long, *The Stikine*, CFTK-TV, 1985. *The Stikine* is a television documentary paid for by Friends of the Stikine to show how the proposed Site Z hydroelectric project might impact the Stikine and watershed inhabitants.

²⁶ Alex Strachan, “Beauty made flying dangerous in Over British Columbia shoot,” *Vancouver Sun*, October 19, 1996. A film crew for “Over British Columbia” noted in a newspaper interview that they barely escaped their attempts to film the canyon in “one piece”. The walls of the canyon narrow and widen unpredictably making it difficult to fly straight though the entire canyon.

²⁷ Bassett’s “Life on the vertical” contains several descriptions of goats free falling to escape predators (including the author who noted that he was deemed a predator as well) and always miraculously landing on their feet.

²⁸ Personal Interview with Peter Northcott, Senior Planning Engineer, BC Hydro, February, 2002. Personal Interview with Gil Arnold, Executive Director of Friends of the Stikine, March 2002. The official BC Hydro response, as told to me in an interview with Peter Northcott, is that the project was shelved due to lowered load growth in North American electricity demands. However, Gil Arnold looks to a series of legal challenges and protests as what ultimately protected the River from this project.

²⁹ Northcott Interview and Personal Interview with Jim Ko, Supply Investment Engineer

Color, size, and flow of the river vary based on the area where the Stikine is viewed from -- images at the mouth of the river show 'many fingered' shallow waters influenced by the tide, while glacier fed areas show a swift, wide and muddy river.³⁰ There is a saying I heard many years ago about the Stikine: "The river takes, but it never gives back." Residents of Telegraph Creek, the only village area along the Grand Canyon of the Stikine can usually recollect at least one story of someone who drowned or almost drowned, or a boat that capsized because the pilot was unfamiliar with a particular current or narrow section of the river. The reputation of the Stikine has also caught the attention of adventure enthusiast, and is listed as an expert river for kayakers. A recent *Men's Journal* Article called it one of the three rivers that make up "the Triple Crown" -- paddling through these rivers has only been achieved in recent memory, by a handful of kayakers. The article describes one warning sign: "Grand Canyon of the Stikine. Extremely Dangerous Rapids Downstream. Unnavigable by all Craft." Rapids that have been named go by monikers like 'Wicked Wanda', 'Pass/Fail', and 'the hole that ate Chicago'.³¹ I cannot find, nor have I heard evidence of whether Tlingit boats coming from their residences at the mouth of the river ventured as far up the rapids. It is likely they may have since they would have to travel through this area to reach the Tahltan gathering place near the confluence of the Tahltan and the Stikine, but their fishing and drying grounds are located downriver so its also plausible they may have chosen to portage before the rapids or travel on foot to the gathering place.³²

What becomes apparent in the paragraphs above is that each aspect of the river is a rhizomatic point at which one could branch off into several areas of discussion which lead to several more areas of discussion which may or may not circle back to the original point of discussion: the visual and geographic properties of the river. By choosing a geographic space to examine, the assemblage and this analysis are able to cut across boundaries of time, data, and usual categorization of data into topics like history, sports,

BC Hydro, February 2002. Both Ko and Northcott explained the new role of green technology in resource planning for BC Hydro and cited it as one of the reasons Site Z is no longer part of the plan for hydroelectricity needs in BC.

³⁰ The cover of Gary Fiegehen's photography book *Stikine: The Great River* shows the flats at the mouth of the Stikine. It looks s like a giant hand with many fingers -- hence this common description found in several newspaper and journal articles.

³¹ Reggie Crist, "In Search of the Triple Crown: A Men's Journal expedition to paddle -- and survive -- the three fiercest rivers in North America," *Men's Journal*, 21 April 2002, <<http://mensjournal.com/adventureTeam/tripleCrown/intro.html>>. *Men's Journal* sent three adventure kayakers down the most dangerous parts of the Stikine River, Sustina River, and Alsek River. Each kayaker had at least 12 years of experience, and the articles notes those others who tried the Stikine River nearly lost their lives. Kayaker Rob Lesser was the first to traverse all three of these rivers for the "Triple Crown" about 15 years ago.

³² For more explication of the role of the Tlingit in this area of the Stikine, see chapter two.

conservation, and wildlife habitat.³³ No piece of data related to this geographic space is truly autonomous -- each piece of data connects with another to form a map of its own using the geography as a plane of immanence. Deleuze and Guattari distinguish conceptually between a map and a tracing:

“What distinguishes the map from the tracing is that it is entirely oriented toward an experimentation in contact with the real. The map does not reproduce an unconscious closed in upon itself; it constructs the unconscious... That map is open and connectable in all of its dimensions; it is detachable, reversible, susceptible to constant modification. It can be torn, reversed, adapted to any kind of mounting, reworked by any individual, group, or social formation... A map has multiple entryways, as opposed to the tracing, which always comes back ‘to the same.’”³⁴

Creating this kind of framework to its full description (i.e. torn, reversed, reworkable) is not entirely possible in digital space, but there are certain allowances that make it more possible to create a construct that allows for experimentation. Ultimately, it may revert back to a neutralized, stable tracing for the user, but the process of creating the assemblage adheres to the principles outlined above -- retaining a semblance of this sense of experimentation for the user is one of the chief design challenges for the assemblage.³⁵

Standardized mapping, and by this I mean adherence to the cartographic practices that produce geographically correct two dimensional commercial maps, has been the natural interface for organizing the wilderness.³⁶ But as noted in the introduction, a map

³³ William Cronon, "The Portage: A Place in Time", MIT Sawyer Series, 5 April 2002. Cronon's lecture at MIT on his forthcoming book helped me to articulate the use of space as a method for examining events and relations across time.

³⁴ Deleuze and Guattari, p. 12.

³⁵ Professor Michael M.J. Fischer suggested that I work with current open source code and create a system that would allow for users to add their own data and continue the mapping process. In so doing, this would perhaps be more true to the concept of a rhizome as laid out by Deleuze and Guattari. However, this method of construction would require more time than is available to finish this thesis project. My hope is that the project will continue to evolve past this thesis to include an open concept as suggested. I outline this in the conclusion to this thesis.

³⁶ William J. Mitchell, *City of Bits: Space, Place, and the Infobahn*. (Cambridge: MIT Press, 1995), pp.48-49. I came across the idea of an organizing principle in a landscape reading *City of Bits*. In this text, Author William J. Mitchell looks to buildings as symbols of organization within the urban landscape -- symbols that are undergoing massive change as a result of changes in telecommunications and the ripple effect of how space is understood in an urban setting. So then what is the symbol of organization in a wilderness setting? Maps are practically the only way non-residents (a category into which the majority of people fall) are able to apprehend these areas. Maps form the basis of the way an area is administered; yet they are not part of the landscape per se. Perhaps this is

can also represent a lens through which to view the landscape, and a mode of looking at wilderness as a kind of blank slate. Though they are one of the oldest forms of representation, maps are a means of communication that require a critical reading.³⁷ In *The Nature of Maps*, Authors Arthur M. Robinson and Barbara B. Petchenik work towards a theory of mapping noting:

“Mapping is based on systems of assumptions, on logic, on human needs, and on human cognitive characteristics, very little of which has been recognized or discussed in cartography.”³⁸

With this in mind, Robinson and Petchenik widen the definition of mapping to an “apprehension of a milieu.” This takes into account the fact that mapmakers make various decisions about what to include, what to leave out, and create one version of a representation of a setting or an environment. Further to this point,

“The models of cartography which have been devised are essentially activity-oriented descriptions of the field rather than attempts to discover its basic character or probings of its theoretical foundations.”³⁹

Because I am interested in both the character and theoretical foundations of a landscape and its representations, I have used the term, “mapping” in very limited ways preferring instead to substitute the word “diagramming.”⁴⁰ This word more closely defines Deleuze and Guattari’s ideal of mapping. In Deleuze’s analysis of Foucault’s diagramming methods, the diagram can be seen as fluid, evolutionary, and “intersocial... constituting hundreds of points of emergence or creativity, unexpected conjunctions or improbable continuums.”⁴¹ It is this Deleuzian/Foucauldian sense of diagramming that I want to access in designing the interface for the assemblage.

an odd pairing, but it is one of the few tools that allows humanity to feel as if a wilderness landscape is ‘organized.’

³⁷ J.B. Harley, “The Map and the Development of the History of Cartography,” in *The History of Cartography I*, eds. J.B. Harley and D. Woodward, (Chicago: University of Chicago Press, 1987-1994). And Hugh Brody, *Maps and Dreams* (New York: Pantheon Books, 1982). While Harley’s seminal text on the history of cartography correctly asserts the importance of maps in world history, Brody looks at maps as a cultural artifact dictated to the Beaver, Cree and Slavey First Nations located in northeastern BC. Their understanding of the land had more to do with use and experience, such as paths and trails for hunting and gathering food, than with arbitrary boundaries set out on maps.

³⁸ Robinson and Petchenik, p. vii-xi.

³⁹ Ibid, p. 108.

⁴⁰ Many thanks to Joe Dumit for helping me articulate this as diagramming rather than mapping.

⁴¹ Gilles Deleuze, *Foucault*, trans. Sean Hand (Minneapolis: University of Minnesota Press, 1988), p. 35.

The data I am using to diagram linkages and connections comes from a variety of sources: planning reports, historical maps, historical accounts, current maps and GIS data, interviews with local stakeholders, artists, and elders. Of particular interest in this chapter are the reports that combine numerical evaluations of biodiversity elements in the region with limited descriptors of land use or cultural value and meaning.⁴² These are attempts at assemblage put together for planning exercises, but they lack some of the rich depth and open-ended evolutionary nature of a rhizomatic diagram. In addition, each piece of this data contains a perspective, and as debates have raged about proposed developments, this data has become contested and criticized. In fact, it is difficult to find anything resembling an “objective” fact unless it can be found in several corroborating reports. Images that are published or archived have usually been taken for reasons of cultural or ecological preservation and record. Maps also need the benefit of additional corroborating maps to compile information regarding mine sites, hunting areas, cultural areas, populated areas, etc.⁴³ In building the assemblage, it turns out to be a difficult technical issue to bring data from reports, and differing scaled and themed maps to reintegrate them into a new framework. I have tried to mitigate this through various types of interfaces – a point I will explicate in the next section.

Digital space is a space of abstraction that takes on a shape based on a designer’s construction, and a user’s conception. The user takes a designed space and “makes do” using an individual mode of inquiry and sense of spatial opportunities.⁴⁴ The designer, on the other hand, has a much more directive effect on the abstraction of digital space shaping and molding it into opportunities for the user.⁴⁵ From either vantage point, digital space can reflect a geographic space in perfect replica via topographical modeling information available in Geographical Information System (GIS) databases, or it can reflect the culturally and historically contextualized abstract thoughts about how land

⁴² “Technical Background Information Summary for Stikine Country Protected Areas - Draft” (British Columbia, Ministry of Environment Land and Parks, BC Parks Division, Skeena District 31 July 2000). This is an example of this kind of document used for the Cassiar Iskut-Stikine LRMP.

⁴³ Wilford describes in depth the opportunities now available for layering many types of GIS data thereby avoiding this problem of one kind of map meaning one kind of lens or type of information. However, this information is not as available in Canada as it is in the United States. (pp.409-425)

⁴⁴ Michel de Certeau, *The Practice of Everyday Life*, trans. Steve Rendall (Berkeley and Los Angeles: University of California Press, 1984), pp. 29-42. This idea of “making do” is a conscious reference to de Certeau’s notion of the way in which individuals develop strategies and tactics for dealing with constraining order in everyday life.

⁴⁵ In researching this thesis, I asked a visiting game designer how he approached digital space at the onset of game design and conception. He replied that it was completely overwhelming to stare at the blank screen, and if he was not careful, could be swept away by its enormity and depth of possibilities.

relates to art and creative expression.⁴⁶ I have chosen to experiment with digital space particularly because it has the capability to combine disparate forms and kinds of data. But how can I plot this data so as to structure inquiry within a framework that allows for maximum linkages between heterogeneous forms and content? A geographic-based framework would allow for a sense of place, but it also locks data into a set structure that may not have room for something like ‘culturally and historically contextualized abstract thoughts about how land relates to art and creative expression.’ Would a geographical mapping exercise work if it contained extra layers? If not, then what lines would work? I have already laid out my ideas regarding a rhizomatic structure for revealing and making linkages between data, but what does that mean in the context of digital space and interface design?

STRUCTURING INQUIRY

I originally conceived of the digital assemblage as a new conceptual tool that would encompass and move between data related to distance, height, and topology.⁴⁷ I was also looking for a way to combine what is represented through this kind of measured data in the form of GIS and other mapping data sets, and what could be represented through a documentary experience in print, radio, or video – much of the above written narrative does exactly this. But I also wanted to bring together content that is generally dispersed in different subject and administrative areas. For example, land animals and river animals are administrated by separate governments and separate departments: Canada’s Department of Fisheries and Oceans administers the Stikine River, while BC’s Department of Land, Air, and Water Protection administers animal conservation numbers and park sanctuaries. One of the preliminary LRMP-related reports brought a summary of this information together under the term: “technical report,” but this is perhaps the first instance of doing so. And, this separation between land and river animals is just one example. There are twelve government departments with overlapping jurisdictions and different perspectives operating in the Stikine Region. I will return to an analysis of this

⁴⁶ “Land Process Distributed Active Archive Center”, 29 April 2002, <<http://edcdaac.usgs.gov/gtopo30/gtopo30.html>>. For the assemblage, I have created a three-dimensional graphical elevation display using software that can translate GIS measurements gathered by NASA, and called GTOPO30. “[GTOPO30](#) is a global digital elevation model (DEM) with a horizontal grid spacing of 30 arc seconds (approximately 1 kilometer)... GTOPO30, completed in late 1996, was developed over a three year period through a collaborative effort led by staff at the [U.S. Geological Survey](#)'s EROS Data Center ([EDC](#)).”

⁴⁷ The basis for this project stems from my own interest in what I came to call digital space, as well as, networked cyberspace and designed constructions for the computerized environment. Following discussions with Joe Dumit about these concepts, I entered into some discussions with Mike Fischer about the Tahltan area. Mike’s suggestion was to build it: to use my media production skills to explicate the forces at work in this landscape. Those are the seeds for what is now the digital assemblage and this thesis.

in chapter three, but I raise it here to inform how my thinking developed on how to diagram, connect, create linkages where none previously existed between data.

Essentially, I was looking for a way to reintegrate data that had been separated and categorized. This, combined with the conceptual structure of a rhizome that is neither hierarchical, nor homogenous, sets up the goal of creating a fluid multi-dimensional whole with varying levels of complexity, depth, and layers of inquiry. A rhizomatic structure allows for a new way of apportioning, weighting, and representing boundaries, flows, changes, and movements between heterogeneous elements. But as hypertext writers before me have found, a rhizomatic structure can also be confusing for the user because it lacks an overarching narrative, or hierarchy.⁴⁸ Choosing this structure seems more organic and perhaps closer to a geographic way of viewing a landscape, which is at any given time, merely a “temporary equilibrium” if we are to follow Deleuze and Guattari’s rhizome thinking through to nature. Using the watershed as a metaphor for envisioning the digital assemblage, one can make a comparison with the water, ecosystem, and biological diversity that are interdependent and reflective of one another, in the same way that data, perspectives, history, and culture are linked parts of a rhizomatic whole. But structuring a whole from parts is not an easy task as eloquently stated by Artist Paul Klee:

“It is not easy to arrive at conceptions of a whole which is constructed from parts belonging to different dimensions. And not only nature, but also art, her transformed image, is such a whole.”⁴⁹

Conceptually, this idea of the whole follows in the footsteps of artists and philosophers like Klee and others, but materializing it in digital space is quite another task and requires inserting the ideal into hardware and software debates, what applications to use, interface design and theory, and usability issues.⁵⁰

⁴⁸ Janet Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (Cambridge: MIT Press, 1997), pp.132-134. Murray highlights this issue in her section on the “rapture of the rhizome” noting how the possibilities of creating a rhizomatic structure can overshadow usability issues.

⁴⁹ Paul Klee, *On Modern Art*, trans. Paul Findlay (London: Faber and Faber, 1948) from *Über die moderne Kunst* (Bern, 1945), p. 15. Also quoted in Edward Tufte, *Envisioning Information* (Cheshire, Connecticut: Graphics Press, 1990), p. 15.

⁵⁰ Jakob Nielsen, “Top Ten Guidelines for Homepage Usability,” 13 May 2002, <<http://www.useit.com/alertbox/20020512.html>>. Friedrich Kittler, “There is No Software,” *Electronic Culture: Technology and Visual Representation*, ed. Timothy Druckrey, (New York: Aperture, 1996). Bill Viola, *Reasons for Knocking at an Empty House: Writings 1973-1994*. (London: Thames and Hudson, Anthony d’Offay Gallery, 1995). Peter Weibel, “The World as Interface: Toward the Construction of Context-Controlled Event-Worlds.” From *Electronic Culture: Technology and Visual Representation*, ed. Timothy Druckrey. (New York: Aperture, 1996). Andreas Broeckmann. “Are You Online? Presence and Participation in Network Art (1998),” *Ars*

Utilizing the spatial and encyclopedic aspects of the digital environment, I set about designing a way for geography to be an underlying theme, but not the overarching navigational mechanism.⁵¹ Ultimately, I wanted to create a series of abstract, yet grounded intersections about geographical implications, ideals, and related actions in a variety of forms. To quote Edward R. Tufte: “To envision information... is to work at the intersection of image, word, number, art”⁵² This envisioning of information in a digital space is ultimately a balance between the logic of geography, and that which is created and of a different spatial logic in the digital environment. William J. Mitchell in “City of Bits” describes a ride through the City of Tokyo with an on-board GPS mapping technology and states: “The real city that surrounds us and the video city that guides us are held in perfect coincidence.”⁵³ In the assemblage, while I would like to create a sense of the Stikine Watershed that is more than coincidental, the actuality is that digital space is about organizing data into a cohesive working whole, an object that is both separate and related to what it represents.

To resolve this tension between a representation of reality and digital spatial logic, I have opted for a combination of three interfaces: 1) geo: three-dimensional graphics based on GIS data, 2) icon: a social diagram of relations between data through lines and icons, and 3) window: a fluid interface of data that allows for two windows of simultaneous playback and immediate linkages to additional playback with accompanying sets of linkages. The first represents the need for an immersive sense of place. The second represents a visualized sense of the rhizome and its diverse data sets and linkages. The third allows for an experience with the data itself, in concert with relational data – a sense of being inside of or part of the rhizome. The first two are representations that involve a geographical map, and a social diagram, but it is the third which is perhaps most difficult to apprehend as a whole for its level of detail and inexplicit structure. It also represents the greatest opportunity for user experimentation and experience in terms of combining multiple forms of data and charting their own path through primarily visual features.⁵⁴ This means that users can create their own meaning

Electronica: Facing the Future, ed. Timothy Druckrey with Ars Electronica. (Cambridge: MIT Press, 1999).

⁵¹ Murray, p.71-90. Murray outlines four essential properties of the digital environment: procedural, participatory, spatial, and encyclopedic. The framework is guided by the procedural and participatory properties.

⁵² Tufte, Introduction.

⁵³ Mitchell, p.41

⁵⁴ Tufte, p. 31. Tufte analyses the possibilities for user interaction this way: “Visual displays of information encourage a diversity of individual viewer styles and rates of editing, personalizing, reasoning, and understanding. Unlike speech, visual displays are simultaneously a wideband and a perceiver-controlled channel.”

based on what data is available – they can browse beyond a narrative, and have the opportunity to make a finite, but much larger set of connections.⁵⁵

The archive of data that can be accessed through these varied interfaces is dependent on what data has been preserved and recorded historically. This project provides a limited intervention by creating new combinations of data, and by creating new data sets for the archive. For example in chapter three, I combine the official planning documents for the LRMP with video interviews that provide insight into the process, not just the results. Another example from chapter two is the combination of diaries of non-Tahltan residents and early travelers in the Stikine region found at the BC Archives with elders' stories from *Tahltan Native Studies* (a collection recorded and printed in limited edition for the Tahltan community by the Tahltan Band), and interviews with Tahltan-Tlingit Artist Dempsey Bob. This archive, and the varied interfaces provide the material basis for the concept of diagramming earlier defined in this chapter.⁵⁶

The diagrammatic choices I have made about what and where to make linkages with and from reveal my own priorities in terms of what I think is important for the user to conceptualize and/or visualize, and in doing so, lays out a trail of details, voices, or relations that could lead to other paths of inquiry and research. Arousing and satiating curiosity as a process of learning becomes the goal, rather than adhering to a message, set of priorities, or edited backgrounder. For example, what would be the connection between a mountain goat, expert kayaker, electricity needs, fisher, fish, Tahltan culture, or the tectonic plates of the earth's crust? This thread may lead to varied overlapping discussions on ecosystems, biodiversity, adventure travel, trophy hunting, subsistence hunting, Tahltan beliefs about animals and creation, geological formations and fossil findings, political insurgency by environmentalists, hydro-electric needs in North America, resource extraction, or perspectives on the value, use, preservation, definition or aesthetics of wilderness. The assemblage creates a space in which to visualize and

⁵⁵ Manovich, pp. 55-61 and de Certeau. While many involved in hypertext are likely to point to co-authorship as one of the key benefits of digital media, Manovich outlines his argument for reasons why new media is an externalization of mental processes rather than the much-heralded notion of egalitarian interactivity. This explanation however does not take into account new avenues of variability provided in a digital environment, nor does it address any of the theory like that advocated by de Certeau of varied readings, strategies, and tactics adopted by users/readers/consumers to deal with structures and orders of control.

⁵⁶ Deleuze, *Foucault*, p. 34. Deleuze refines Foucault's diagrammatic concept in this way: "The diagram is no longer an auditory or visual archive but a map, a cartography that is coextensive with the whole social field. It is an abstract machine. It is defined by its informal functions and matter and in terms of form makes no distinction between content and expression, a discursive formation and a non-discursive formation. It is a machine that is almost blind and mute, even though it makes others see and speak."

identify the voices representing these kinds of links through image-based and textual forms of media.

Yet, digital representation also presents a set of limitations and opportunities both as a result of the capacities of media forms it assembles, and as a result of the programming languages on which display is predicated. Marcus Novak in his 1991 essay on *Liquid Architectures in Cyberspace* stated:

“Digital technology has brought a dissociation between data, information, form, and appearance. Form is now governed by representation, data is a binary stream, and information is pattern perceived in the data after the data has been seen through the expectations of a representation scheme or code. A stream of bits, initially formless, is given form by a representation scheme, and information emerges through the interaction of data with the representation; different representations allow different correlations to become apparent within the same body of data. Appearance is a late aftereffect, simply a consequence of many sunken layers of patterns acting upon patterns, some patterns acting as data, some as codes.”⁵⁷

This idea of information being a result of combinations of variants is not new. Other graphical theory has reached this conclusion without situating it in a digital environment.⁵⁸ Where I think a digital environment provides a unique opportunity in information is in its ability to move fluidly between several representations through a process of user-driven interaction. Novak explicates two different kinds of information through pattern or perceived structure: interrepresentational and intrarepresentational. The former being one kind of information or pattern based on the representation itself, and the latter being that of comparison between representations. In the assemblage, I am seeking to use both of these modes of representing information in an attempt to mitigate the limitations of data, and to prevent data from being the driving force behind the structure of inquiry. It also takes advantage of inherent montage and juxtaposition qualities in the construction of the assemblage. Where I think this is particularly useful in terms of geographical implications is in the overlap between ideals surrounding the environment and landscape.

⁵⁷ Marcus Novak, “Liquid Architectures in Cyberspace,” in *Multimedia: From Wagner to Virtual Reality*, eds. Randall Packer and Ken Jordan (New York and London: Norton and Co., 2001), p. 258.

⁵⁸ Jacques Bertin, *Semiology of Graphics: Diagrams Networks Maps*, trans. William J. Berg, (Madison: University of Wisconsin Press, 1983), p. 5. “In graphic representation the translatable content of a thought will be called the INFORMATION. It is constituted essentially by one or several PERTIENT CORRESPONDENCES between a finite set of variational concepts and an invariant.”

CONSERVATION CONVERSATIONS: IMAGERY AND IDEALS

Despite the percentage of recent mainstream articles about the Stikine that deal with adventure, travel and sport, these tales pale in comparison to the life, mode of transportation, and sustenance the river has provided and continues to provide for the nearly 1000 people and over 100 species of animals who live in its watershed. Stikine tributaries hold salmon spawning grounds for many varieties including coho, sockeye, chinook, pink, chum, and king salmon. Large and growing herds of Stone's sheep, deer and woodland caribou, as well as grizzly bear, black bear, wolf packs, moose and mountain goats roam throughout the watershed, and remain protected in Spatsizi Plateau Wilderness Park (Spatsizi means "land of the red goat" in Tahltan language), Mount Edziza Park, and new parkland proposed for the 350,000 hectares that lies in between these older parks.⁵⁹ As well, near the mouth of the river: Great Glacier Park, Choquette Hot Springs Park, and the entire Alaskan portion of the river is protected as part of the Tongass National Forest and named the Stikine – Le Conte Wilderness area. Various articles describe the Stikine River's watershed as "a real wilderness experience" without mining or logging containing the "highest densities of wildlife populations in British Columbia."⁶⁰ In reviewing a 1992 photography book by Gary Fiegehen on the Stikine, a writer effused: "...wilderness as it exists beyond the reach of man. For this is the frontier. An earthscape so primordial it becomes otherworldly."⁶¹

Placing oneself as a human observer or resident in the Stikine watershed revolves around culture, belief, and task, and goes to the centrality of how a landscape is viewed. In the previous quote, the landscape is viewed as an "other" and so distant as to be unreachable. Indeed, Fiegehen's book could be framed as such. It is a visual feast of incredible landscape images, and the only one of its kind since Alaska Geographic

⁵⁹ "Cassiar Regional Map", Recreation, BC Parks, Ministry of Water, Land and Air Protection, 13 May 20002, <http://wlapwww.gov.bc.ca/bcparks/explore/regional_maps/cassiar.htm>. "Forest Facts", Tongass National Forest, USDA Forest Service, 13 May 2002, <[http://www.fs.fed.us/r10/tongass/forest_facts/resources/wilderness/sawld.html#Stikine - Leconte Wilderness](http://www.fs.fed.us/r10/tongass/forest_facts/resources/wilderness/sawld.html#Stikine-LeconteWilderness)>. Spatsizi Plateau Wilderness Park was created in 1975 and includes the Gladys Lake Ecological Reserve. It covers 3600 square miles and several vegetation zones. Mt Edziza Provincial Park covers 230,000 hectares. Stikine River Provincial Park covers 217,000 hectares. There are numerous other smaller parks like Choquette (48 acres) and Great Glacier (9,300 hectares) throughout the Watershed. The Tongass National Forest in Alaska divides its area into wilderness areas. The Stikine-LeConte Wilderness area covers 48,841 acres.

⁶⁰ Larry Pynn, "Spatsizi whitewater wonder", *The Vancouver Sun*, 3 August 1991, p. E1. Quote from an unnamed park warden for the Spatsizi Plateau Wilderness Park referenced in this article.

⁶¹ Richard Wagamese, "Wilderness Silence is Golden," *Calgary Herald*, 25 January 1992, p. F6. Wagamese's article is a book review of *Stikine: the Great River* by Gary Fiegehen.

published a first book in 1979.⁶² In his introduction, Fieghen says that with the help of a Tahltan guide, "... I began to experience how meaning, and a sense of place are determined by the cultural lens through which we look at the world." But he also acknowledges that his attraction to the watershed is because of his perception of it as "having absolute integrity, defined in the dictionary as entire correspondence with an original condition, a condition that is unimpaired or unmarred." This tension between viewing a wilderness landscape as untouched or unmanipulated and placing the work of humanity within it can be seen in Fieghen's collection of photographs, which does include a few images of Tahltans, but it also reflects the greater tension between environmental activists, conservationists, and Native American people.

Shepard Krech in his recent book *The Ecological Indian* looks at the complex and very different scenarios that have played out across North America regarding environmental and development issues paying particular attention to the ways in which Native Americans have been portrayed as having a special relationship with the land as good stewards until European contact and settlement began the process of destroying a pristine environment with ensuing industrial development.⁶³ While there can be no debate that industrial development has had more effect than any of the improvement actions taken by Native Americans pre-contact, the reality is much more complicated and casts Native Americans on all sides of development debates.⁶⁴

This complex version reflects more closely the Tahltan experience in land development debates. In a thesis completed in 1985 by a graduate student at the University of British Columbia on Tahltans and environmentalists' successful efforts to thwart the proposed hydroelectric project Site Z on the Stikine, it was concluded that

⁶² Fiegehen's book lacks the historical and categorical explications of the Alaska Geographic's "The Stikine." Fiegehen's book is composed primarily of imagery taken in all seasons and in many areas of the watershed though it also contains an introduction by Hugh Brody, and several other short conservationist's introductions.

⁶³ Shepard Krech III, *The Ecological Indian: Myth and History* (New York: W.W. Norton and Company, 1999).

⁶⁴ Ibid, pp. 228-229, and Winona LaDuke, *All Our Relations: Native Struggles for Land and Life* (Cambridge: Southe End Press, 1999), p. 1. LaDuke's above noted text chronicles several case studies that demonstrate and examine the relations of Native American tribes with the environment, and in some cases, their parallel histories. In the introduction, she writes: "There is a direct relationship between the loss of cultural diversity and the loss of biodiversity. Wherever Indigenous peoples still remain, there is also a corresponding enclave of biodiversity." Krech is critical of environmental writers like LaDuke for what he sees as their characterizations of the 'indigenous way' as the 'environmental way.' However, LaDuke's text reveals much of the underlying complexity Krech is trying to unveil as well. Her approach is centered on who has the right to make changes and development to the land and resolving problems and issues associated with post-colonialism, economic justice, and inequality. Her main idea is start a dialogue about these issues to understand and address the complexity.

Tahltans and environmentalists were at odds over who should control the River and whether a park designation should apply. Individual Tahltans and environmentalists worked together, but no official relationship or long-term cooperation between organizations and tribal governments ensued. Indeed, a park may seem like the natural end to conservation efforts, but it is not necessarily the best result for Tahltans because this designation could prevent residence and traditional food gathering activities – a fact discovered with the creation of the Spatsizi Plateau Wilderness Park in 1975. The negotiation and clash between use values and cultural practices associated with the land, and the environmentalist’s desire to keep the river and the watershed pristine and wild is apparent in this debate.

In the past three years, the LRMP process has brought together members of the Tahltan Nation, as well as, local residents, government representatives, other stakeholders including resource companies and environmental groups. Early on, the local environmental group, Friends of the Stikine were asked to leave the negotiations by Tahltan representatives, but later worked out a solution to return. Executive Director Gil Arnold described this situation to me in an interview taped earlier this year:

“We decided it would be worthwhile to enter the negotiations. And we engaged, and then made a terrible mistake in a newsletter. Some glib comments about local people, and the person who made the comments and our organization were ejected from the negotiations. And after about 6 or 8 months of not having our representative at the table, I was asked to go north and see if I could get the organization back into the negotiations...We worked all night -- we worked through a couple of nights with regional conservationists and Tahltan representatives, and we decided it would most appropriate to have us back rather than a larger more doctrinaire conservation organization. And we reentered the negotiations and we’re very pleased with the outcome.”⁶⁵

The ‘glib comment’ referred to in the newsletter was a statement to the effect that Tahltans were the “cowboys of the Stikine,” a reference to western frontier fantasies, and reckless behavior.

Tahltans have not spoken publicly about this incident, but according to Arnold, this matter is now behind all of them. And in fact their collaboration seems to have been successful on environmental protection issues. The LRMP process ended with an agreement that saw 25.4% of the Stikine Watershed become “Protected Areas” including the area along the Stikine planned for the Site Z dam.⁶⁶ Despite this obvious desire for a protected landscape and a mended relationship with environmental groups like Friends of

⁶⁵ Personal Interview with Gil Arnold, Executive Director of Friends of the Stikine, March 2002.

⁶⁶ Craig McInnes, “Plan to create Stikine River park sent along for political approval,” *Vancouver Sun*, June 8, 2000, p. B6.

the Stikine, Tahltan Chief Yvonne Tashoots recently stated to a roomful of resource industry representatives: “If you want to work with First Nations, you have to provide jobs and meet our goals.”⁶⁷ This pragmatic approach has endeared the Tahltans to both resource industry executives and environmental groups. It seems oppositional to the writings of Winona LaDuke, the late Chief Dan George and other native environmentalists who take a hard line in protecting the environment from development as part of a set of articulated cultural and spiritual beliefs.⁶⁸ But both approaches – that of the Tahltans and those who emulate LaDuke’s views – can be framed as tactics and strategies based on practical needs and community survival.

The employment aspect in the remote Stikine area, no doubt, makes Tashoots mindful of her position as an elected politician but it is also a factor in her upbringing making her both skeptical and pragmatic. In the same article, she stated. “I’m a product of a company town and it wasn’t really nice, but it taught me about life, it taught me about people.” Tashoots grew up in Cassiar, a former asbestos mining town several hours drive from Dease Lake that closed in the mid-1980s leaving many without work, or prospects of work in the employment-starved north.⁶⁹ These kinds of factors make it difficult to support complete protection of the Stikine watershed from resource development, as does the region’s nickname as part of the “Golden Triangle,” one of the richest unharvested deposits of minerals are any indication of its future. The resource development pressure is also part of the reasoning behind the LRMP process, and part of a deeper investigation I will return to in chapter three.

Depicting and representing the above narrative is perhaps one of the most difficult aspects of the assemblage. The assemblage allows for users to juxtapose and compare views of the land with people, usage, and development practices through quotes in text and via video and audio interviews with major players. Unlike a linear narrative where the reader is provided with all of the material on which to base their reading of an issue and situation, combined with their own knowledge, the user’s final analysis in the assemblage is based both on the content they choose to access, its form, their understanding/impression of this data in relation to other data and their own knowledge. This is perhaps an extension of hypertext theory, which attempts to create a sense of co-authorship and unpredictable experiences. But in the case of the digital assemblage, not only is this about available data, but also form and capacity of that form. So for example, the quote from Chief Tashoots is from an article that I will use, but the quotes from Gil Arnold is in video – both of which are subject to user dismissal and/or skimming. Will users make the connections that the structure and framework affords? Are these obvious

⁶⁷ Ian Mulgrew, “How to work with a First Nation: Mining conference hears ‘success story’ of Tahltan band’s partnership with industry,” *The Vancouver Sun*, January 31, 2002, p.D2.

⁶⁸ LaDuke and Chief Dan George, *My Heart Soars* (Surrey, BC: Hancock House Publishers, 1989).

⁶⁹ There is estimated 80-90% unemployment among Tahltan people living on reserves in the Stikine Region.

connections? Should I be forcing my own analysis on the user? More importantly, could I? Ultimately, despite design considerations, this is a user-driven outcome, and will likely be dependent on the base of knowledge users already have about this regional area, its actors, organizations, and perspectives.

III. HUMAN SETTLEMENTS, HUMAN CONTACT

“We claim the sovereign right of all the country of our tribe – this country of ours which we have held intact from the encroachment of other tribes, from time immemorial, at the cost of our own blood. We have done this because our lives depended on our country, and we do not intend to give away the title to any part of same without adequate compensation. We deny the B.C. government has any title or right of ownership in our country. We have never treated them, nor given them any such title.”

- Excerpt from the *Declaration of the Tahltan Tribe, 1910*⁷⁰

The Stikine River watershed is claimed almost exclusively as the traditional territory of the Tahltan Indians, and has been officially declared as such since Chief Nannock, and three other Tahltan Tribal leaders made the above statement in 1910.⁷¹ The Tahltan territory extends beyond the boundaries of the watershed, but the Stikine River has long been the heart of the territory, both ecologically and emotionally. It represents a meeting place, and a sense of the constant flow and overlap of elements within the landscape. In this chapter, I will trace the links between Tahltan culture, boundary issues on the Stikine, and flows of human population in and out of the watershed. The impact of human contact and human settlement on the watershed may seem desirably small from an environmental standpoint, but the landscape is hardly without human involvement. The small human population makes the culture of the dominant group, the Tahltan First Nation an important factor in perspectives on land use, and indeed the connection and

⁷⁰ *Declaration of the Tahltan Tribe, 1910* Published in *Stikine: The Great River, Tahltan Native Studies* and “The Stikine,” *Alaska Geographic*. This declaration has formed the basis for existing legal claims to ownership of the territory, and rights to payment for confiscated lands by the provincial and federal governments. See full text of this declaration in Appendix 1 or the digital assemblage.

⁷¹ The term “traditional territory” is used anecdotally to refer to all land used by a First Nation prior to contact. The term describes the territory lived in and used for sustenance, and defended from encroachment from surrounding tribes prior to European contact. (See Appendix 2 and the digital assemblage for timeline of European contact) It is important to note that land use differed among various nomadic, and semi-nomadic tribes. In BC, there were only 14 small treaties signed with First Nations. Consequently, most traditional territories also represent that which is claimed in the ongoing British Columbia treaty process. (See the digital assemblage for a description of the Treaty Process)

relationship between human inhabitants and this landscape.⁷² In contrast, the landscape also acts upon human populations directly, and indirectly. The shifts in population both of the indigenous Tahltan Nation and immigrant settlers to the Stikine are a result of the remote location of the watershed, and the history of North America. Contested borders and boundaries are imbedded within an inherent temporality revealing national, international and tribal interests, and attempts at administrative controls under the guise of economic development and/or preservation. The representation and multiple understandings of these historical and evolving factors within the digital assemblage comprise some of the underlying basis for understanding why and how decisions about land use planning issues are negotiated for the future.

TAHLTAN ORIGINS AND CULTURE

No one knows exactly how Tahltans came to the Stikine Watershed, but this oral history quoted from a 1995 interview with Tahltan-Tlingit Artist Dempsey Bob is one explanation:

“...There’s some really old stories about Tahltans coming. There’s the story about the two women that met by Tahltan and one came from the south and one came from the north and that’s how the village started there. And one was a Raven and one was a wolf. And that’s how they started the village – these two women and then the men came later.”⁷³

There is some reference embedded in this story of the strong connection between Athapaskan speaking and Tlingit neighbors located to the north and south.⁷⁴ Most central to this story is the reference to a place called Tahltan, and the matrilineal nature of Tahltan kinship.⁷⁵ Tahltan, the place, is located along the Grand Canyon of the Stikine,

⁷² First Nations is a term used in British Columbia to refer to Indian Tribes. Other terms currently used are aboriginal, indigenous, Indian, and native or Native American. In this thesis, I have chosen to use the specific descriptor of tribes, for example: Tahltan Nation, Tahltan First Nation, or Tahltan(s).

⁷³ Personal Interview with Tahltan-Tlingit Artist Dempsey Bob, August 1995.

⁷⁴ “First Nations Peoples of British Columbia,” Aboriginal Education, BC Ministry of Education <<http://www.bced.gov.bc.ca/abed/map.htm>>. Tahltans speak a dialect of the Athapaskan language family. The Kaska and Carrier are the most closely linked Athapaskan neighbors to the Tahltan, but the northern interior of BC heading east and north to present-day provinces of Yukon, Northwest Territories and Alberta were the residences of several Athapaskan speaking Nations. A language map can also be found in the digital assemblage.

⁷⁵ Sylvia L. Albright *Tahltan Ethnoarchaeology* (Burnaby, BC: Department of Archaeology, Simon Fraser University, 1984. Pub no. 15), p.. Albright wrote this text as a graduate thesis. This is the first comprehensive anthropological work done with

near Telegraph Creek. It is alternatively either the fishing/smokehouse area at the confluence of the Tahltan and Stikine Rivers, or the village on a bluff overlooking this area.⁷⁶ The village is considered ‘abandoned’ by the governments of BC and Canada. At present, Tahltan Elder Henry Quock stays there with members of his family during the summer. Traditional gatherings have been held on this site, and many of the old buildings including the one that housed the village school and church still stand. This image of the old church set against the horizon overlooking the Stikine Canyon is one of the most reproduced images of the area, and is sought after by tourists hence the need for a watch person on the premise during the summer months. Not many tourists choose to drive down the seventy-mile gravel, rough, sometimes precipitously winding road though the canyon to Telegraph Creek, but those who do usually like to see all that they can see of the area.⁷⁷

Tahltans, in cultural context, are one in a patchwork of coastal cultures located along the northwest coast of North America. Though an inland tribe, Tahltan culture is similar to the crests and clan systems found among the Tlingit, but it also retains the matrilineal kinship system from traditional Athapaskan cultures.⁷⁸ Early anthropologists like James Teit and George Emmons were intent on proving how much of Tahltan culture was Tlingit and/or Athapaskan in nature, but I prefer to highlight the explanation given by Bob:

“Wherever Raven went, he brought stories. And wherever Raven stopped, that’s where the clans stop. Raven went up to Tahltan. Past Tahltan, you get into Kaska country and there’s not really any crests. And here on the Skeena, you go up to Hazelton, past there [crests] starts to disappear. That’s as far as Raven went. So wherever Raven went that’s where the crests stop... And when Raven was traveling around, he gave different knowledge to different people. He gave people what they needed.”⁷⁹

Tahltans since that of Anthropologists George Emmons and James Teit in the early 1900s.

⁷⁶ Albright, p. 13. “In proto-historic times at least, all Tahltan clans recognized the area of the Stikine-Tahltan confluence as the tribal headquarters, and most families visited there annually to fish or trade.” Images of this confluence are represented throughout the assemblage in various depictions. However, when Tahltan is said in everyday language in reference to a place – it usually refers to the “abandoned” village.

⁷⁷ This is anecdotal based on observation, but it does reflect the general nature of those who travel down dead end roads to reach remote villages. Telegraph Creek is a rough two-hour ride off of Highway 37 – one way in, one way out. The only other way to travel to Telegraph is through chartered air or boat service.

⁷⁸ Albright, p. 12. Teit considered the matrilineality of the Tahltans to have come through adoption of Tlingit customs, but Albright notes recent studies that find matrilineal traits to be proto-Athapaskan.

⁷⁹ Personal Interview with Tahltan-Tlingit Artist Dempsey Bob, August 1995. Andsee Language Map in “First Nations Peoples of British Columbia.” Kaska country is to the

The centrality of Raven as a creative force is evident in most oral history. In Tahltan stories, ‘Crow’ and ‘Raven’ are used interchangeably to denote the same animal when speaking about cultural issues.⁸⁰ As well, these animals and their use in crests and clans are as totemic figures. Before his passing, Tahltan Elder Johnny Sincoots Carlick told this story included in *Tahltan Native Studies*:

“Crow he wanted to make rivers. He made creeks and rivers and lakes. Then he invited all kinds of birds to come for dinner. He give them salmon to eat. He save all the bones and he tell the birds, “Don’t throw away any bones. Put them in the dishes. Save the bones because I’m going to make more fish from them.” Those birds say, “We had a nice dinner, but we don’t have to listen to that talk.” They ran out with the bones in their mouths. Crow make them come back and give them those bones. Then whoosh, just like that, he take off right to the river, and that’s where he threw the bones – those salmon bones. And that’s why the salmon come up the river every year. If it wasn’t for *Siskee-a-cho*, we would have no salmon right today.”⁸¹

Raven or *Siskee-a-cho* left a mark on the land as well. The confluence of the Stikine and Tahltan rivers is known as Crow’s House. Like the previous story from Johnny Sincoots Carlick, the Late Elder Emma Brown recorded this story for *Tahltan Native Studies*, a 1970 publication made for Tahltan youth to know and learn their culture.

“ Well, the Tahltan Bluff that’s *Siskee-a-cho kimma* – Crow’s house. You see that fire pipe sticking out of the top? That *Nu-Kid-ee-aw*. That’s what they call it, the fire pipe. ... And you see that little hole there, in the side of the Bluff? That’s where *Siskee-a-cho* has his door. And do you see all those little places there? Those are his rooms. He stays all night in his *kimma*. ...That Bluff, people say it made from volcano. ...On the other side is *Siskee-a-cho*’s blanket. The wind blows that way, and he didn’t want that wind, so he put his blanket made from groundhog skins there.”⁸²

northeast of the Stikine region. Kaska people traded with the Tahltans and were also Athapaskan speaking. Skeena River begins to the south of the Stikine. Hazelton is a town located on the Skeena River. The original village, now a reserve and a town, is home to the Gitksan Nation.

⁸⁰ This is anecdotal based on the experience of listening to stories, and conversations with other Tahltans. Modern Tahltans like Dempsey Bob are more likely to use the word, Raven. While older elders use the word, Crow. The speculation is that it was mis-translated originally. In Tahltan, the word ‘Crow’ is used for what is a Crow, while the words ‘Big Crow’ denote Raven.

⁸¹ *Tahltan Native Studies* (Financed by Tahltan Indian Band and Stikine #87 School District, 1970), p. 112.

⁸² *Ibid*, p. 109.

The area described is a part of the volcanically formed geological spectacle of the Grand Canyon, at the confluence of the Stikine and Tahltan, where Tahltans would meet during the summer months. Tahltan Bluff overlooks the place called Tahltan from the other side of the river.

The assemblage takes these stories about land, origins, and spiritual belief and attempts to plot them in an abstract space that can reflect elements of the geographical referents of the story. So for example, the assemblage contains several images of *Siskee-a-cho kimma*, or Crow's house that in turn link it to its geographic positioning, as well as, provide links to video and textual records of stories about Tahltan beliefs, a video interview about the current state of fisheries on the Tahltan river, and video footage of songs performed by Tahltan youth in traditional regalia in front of the traditional smokehouses near Crow's house. By positioning content with separate modes of representation, historical significance, and spatial sense, the assemblage allows these fragments to become variables in a trajectory moving towards a joint understanding of people, history, and place. Digital space's underlying programming code requires precision in procedure and organization of this material, but graphical interfaces reflect the chaotic nature of overlaps and repetition in visual information.⁸³ Where there is a particular amount of chaos is in the two-windowed interface described in chapter one. This interface may seem less innovative in visualized construct than the other interface designs, but in terms of providing adjacency of normally separate, and unpublished or non-circulated content, this interface provides a kind of realized hypertextual diagram of media juxtaposing representations across time, subject, and geographic place to form a conceptual montage.

The two-windowed interface lacks the visualized diagrammatic links between content areas and issues, but it does access the encyclopedic capabilities of digital media. I am particularly interested in this high level of enhancement the assemblage affords to a user's conception of the Stikine Watershed and the forces at work within it. In Jonathan Crary's analysis of the work of Cezanne's landscapes painted in early 1900s, he looks at the way in which Cezanne sought to refigure himself as "an apparatus that could implacably apprehend the world outside of the terms of figure/ground, center/periphery, or close/distant."⁸⁴ Crary takes care to differentiate this kind of thinking as an

⁸³ Kittler, pp.332-333. There is some debate about how digital media is created especially in regards to the varying opacity of programming code and graphical interfaces. Kittler states: "The bulk of written texts... does not exist any more in perceivable time and space, but in a computer memory's transistor cells." He goes on to make the case for software being so obscured by the graphical interface so as to become a part of the hardware. The computer is hidden from the user and often, the designer, by nature of the fact that programming language is not everyday language, and the organization of such is done without our understanding or input. In Kittler's words, "We simply do not know what our writing does." And further, this process of computing seems to "hide the very act of writing," and one could argue, that it also hides the very act of creating.

⁸⁴ Crary, *Suspensions of Perception*, p. 342

“affirmative model of automatic behavior... in which thought functions at a higher level with an unprecedented arsenal of syntactic, perceptual, and conceptual tools,” as opposed to “passive automatism”.⁸⁵ This analysis bears some comparison to the assemblage in that the abstraction of digital space in the two-windowed interface allows form and content to exist without a database-driven framework, and without the homogeneous consistency of maps, linear narrative, or the internal spatial coherence of video, text, and image. Instead, the assemblage creates its own non-linear and abstract spatial consistency that envelops and supercedes other forms of media it represents.⁸⁶ Most importantly, each link, montage, and juxtaposition within the assemblage, while variable, is not dynamically driven by automation, or database display parameters. I have purposely avoided the utilitarian nature of interfaces like a ‘search’ feature in hopes of avoiding any kind of non-integration of data into this reintegrated framework.⁸⁷ Instead, each element is mapped out and diagrammed according to the author’s prerogative and analysis.⁸⁸ Each piece of data is placed specifically in relation to several others for the purpose of igniting curiosity and assisting the user in a creation of their conceptual assemblage. The assemblage thus functions as a made object by an author/artist, and as a prosthetic for apprehension by the user.

First Nations iconography and symbolism is an area where the nature of the assemblage may work particularly well in terms of both of these goals. By way of a starting explanation, Tahltans divide into two phratryes: Wolf and Raven. Each phratry is further subdivided into clans whose traditionally held territories were subdivided from the overall Tahltan territory. The clans are not as heavily utilized in terms of identification as they once were -- most Tahltans are more likely to refer to themselves as being from the Wolf or Raven clan.⁸⁹ These two main crests of Wolf and Raven are used today in art forms, and identifying art forms like button blankets that display the distinct Northwest Coast native designs that flatten three-dimensional animals and objects into two-dimensional series of curved lines and blocks of color.⁹⁰ The Tahltan Band logo

⁸⁵ Ibid, p. 358. Crary uses Deleuze’s work on cinema to look at the development of two models. The first being that of creative affirmation like that articulated about Cezanne, and the second being the management of perception or “passive automatism”.

⁸⁶ Bolter and Gruisin, pp.197-200.

⁸⁷ I have outlined in chapter one how this is similar to hypertext and one of the possible pitfalls of narrative confusion.

⁸⁸ Eventual plans for open concept would include the user in this process. I have referenced this idea in chapter one.

⁸⁹ The terminology is not “correct” anthropologically-speaking i.e. a clan is not a phratry, but the shift in reference speaks to evolution within the practice of Tahltan culture.

⁹⁰ Nathan Knobler, *The Visual Dialogue: An Introduction to the Appreciation of Art* (New York: Holt, Rinehart, and Winston, Inc., 1966), p.149. The depiction of animals in three dimensional form on a flat two-dimensional surface is a distinctive aspect of northwest coast tribal art, including Tahltan and Tlingit art. Knobler makes this distinction in comparative media terms: “Photographic symbolic forms have been commonly recognized as accurate equivalents of natural forms only in Western

contains both a Raven and Wolf. Songs, stories, dances and crests from clans and phratries are still used as potlatches begin to be celebrated again.⁹¹ Tahltans still abide by marriage patterns that draw one partner in the marriage from each phratry.⁹² If a person marries a non-Tahltan, the partner immediately adopts the identity of whatever the opposing clan is – a wolf clan member who marries a non-Tahltan means his/her non-Tahltan spouse becomes a raven. Children produced from this kind of marriage or a Tahltan-Tahltan marriage follow the clan of their mother. Traditional Tahltan names are passed down based on which phratry an individual belongs to, and traditional names can only be given by the matriarch or elder of a phratry. Some traditional names relate to the land, while others have different or personal meaning.

The assemblage is a layered experience with images, totemic figures, and cultural evocations represented through song, image, text, and interview. What I hope results from an experience with the assemblage is a sense of how these objects and beliefs are lived and practiced. It will not only allow for the cultural artifacts to make appearances in the foreground and background, but it gives voice to cultural leaders like Bob who can explain the significance of what is being represented -- that there's an inseparable sense of personal, cultural and spiritual history:

“You know like talking about the art – what Grandma taught me. She said: In our things is who we are. Its in our blankets, in our masks, in our carvings, in our drums, in our aprons – Its who we are... When we dance, we show our face, our clan face, our families' face. That's when the wolf comes out. That's when the ravens come out to dance. That's part of our history, part of our clan too.”⁹³

In this interview which ranged from stories and explanations like those quoted here to his personal history and role as what I have termed ‘the father of modern Tahltan art’, Bob noted that the underlying philosophy of Tahltan culture is one of non-separation between land, culture and people. In some ways, his philosophy articulated in this interview, like Foucault, Deleuze, or White's analysis of power, relations, rhizomes, and environmental history, forms part of the underlying conceptual framework for the assemblage:

“The art is a starting point. Its very important, because it fits right into the culture, the meaning of the culture, the meaning of what we do, who we are,

[European] art. Certain tribal groups make drawings that represent both sides of the animal in full view at the same time, something the photograph does not.” Sculpture in wood, bronze and other media is also common in northwest coast tribal art.

⁹¹ Tennant, *Aboriginal Peoples and Politics*, pp. 51-52, 122. Potlatches were banned as an amendment to *The Indian Act* between 1884 and 1952.

⁹² Personal Interview with Tahltan Elder Willie “Boots” Brown, August 1995. Pre-contact, the penalty was death if you married someone from your own clan. It was considered something akin to incest.

⁹³ Personal Interview with Tahltan-Tlingit Artist Dempsey Bob, August 1995.

like our clans, our crests, our traditions. It's all connected to the art, and to the land, and to the people."⁹⁴

CONTESTED BOUNDARIES AND TRADING PARTNERS

Traditionally, Tahltan culture was shaped by what is termed a “semi-nomadic” existence. All of the tribe would gather in the summer near the Stikine or one of its tributaries to harvest salmon, feast, and trade with surrounding neighbors – Tlingit being the most prominent, but trade also occurred with friendly Athapaskan-speaking neighbors to the east namely: the Kaska and Carrier-Sekani peoples. Autumn and winter would find small family groups hunting for sheep, goats, bear, marmots, ground squirrels, beaver, and caribou. Tahltan traditional territory was divided into clan areas for this express purpose -- families belonging to a clan would have the rights to hunt, cache and live with their families in a certain area during the hunting months.⁹⁵ This also extended to summer fishing areas – a practice that remains in place for today’s generation of fishers who inherit fishing spots and smokehouses through their families. Along parts of the Grand Canyon, traditional smoke houses made of rough-hewn pine are visible from the shore and are jointly used by families in the warm summer months when salmon are making a dash to their spawning beds on the Tahltan, the Tuya and other smaller tributaries.

Near the mouth of the Stikine River, the area is claimed by Tlingit Indians from what is now Wrangell, Alaska, previously Fort Dionysus, Russia. Tlingit Indians divide their traditional territory, which covers most of the Alaskan panhandle into subsections called “kwaans” which can be translated as “people of that place.”⁹⁶ The Stikine kwaan includes all of the villages such as Wrangell, St. Petersburg, and others at the mouth of the Stikine River. Secured through trade and intermarriage, the Stikine Tlingit developed a seasonal border with the Tahltan Indians. In the winter, the Tahltans were free to use the ice to travel on for hunting as far as the mouth of the river, and in the summer, Tlingits traveled to the interior via canoes because the climate was better for drying fish, meat and berries.⁹⁷ Borders shared with other surrounding tribes, including the Taku Tlingit or Inland Tlingit to the north and the Nass people or Nisga’a to the south were less friendly and involved wars over boundaries and hunting areas.⁹⁸ In fact, the first

⁹⁴ Ibid.

⁹⁵ Albright, pp. 10-11. Teit detailed the clan divisions of Tahltan territory thoroughly. Sylvia Albright reconstructed a map based on Teit’s recordings that I have reproduced for the assemblage.

⁹⁶ Wallace M. Olson, *The Tlingit: An Introduction to their Culture and History*. 2nd ed. (Auke Bay, Alaska: Heritage Research, 1991), p. 18.

⁹⁷ Albright, p. 10, referencing Teit’s work.

⁹⁸ George T. Emmons, *The Tahltan Indians* (Philadelphia: The University Museum, 1911). Emmons documents the prevalence of inter-tribal war in this region. Tahltans tend not talk about it often, or outside of a group of Tahltans.

documented record of European sightings of the headwaters of the Stikine remained sightings because war was ongoing between the Tribe who could sight the headwaters and the Tahltans who enjoyed the majority of its privileges.⁹⁹

Contested boundaries existed not only among indigenous tribes, but also among those who came to trade, “discover,” and exercise sovereignty. The Russians, who owned Southeast Alaska, at first refused Canadian access to the Stikine river. Eventually, the Hudson’s Bay Company leased a portion of Alaska from the Russians, but the first representative came overland and met the Tahltans and visiting Tlingits at Telegraph Creek. In this meeting in 1838, Tahltans played brokering role between the Tlingit who felt they would encroach on their inland trade, and the Hudson Bay Company representative Robert Campbell who was eager to set up a post on the Stikine.¹⁰⁰ This first European to venture into the heart of Tahltan territory, and onto the Stikine, was met by a female chief named Nahanni from the Tahltan Nation, and Chief Shakes from the Stikine Tlingit. It would take several years before the Hudson’s Bay would set up a post, and after gold was discovered in 1861, the Russians were leary of letting valuable mining claims go to the Canadians. This border dispute continued once the United States purchased Alaska. A border was drawn up in 1877, and finally accepted in 1903. The border roughly corresponds to the one agreed upon by the Tlingit and Tahltans long before. Interestingly, the international boundary is marked by ancient stone cairns that are noted in the Alaska Geographic report on the region as being studied by Forest A. Kerr, a Canadian government geologist between 1926 and 1929, who said in reference:

“They are placed along a stretch of the river that was a border zone, a meeting place for friendly pow-wows or deadly combat between the Tlingit tribe of the coast and the Tahltans to the Interior...”

By making the watershed as a whole the focus of the assemblage, the study of boundaries become part of understanding relations and flows evident within the watershed, rather than a defining characteristic of the landscape. Borders may define administrative, or even cultural systems, and they may emanate from forces operating internally or externally. In this case, the above historical narrative has parallels between each: the clan system, porous tribal boundaries, and the colonial overlay of Russian, American, and Canadian governments rushing to plant flags, and develop boundaries based on economic flows, and imbedded capital. In reference to the later, Anthropologist Hugh Brody in the introduction to *Stikine: The Great River* frames the movement of

⁹⁹ Lamont Bassett, “Spatsizi: One of B.C.’s last, great wilderness areas is at the center of an ecopolitical debate,” *Western Living*, July 1985, pp.54-58 and 61-64.

¹⁰⁰ Albright, pp.15-16. Tahltans had been warned by Stikine Tlingit Chief Shakes that “white traders from the interior were enemies and should be killed.” A female chief named “Nahanni” brokered an agreement between Campbell and Shakes for this first agreement. However, Campbell feared for his life and did not stay in the Tahltan camp during his first visit. Albright notes he was also threatened several times during his first year in Tahltan territory.

Russian and Canadian forces as such: “The modern history of the Stikine watershed is shaped by a belief in material riches.” Contrasting his belief in economic corruption with this idyllic setting, Brody’s perspective reflects more of the environmentalist tension earlier described. But taken as a mode of historical analysis, it speaks to a system of boundaries being laid down according to economic considerations, and thereby transforming the landscape into a field of fur trading, gold mining, natural resource opportunities. Alaska as a whole was sold to the United States in 1867 by the Russians transforming the mouth of the Stikine from a condition for economic activity into a commodity itself. Further, the 1971 Alaska Native Claims Settlement Act put a price tag of 962.5 million dollars on Alaska transforming legal title, tribal history, and the landscape into inseparable commodities.¹⁰¹

In the case of the Stikine, boundaries structure a field of perspectives, reflect flows of capital, and can either conceal or open up historical narratives.¹⁰² What is important in terms of the assemblage is that parallel or alternative boundaries exist through story, and markers on the landscape. Perhaps more significant in terms of assemblage design is that these fragments conform to that which was originally envisioned: a series of fragments which taken as a whole can act as referents for one another resulting in an understanding of the whole. Michel de Certeau in *The Practice of Everyday Living* articulates the depth to which boundaries are fragmented, narrated, and structuring for social spaces:

“These ‘operations of marking out boundaries’ consisting in narrative contracts and compilations of stories, are composed of fragments drawn from earlier stories and fitted together in makeshift fashion (bricolés). In this sense, they shed light on the formation of myths, since they also have the function of founding and articulating spaces. Preserved in the court records, they constitute an immense travel literature, that is, a literature concerned with actions organizing more or less extensive social cultural areas.”¹⁰³

In the case of the Stikine Watershed, the preservation is not only a matter of court records, but also of national history, cultural or oral history, biological data, and geological data. For by opening up boundaries to a set of interpretations, it becomes possible to see lines within the watershed between: spaces of volcanic upheaval, alpine climate zones, mountain ranges, mountain goat areas, grizzly bear territories, town limits,

¹⁰¹ Olson, p.66-68.

¹⁰² Shankar Raman, *Framing “India”: The Colonial Imaginary in Early Modern Culture* (Stanford: Stanford University Press, forthcoming), p. 285. This text was an inspiration for framing this perspective on boundaries: “Among its contributions is postcolonialism’s focus on the processes through which boundaries are drawn, on how lines of nationhood and identity are made (and unmade) through history, in thought and in practice. . . . These tensions are also informed by the concrete effects of colonial legacies, which both structure the global field of transformations and conceal the unevenness of its surfaces.”

¹⁰³ de Certeau, p.122-123.

Indian reserve boundaries, hunting areas, fishing jurisdiction, salmon spawning rivers and creeks. In the words of David Harvey: “Where my relevant environment begins and ends is itself a function of the ecological, economic, and other processes which are relevant to me.”¹⁰⁴ These inherent relations and processes create a set of lines that interact, overlap, and reverberate with one another representing flows and shifts, some of which are interior and exterior, and that together form a “perpetual field of interactions”¹⁰⁵ This field is what the assemblage attempts to represent by opening up the conceptual breaks in boundaries.

SHIFTS IN HUMAN POPULATIONS

Until modern airplanes and a highway in 1972, the only way into the Stikine River Watershed was through the Stikine River itself, or overland via trail on foot or horseback. The river was the primary means of transportation until commercial travel shut down in 1969, and consequently, it can be seen as a line of flight, territorialization, and deterritorialization.¹⁰⁶ With each boat that came up the river, the status of the watershed could change economically, socially, and often, politically. The assemblage represents this aspect by adding an annotated diagrammatic layer of historical movements and flows to an image of a geographic map. This deliberate distortion, much like raising the issue of contested boundaries, provides a response to the seeming empty topography in a map image representing a wilderness area like the Stikine Watershed. As J.B. Harley notes in his essay on “Maps, Knowledge and Power”: “Maps as an impersonal type of knowledge tend to ‘desocialize’ the territory they represent. They foster the notion of a socially empty space.”¹⁰⁷ By focusing on the shifts in boundaries and human populations as a result of flight, territorialization and deterritorialization, the assemblage fills up an empty cartographic space providing analysis and annotation. In this abstracted space, the river may seem the most constant in comparison to shifts in human populations and nation-state boundaries, but the river is in perpetual motion, and more often than not, in a perpetual state of transformation. It is a vehicle and a catalyst for rapidly occurring shifts and movements.

Traveling up the Stikine, it was the Tlingit traders who had traditionally been middlemen for goods going to and from the coast that brought in the first smallpox epidemic in 1832. Tahltans were still gathered in large family groups at traditional fishing spots along the river making the epidemic more disastrous both due to contact, and the interruption that occurred in food gathering. From Albright’s *Tahltan*

¹⁰⁴ David Harvey, *Justice, Nature and the Geography of Difference* (Cambridge: Blackwell Publishers, 1996), p. 52.

¹⁰⁵ Deleuze and Guattari, p. 360. Quote in reference to state apparatus and nomadology.

¹⁰⁶ Deleuze and Guattari, p.3 and throughout text.

¹⁰⁷ J.B. Harley, “Maps, Knowledge, and Power,” in *The Iconography of Landscape: Essays on Symbolic representation, Design and Use of Past Environments*, eds. Denis Cosgrove and Stephen Daniels (Cambridge: Cambridge University Press, 1988).

Ethnoarchaeology: “Over half the population died either from the smallpox itself or from starvation the following winter. The second epidemic arrived in the year between 1847 and 1849.”¹⁰⁸ Over two-thirds of the population died during this time taking with them respected leaders and their cultural knowledge, and the ability to operate multiple and elaborate fishing operations along the river. 1918 and 1919 saw an estimated 200 typhus cases brought to Tahltans from a visiting Kaska woman, 1920 brought the measles, and the 1940s saw another disease epidemic. Even now the shockwaves of disease reverberate for Tahltans as explained by Bob:

“What really got our culture is the disease – it wiped out all our old people and children. It wiped out libraries – the elders were like libraries of knowledge. And that’s what happened. That’s when the culture started to break down when the people died off.”¹⁰⁹

Fur was what brought the first European traders inland and up the Stikine, but the discovery of gold on the Stikine (1861), near Dease Lake (Cassiar - 1874), and north in the Klondike (1898) turned the attention of the continent to northwestern BC, the Yukon and Alaska for the latter half of the 19th century. The Stikine gold rush was short-lived, but it managed to bring thousands of people to the banks of the Stikine in a gold rush town named Glenora, located about 12 miles from Telegraph Creek. These vast influxes of primarily men brought short-lived employment for cooks, packers, and other entrepreneurial individuals. But these events also managed to wedge open access to the Watershed with the arrival of steamboat service that would last until 1916, and continue on as commercial boat service until 1969.¹¹⁰ These boats brought in supplies for successive rushes of gold miners, the overland Yukon Telegraph route, the construction of the Alaska Highway, missionaries, and delicacies like fresh fruit to the people of Telegraph Creek.¹¹¹ With the influx of goods for miners, traditional trading broke down with the Stikine Tlingit, and villages were established to be nearer to goods that were initially exchanged for furs. Tahltan men were employed as guides, packers and hunters, and Tahltan women married a few of the gold miners and entrepreneurs who decided to stay.

The semi-nomadic existence of Tahltans began its demise with the fur trade store, but was most affected by the implementation of the Canadian Federal Government’s policy on Indians. Without the involvement of any Tahltans, Tahltan Reserves were

¹⁰⁸ Albright and Krueger, et al. Estimated population decreased from 1000-1500 to 300-325. The devastation of the disease was documented by missionaries.

¹⁰⁹ Personal Interview with Tahltan-Tlingit Artist Dempsey Bob, August 1995.

¹¹⁰ “The Stikine,” p. 52-65. Alaska Geographic has compiled a complete list of every steamboat that ascended the Stikine River.

¹¹¹ *Tahltan Native Studies*, p. 30. From Judy Joseph: “Like when we lived in Telegraph, we didn’t have fresh fruit. Only in the summer time when the boat came up. We would get oranges, and I remember I thought that was the greatest thing...Now my kids get apples and oranges every day. They don’t realize how different it was for us.”

drawn up in 1905. Here is a quote from the Indian Office to the Land and Works Department in BC detailing the value of the land:

“No.1 Tahltan, comprises 375 acres of rough mountain land, the whole of which is valueless, either for pasture or agricultural purposes. The timber upon it is small and of no commercial value, and the soil is arid, consisting of lava beds and gravelly land, worthless as to quality, and should it be required there seems little possibility of obtaining water for irrigation purposes in that locality.”¹¹²

The *Declaration by the Tahltan Tribe* delivered a response five years later which states:

“We wish it to be known that a small portion of our lands at the mouth of the Tahltan River, was set apart a few years ago by Mr. Vowell as an Indian reservation. These few acres are the only reservation made for our tribe. We may state we never applied for the reservation of this piece of land, and we had no knowledge why the government set it apart for us, nor do we know exactly yet.”¹¹³

This conversation, as recorded in letters between Chief Nannock and the Indian Agent sent by the Canadian Government’s Department of Indian Affairs marked one of the most profound and permanent shifts. Government policy mandated that the surviving Tahltan population leave their traditional nomadic lifestyle and settle on land that did not reflect their choosing, and was by accounts, worthless in terms of economic value. While some chose to live out the rest of their lives according to semi-nomadic Tahltan traditions, many of the younger came to the reserve towns that were being established. What followed was a continued and often tragic policy of cultural assimilation and forced dependence that included sending children to residential schools in Whitehorse, Lower Post, and much further away until the early 1970s.¹¹⁴

Today, the Stikine watershed hosts three small communities of humans: Dease Lake, Iskut, and Telegraph Creek. The majority of residents in all towns are registered members of the Tahltan Nation, and each town is nearby a reserve.¹¹⁵ All are accessible by highway 37 or 37a, which until recently was mostly unpaved, and remains primarily unpaved on 37a between Dease Lake and Telegraph Creek, the smallest of the three communities.¹¹⁶ The construction of a highway initiated a change in the composition of

¹¹² Letter to The Deputy Commissioner of Lands and Works Victoria, BC from Indian Office Victoria, BC, 28 July 1905. Archived as “Tahltan Indian Reserve Letters and Map” Joint Reserve Commission, file no. 9.

¹¹³ *Declaration of the Tahltan Tribe, 1910.*

¹¹⁴ Residential Schools are further explained in chapter three.

¹¹⁵ Estimated majority is at 60%.

¹¹⁶ Personal Interview with BC Rail Vice President of Communications, Community and Aboriginal Relations Alan Dever, February 2002. A railway bed was laid between Chipmunk, BC and Dease Lake in the 1970s by BC Rail, but the bed has never been operationalized, nor has track been laid. Plans to go ahead are unlikely as costs are now

towns and reserves. In a 1966 graduate thesis on residency among Tahltans, it was concluded that Indian Affairs was encouraging a policy of immigration. As a result, the vast majority of Tahltans live off-reserve for reasons of employment, education, or perhaps, experience and adventure.¹¹⁷ The need for employment in the watershed is a point I will return to for further consideration in chapter three. Many who do live outside the watershed return to fish or hunt in the summer and autumn, and temporarily swell the population numbers, particularly in Telegraph Creek and the surrounding fishing areas along the Stikine.

Using the various narratives of shifts and recurring shifts, deterritorializations, and reterritorializations in human populations, through culture, settlement, boundary setting, disease, administration, the assemblage and this textual account of it use montage and juxtaposition of perspective in a conscious way. Inspired in some ways by Walter Benjamin's use of montage in his unfinished *Arcades Project*, this approach hopes to avoid the seamless narrative, chronology, and production of historical fact – what Benjamin calls “historical materialism”.¹¹⁸ Susan Buck-Morss in her analysis of the fragmentary *Arcades Project* explains the making of the “dialectical image”:

“The principle of construction is that of montage, whereby the image's ideational elements remain unreconciled, rather than fusing into one ‘harmonizing perspective.’ For Benjamin, the technique of montage had ‘special, perhaps even total rights’ as a progressive form because it ‘interrupts the context into which it is inserted’ and thus ‘counteracts illusion’ and he intended it to be the principle governing the construction of the *Passagen-Werk*: ‘This work must develop to the highest point the art of citing without citation marks. Its theory connects most closely with that of montage.’”¹¹⁹

This construction inherent in the assemblage uses a heterogeneous form and content in a manner, which allows for contradiction, clarification, and new perspective on old topics to counteract illusions of emptiness within the landscape. Instead, the river and its lands become conditions for, results of, and means to human actions and interactions. The

estimated at \$2 billion dollars to build the railway and repair the existing bed. My interview with Dever is part of the assemblage.

¹¹⁷ David T. Hawkes, *An analysis of demographic data dealing with employment and residence patterns in the two Indian communities of Telegraph Creek and Iskut, British Columbia*. University of British Columbia, 1966.

¹¹⁸ Michael Taussig, *Shamanism, Colonialism, and the Wild Man: A Study in Terror and Healing* (Chicago and London: University of Chicago Press, 1987), p.366-370. Taussig masterfully interweaves analysis of Walter Benjamin's concept of historical materialism with the colonial history of the Putumayo region of Columbia. Taussig's use of Benjamin's work helped me see how Benjamin's analysis of historical materialism might be helpful in this analysis.

¹¹⁹ Susan Buck-Morss, *Dialectics of Seeing: Walter Benjamin and the Arcades Project* (Cambridge: MIT Press, 1991), p.67

assemblage allows for a sense of not just what happened historically to Tahltan culture, or what it is, but how it is practiced and how it continues to evolve. This representation of a temporary equilibrium can be understood through the practice and philosophy of Bob:

“...Tradition changes -- it evolves. It always has. It has to. And it has to because if art doesn't evolve, it dies. The same with culture, it evolves slowly. It doesn't change overnight. It evolves as the people change. It's like somebody asked me when I went to speak in Toronto: do I still carve with stone tools. I didn't come here on the canoe, I came on the jet plane. I live today. I don't live a hundred years ago.”

The people, and the landscape of the Stikine River Watershed remain in motion with each other, and with the greater world and landscape beyond the Stikine.

IV. ADMINISTRATION, PLANNING, AND DEVELOPMENT

“The story of the Stikine has essentially been one of false hopes and would-be developments... of railway lines not quite constructed; grand telegraph proposals that failed (and one that succeeded, if only for a few decades); gold mines that petered out; copper and coal deposits that defied development... and on and on.”

- From Alaska Geographic Society's *The Stikine River*, 1979.

This was the story of the Stikine when this article was written in 1979. The Yukon Telegraph had made it overland from Vancouver to Dawson City through the Stikine region in 1901 and remained in operation until the 1940s when newer technology made it completely obsolete. BC Rail laid a rail bed extension to Dease Lake in the early 1970s that included a three million dollar bridge over the Stikine, but due to an enquiry into suspicious cost overruns, all construction was stopped before any track was laid.¹²⁰ The unpaved “Highway 37”, roughly followed the rail bed, and finally provided access to the Dease Lake and Telegraph Creek during this same decade. And since then, several mines including Golden Bear (gold), Eskay Creek (gold/silver), Klappan (coal), Cassiar (asbestos), and smaller jade mining operations have seen success in this region. More importantly, a certain value has been established for the riches thought to be held within: the term, 'golden triangle' covers an area in northwestern British Columbia that includes the watershed lands, and is said to hold one of the last untapped mineral deposits in North America. The active exploration for more mining operations, along with general tensions between environmental activists, First Nations land claimants, and industry lobbyists

¹²⁰ Personal Interview with Alan Dever, BC Rail Vice President of Communications, Community and Aboriginal Relations, February 2002.

prompted the BC Government to institute a planning process that brought together resident and non-resident “stakeholders” (denoting anyone who has an interest or stake in land use planning) to create the LRMP in 2000. This plan will govern how the Stikine watershed is divided up, protected and exploited.

The LRMP represents the latest, and quite possibly, most positive administrative intervention into the social and political lives of the Stikine inhabitants. Tahltan people, as has been explicated in chapter two, make up the majority of the population and have undergone massive shifts in lifestyle, and relations to administrative entities. In this chapter, I will take a closer look and at the same time at how fragmented accounts of historic dealings with administrative entities and their local representatives determine the present status of land claim and governance issues. This necessarily leads to an examination of the way land and people have been and continue to be administered by multiple government departments that exercise authority over the Tahltan Nation and non-Tahltan residents, and how these connections are made through the social diagramming interface of the assemblage. And finally, I will explicate certain aspects of the process of land use planning in the watershed, drawing on the assemblage’s depiction of perspectives on both protecting and mining the ‘golden triangle’.

WHO OWNS THE STIKINE

The connections through human contact and settlements in the Stikine region set the stage for the beginning of BC and Canadian jurisdiction of land and people in the Stikine region. As noted in chapter two, the original interest of the Canadian Government in the Stikine area began with the fur trade, and hit a peak with the gold rushes occurring in the late 1800s. These commercial yields represented a small portion of many remote activities throughout BC and Canada that involved decisions by remote administrators located in the increasingly urbanized capital cities of Victoria (BC) and Ottawa (Canada). Their policies were not necessarily made with the specifics of a region in mind (though implementation would require further adjustments). Rather, policies were based on overarching cultural influences and ideas, and the needs of a newly structured government to progress economically both for its own good and that of the British Empire. In the remote northwestern corner of BC, policies were carried out by handfuls of researchers, mapmakers, geologists, Indian agents and missionaries who traveled up the Stikine. Their stories offer a glimpse of the developing relations between administrators and residents.

A 1970-71 study compiled and narrated a chronology of events based on summaries of diaries and letters written by missionaries posted to the Tahltan Mission.¹²¹ Started in 1897, the Mission coincided with opening of the region via successive gold rushes. It also included a day school for children as part of the implementation of tenets

¹²¹ Jan Krueger, Shane Conn and Beth Moreau, *Tahl Tan Mission Study*. Part of the Opportunities for Youth Project, 1971. Partially funded by Tahltan Band.

of *The Indian Act* that brought the institutions of church and state together for a partnership that would utilize education to ‘civilize’ Indians.¹²² The founder of the mission, Reverend F.M.F. Palgrave lamented the practices of other visiting non-Indians, primarily the debauchery of gold seekers, who tainted what he considered to be the “child-like” Tahltans.¹²³ This stands in stark contrast to the oral histories about the Tahltan Chief at the time, Chief Nannock.¹²⁴ The gold seekers or any overland travelers at the time used pack trains of horses laden with people and supplies. Johnny Sincoots Carlick told this story about an incident that forced these pack-trains to find a new road:

“Chief Nannock. He was the smartest chief we ever had before... You know where the fish house is at Tahltan? Well, the pack-train used to go pretty near straight up there. And one time the Chief almost got killed. The pack-trains always used to come right through where people fished. So one time, Chief Nannock stopped them. He tell them, “You turn around. Take those horses back! You got to make road in different place... So they take the pack-train back and they go and get the police. And the judge and the policeman come up again. He stop all pack-trains for two days and finally they got to make trail up different way. Because Chief Nannock say they got to. That’s the kind of chief he was.”¹²⁵

Despite the power of this story, the obvious knowledge of the juridical system already in place, and the ability to wage a peaceful protest to protect people and land use activities, the paternalist sentiment of Palgrave can be found in diaries of Telegraph operators, visiting bishops, and other non-Indian travelers and residents.¹²⁶ Specifically,

¹²² Guy Lawrence, *Forty Years on the Yukon Telegraph*. (Quesnel, BC: Caryall Books, 1965), p. 57. This text is the diary of a telegraph operator stationed in the Stikine region. Diary entries note the foundation of the school, and that an Indian Agent would follow. Krueger et al. attempt to make the case that the mission was a result of the debauchery of the gold rush, not *The Indian Act*. The mission could be framed as a convergence of all three factors: the gold rush made travel easy and possible, and publicized the need in the area to minister to whites and Indians, and to educate Indians. Missionary work along BC’s northwestern coast was already in full swing at this time.

¹²³ William Ridley, “Snapshots from the North Pacific” in *Warriors of the North Pacific: Missionary Accounts of the Northwest Coast, the Skeena and Stikine Rivers, and the Klondike, 1829-1900*, ed. Charles Lillard (Victoria, BC: Sono Nis Press, 1984), p.265. Bishop Ridley’s account of the area at this time gives a good idea of the flux of people. During his first visit, he shared camping grounds with over 3,000 gold seekers. The following year, he looked forward to the restful peace of quiet of camping alone.

¹²⁴ I am a 5th generation descendant of Chief Nannock. He is my great, great, great, great, great grandfather.

¹²⁵ *Tahltan Native Studies*, p.117.

¹²⁶ Lawrence, pp. 75-81. Lawrence’s diary entries in *40 Years on the Yukon Telegraph* is one such example of culturally nuanced descriptions. In a chapter titled, “Cookbook Marriage,” he recounts marrying a Tahltan man and Tlingit woman with a cookbook because they didn’t understand it was not a Bible or how marriages were performed.

Reverend T.P.W. Thorman who arrived to take over the mission from Palgrave four years after its founding repeated this lament about the corruption of innocent, helpless Tahltans.¹²⁷ In Thorman's letters and diaries, he also reported that Chief Nannock and his wife were baptized after many years of effort in 1911, and that the "native land agitation has reached here with all its evils" in 1912 causing Indians to avoid the 'white man.' Two of Thorman's five children followed in his footsteps at the Tahltan Mission, and their experiences and observations provide equally interesting localized historical markers. F.P. Thorman witnessed the epidemics, and the withdrawal of federal government funding for the Indian day school noting that the "novelty" had worn off with Tahltans and they were no longer interested in attending school. His brother W.P. Thorman, during a later period of service, stated that they had "tried to build over Tahltan culture," but it persisted.¹²⁸

These fragmented, and personal accounts of shifts in school attendance and attitudes towards non-Indian settlers is reflected in this passage of the earlier referenced *Declaration of the Tahltan Tribe, 1910*:

"We desire that all questions regarding our lands, hunting, fishing, etc., and every matter concerning our welfare, be settled by treaty between us and the Dominion [of Canada] and B.C. governments. ... We are of the opinion it will be better for ourselves, also better for the governments and all concerned, if these treaties are made with us at a very early date, so all friction, and misunderstanding between us and the whites may be avoided, for we hear lately much talk of white settlement in the region, and the building of railways, etc., in the near future."

The Tahltans saw themselves as part of a greater effort within BC at this time to get treaties signed. As a British colony, *The Royal Proclamation of 1763* stated that all territories in British North America must be ceded to the Crown through treaties, and certainly this process had been carried out in all of the eastern provinces. Yet by 1910, the BC government had signed just 14 small treaties on the southern part of Vancouver Island, referred to as the Douglas Treaties – named for Governor Douglas who presided over British Columbia at the time.¹²⁹ Anthropologist James Teit was traveling through

These, and other observations help to paint a picture of 'smart white men' and 'dumb Indians'. Francis' accounts in *The Imaginary Indian* note this was a common depiction and perspective at the time.

¹²⁷ Krueger, et al. Reverend T.P.W. Thorman ran the mission in the following time periods: 1901-1903 and 1910-1912. His son Reverend F.P. Thorman followed in his footsteps in 1912-1915 and 1918-1924; his other son Reverend W.P. Thorman from 1933-1952.

¹²⁸ This sentiment is echoed in Albright's 1984 study.

¹²⁹ Paul Tennant, "The Indian Land Question in British Columbia: A Chronology" University of British Columbia website. 4 May 2002.

<<http://foundations.arts.ubc.ca/PaulsTalks/>> Treaty 8 extended to BC, but was not enforced until the Canadian government unilaterally extended it in 1899.

BC in the early 1900s and began his assistance regarding land claims with the N'laka'pmx in Spences Bridge before he worked with the Tahltans. It was after he showed the declaration made by the N'laka'pmx to Tahltans that they followed suit. News spread too, either through Teit or other means (trading, etc.), of land claims movements among other tribes throughout BC. And the preamble to the Declaration sets the "agitation" described by Reverend Thorman in context:

"...We have heard of the Indian Rights movement among the Indian tribes of the Coast, and of the southern interior of BC. Also, we have read the Declaration made by the chiefs of the southern interior tribes at Spences Bridge on the 16th July last, and we hereby declare our complete agreement with the demands of same, and with the position taken by the said chiefs, and their people on all questions stated in the said Declaration, and we furthermore, make known, that it is our desire and intention to join with them in the fight for our mutual rights..."

According to BC Historian and Scholar Paul Tennant, the movement toward aboriginal rights had begun in the mid-1800s, years before the Tahltans entered the fray. According to Tennant's analysis, while the directions from London regarding treaties were clear, the governors of British Columbia had differing views on the subject of Indian title enacting a variation of policy that ranged from Governor Douglas's approach of "Indian assimilation, but with dignity and equality" to Governor Joseph Trutch's official denial of any title and reduction of reserve size to ten acres per Indian family (making British Columbia reserves the smallest in Canada).¹³⁰ BC joined Canada in 1871 with the help of Trutch, and federal officials assumed that transference of title through treaties had taken place.¹³¹ Three years later, and upon discovery otherwise, Ottawa attempted to mildly intervene by recommending their much larger standard of reserve land allotment be implemented, but BC's government refused. What followed were years of lobbying and protest by many tribes throughout BC who watched their lands be settled or confiscated. Government tactics ensued to ensure an Indian rebellion did not occur (though a series of pacifying enquiries), and most importantly, to protect the now successfully entrenched publicly-held *idea* that Indians did not have any rights to

¹³⁰ Tennant, "The Indian Land Question in British Columbia: A Chronology," and Paul Tennant, *Aboriginal Peoples and Policies: The Indian Land Question in British Columbia, 1849–1989* (Vancouver: UBC Press, 1990). Governor Douglas was in power until he retired in 1864. The original 14 treaties are named after him. Governor Joseph Trutch assumed control after Douglas and was the first official to deny the existence of aboriginal title. In 1870, he "revised" BC history turning the Douglas treaties into "mere friendship pacts." Indians lost the right to vote in BC elections in 1872, and did not regain it again until 1947.

¹³¹ *Ibid.* The terms of the agreement with Canada noted that "reserve policy" would be in effect, meaning eighty acres per family.

the land title.¹³² Any tribal leaders who did proceed through the system were branded “simple-minded tools of white agitators.” This was the climate the Tahltan *Declaration* entered in 1910, and as a result, hardly anyone in Victoria or Ottawa seems to have taken specific notice of it. It was Reverend Thorman who reported that he found the attitudes and the protest an annoyance. His proximity to the Tahltans and the nature of his work prevented him from ignoring their perspectives.

INDIAN AFFAIRS: ASSIMILATION BY ADMINISTRATION

The BC Government’s policy on treaty-making was not the only distant abstraction that is addressed in the Declaration. In chapter two, I noted the way in which reserves were drawn up without the involvement of Tahltans and their address of that issue in the Declaration. What this signals is the beginning of a regime of power that continues to affect the daily lives of Tahltans and Indians throughout Canada. *The Indian Act* is federal legislation that was enacted in 1867 bringing into existence the Department of Indian Affairs (now called Indian and Northern Affairs Canada or INAC). In *The Imaginary Indian: The Image of the Indian in Canadian Culture*, Historian/Author Daniel Francis points out that once Indian allies had outlived their military usefulness, “Officials began to think in terms of civilizing the Indians so that they might assume a role in mainstream Canadian society.” According to Francis, this was seen as an alternative to extermination and/or the costly American Indian Wars. *The Indian Act* became a far-reaching tool of control and individualization turning Indians into wards of the state until so educated and/or civilized so as to be enfranchised as true citizens of Canada.¹³³ Indians were given a stop-gap to citizenship, “Indian status” that “protected” them from the ‘ills of white men’: prevented them from voting, buying land, buying liquor, and forced them from a nomadic or semi-nomadic lifestyle on to reserves where in some cases, a pass system was enacted for certain periods of time. Tribes were split into “bands” of Indians to better supervise, and repress any organized uprisings. An ‘Indian

¹³² Ibid. Earlier the idea that land should be purchased from Indians was taken for granted. After the Douglas Treaties in 1850, Tennant’s timeline entry for 1856-64 notes: “White public opinion accepts pre-existing Indian ownership and supports more purchases. [Vancouver] Island Assembly urges Douglas to purchase remaining Indian lands and allocates money for the purpose.” By 1870, following Trutch becoming governor, Tennant’s timeline states: “Whites now view Indians as having been primitive nomads and assume BC to have been an empty land until discovered by Whites.”

¹³³ Daniel Francis, *The Imaginary Indian: The Image of the Indian in Canadian Culture* (Vancouver: Arsenal Pulp Press, 1992), p. 200-205. Francis points out that this is theoretically different than segregation or Apartheid. The mechanisms were instead a means to an end, which was “civilization” or more precisely, the ability to assimilate into mainstream Canada.

Agent' was required to supervise these repressive control mechanisms.¹³⁴ And as a part of speeding up the process of assimilation through the Act, children were forced into religious residential schools as early as 1880. As a result of these past and continuing practices, an entire new lexicon for determining the entities of aboriginal people and organizations recognized under law and policy has been developed.¹³⁵

Tahltans make up two of the 609 bands governed by *The Indian Act*.¹³⁶ Tahltans were originally given eleven reserves by the federal government -- many of them were abandoned or are occupied seasonally due to lack of road access or lack of service availability -- three to four, as described in chapter two, are in constant use today. During the tumultuous years following the gold rushes and repeated epidemics, some Tahltans were enfranchised, others married outside the Tribe, and still others continued to trap and live outside the system.¹³⁷ Compared to some accounts of assimilation tactics, the Tahltan situation was less stringent. One could speculate that this was due to lax bureaucracy, but given other accounts, its more likely due to the remote location of the Stikine and low population numbers. What did (and does) keenly affect Tahltans was the residential school policy. Its not clear from printed documents when Tahltan children began to be removed from their homes to attend residential schools, but enforcement laws were added to *The Indian Act* in the 1920s and 1930s that jailed and fined parents who kept or hid their children instead of sending them to residential schools. Certainly, following the closure of the Indian day school at the Tahltan mission in 1916, children began to attend schools in Lower Post and Whitehorse, Yukon, as well as schools further south. In the *Handbook for Aboriginal Language Program Planning in British Columbia* by Dr. Marianne Ignace, she recounts some of the injustice delivered by these institutions:

“In the recollection of Aboriginal elders and adults throughout Canada, Residential Schools set to stamp out Aboriginal languages; children had their Aboriginal languages literally beaten out of them. Many elders remember being strapped, put in solitary confinement, convicted to do physical labour, and being

¹³⁴ Francis, p. 61-82. Bureaucrats were duly hired and sent out by Ottawa to enforce policy with the help of the Royal Canadian Mounted Police (RCMP). Francis provides more insight on the role of the RCMP.

¹³⁵ “Definition of Aboriginal Terms,” Aboriginal Affairs, Province of Nova Scotia website, 13 May 2002 < <http://www.gov.ns.ca/abor/content/gloss.htm>>. This is a comprehensive list of all terms related legally and otherwise to aboriginal issues.

¹³⁶ I am using a current figure for the number of Indian bands in Canada. Earlier, the numbers may have been different due to amalgamations, disease, populations shifts, etc.

¹³⁷ Albright, pp.20-21. Albright notes that trapping for sustenance was ongoing until recently. Fishing continues. *The Indian Act's* amendment called Bill C-31 returned Indian status to women and children of women who had married non-Indians. It also returned status to anyone who chose to be “enfranchised”. This amendment passed as a result of an appeal to the UN on the basis of human rights and swelled the numbers of registered Tahltans.

humiliated, chastised, and shamed by their teachers and principals for speaking their language in the School. Some went to Residential School for 10 years, being admitted at five or six years of age.”¹³⁸

These schools were nearly exclusively run in partnership with major Christian religious denominations.¹³⁹ The stories of abuse at the hands of religious instructors are nearly ubiquitous in Canada spurring many lawsuits, and the creation of the federally funded \$350 million (CDN) Aboriginal Healing Foundation in 1998.¹⁴⁰ As a rough estimate, Tahltan people between the ages of 45 and 65 most likely attended a residential school and their impact is felt strongly in terms of loss of language and personal histories.¹⁴¹

From continuous denial of valid land claims to the policies promulgated from *The Indian Act*, the tactics of assimilation of Indians into white Canadian culture lasted until the 1970s. Since this time, a policy of “integration” has emerged as Canada has moved towards a more multi-cultural image of itself as a whole.¹⁴² And with the new image and policy has come a new way of administering aboriginal people, funds are transferred to elected aboriginal officials called Band Chiefs and Councils who in turn administer the funds for their constituents.¹⁴³ The Canadian and BC Governments have entered into a

¹³⁸ Maryanne Ignace, “Handbook for Aboriginal Language Program Planning in British Columbia,” a report prepared for the First Nations Education Steering Committee, Aboriginal Language Sub-Committee, Education Steering Committee. Canada’s School Net. 5 May 2002, Canada’s SchoolNet<<http://www.schoolnet.ca/aboriginal/fnesc/part02-1-e.html>>, part two.

¹³⁹ Ignace, part two. Most schools remained in operation until the mid-1970s with the final school closure occurring in 1996.

¹⁴⁰ “Backgrounder – The Residential School,” Indian and Northern Affairs Canada. 5 May 2002, <http://www.ainc-inac.gc.ca/gs/pth_e.html>. Monetary figure taken from Indian and Northern Affairs Canada’s website. The Fund is meant to promote programs for healing from abuse.

¹⁴¹ Amy Steele, “Abuse Victims settle out of court with government, church.” *Yukon News*, 14 December 1998. A 1996 lawsuit by a group of 12 men that included a member of the Tahltan Nation was settled out of court in 1998 for the abuse they suffered at the Roman Catholic Church-run Lower Post Residential School between 1951 and 1966.

¹⁴² Francis, p. 217-218.

¹⁴³ Paul Barnsley, “Cree chief slams Gathering Strength,” *Windspeaker News*, January 1999, The Aboriginal Multimedia Society, 5 May 2002. <<http://www.ammsa.com/windspeaker/WINDNEWSJAN99.html>> And “The Department of Indian Affairs and Northern Development,” December 1997, Indian and Northern Affairs website, 5 May 2002. <http://www.ainc-inac.gc.ca/pr/info/info108_e.html> INAC’s information sheets depict their history as such: “Over the years, the role of the Department of Indian Affairs and Northern Development (DIAND) has evolved to keep pace with changes in the situation of the people it serves. First Nations are increasingly taking charge of the services and programs

tripartite treaty process to resolve outstanding land claims issues in BC that is currently stalled, but it can be seen as a 'modern' start at redressing past injustice.¹⁴⁴ Despite these changes, Canada still has a long ways to go towards developing a new relationship with aboriginal people. Poverty, unemployment, rampant substance abuse, and other social ills are prevalent on reserves across Canada. Many blame the polices and injustices of the past century for the current state in 'Indian country.'

Since 1976, Canada, a signatory nation to the International Covenant on Economic, Social and Cultural Rights has been evaluated by a UN panel of human rights experts and judges every five years for its progress in implementing the treaty. At the last examination in 1999, and after three weeks of hearings, the panel told Canada to "get serious about protecting the human rights of Indigenous people who live within its borders," and named several areas in which they could improve ranging from aboriginal title issues to poverty alleviation.¹⁴⁵ Then Grand Chief of the Grand Council of Crees and current National Chief of the Assembly of First Nations Matthew Coon Come had this to say in response to the UN's findings:

"The acute situation in Canada has now been authoritatively characterized in a meaningful and accurate way: there is, to quote the UN committee, a 'gross disparity between Aboriginal people and the majority of Canadians with respect to enjoyment of covenant rights.' Aboriginal people did not need a UN committee of judges and experts to know that our human rights were being violated. But we

that the department once managed... Today, the department is becoming much more of an advisory, funding, and supportive agency in its relations with First Nations, Inuit and northerners." This however is not seen as a completely beneficial change. In an interview in 1999, then Grand Chief of the Grand Council of the Crees Matthew Coon Come had this to say: "I challenge any First Nation that says it has self government," he said. "If you're administering a federal program, you're just an extension of the federal government - you're administering your own poverty. The government must act on the RCAP [Royal Commission on Aboriginal Peoples] recommendations on the redistribution of natural resources. We need real partnerships, real joint ventures. I don't see a signal that there is any change in the treatment of Indigenous peoples in Canada. I see the status quo and our communities are social time bombs." Coon Come has since been elected National Chief of the Assembly of First Nations.

¹⁴⁴ "Fact Sheet: The Nisga'a Treaty," Indian and Northern Affairs Canada website, 13 May 2002 <http://www.ainc-inac.gc.ca/pr/info/nit_e.html>. Only one treaty has been signed as a result of the BC Treaty Process: the Nisga'a Treaty. The Nisga'a share a traditional border with the Tahltans and are located to the south and west of the Stikine Region, near the headwaters of the Stikine River.

¹⁴⁵ Paul Barnsley, "UN committee criticizes Canada," *Windspeaker News*, January 1999, The Aboriginal Multimedia Society, 5 May 2002. <http://www.ammsa.com/windspeaker/WINDNEWSJAN99.html>

did need such a committee to point this out to federal and provincial governments in Canada.”¹⁴⁶

The devastating nature of external governmental actions that remade a way of life, a people, and a people’s self-image can be seen as a two way process where Canada’s policies tried to remake aboriginal peoples, and now aboriginal people are, in a way, remaking Canada and Canadian self-images by forcing acknowledgement and resolution to outstanding land claims and embarrassing Canada on world platforms like that provided by involvement with the UN.¹⁴⁷ Too, the abstract nature of this relationship can be framed as a two-dimensional impression of an “other”. Much has been written about the way indigenous people have been depicted, but much could also be written about the way in which indigenous people’s perceptions of administrative forces have shifted in terms of the kinds of control exercised in their daily lives, and over the landscape that is both their home and sustenance. The latter can be seen distinctly in the words, tactics, and profile garnered by Chief Coon Come.

DIAGRAMMING DISTANCE AND ABSTRACTION

The challenge for the assemblage to depict these relations between distant policy makers who, in most cases, have an abstract concept of the Tahltan people and the Stikine area and the Tahltan people who are both administrators by extension or residents living with this administration. Together with the broader context of situational disparity and repressive government policies, these become interconnecting factors in understanding the Stikine area -- both the way people have shaped the landscape and each other, and the way the landscape has shaped administrative mechanisms and decisions about land use. The historical and uneven archive of media, discourse, and other forms of knowledge situated in relations of power and mechanisms of control inform the approaches to land use planning and perspectives about development, title to the land, and local governance.

In the social diagram and the two-windowed interfaces, I have chosen to use an interconnecting montage of images, text, and analysis that spans time and geographic space. The images reflect historical modes of depiction and layers of cultural interpretations, but it is the text and analysis, which provides contextual grounding in which to understand how and what the images represent. Each issue surrounding assimilation tactics can and does become an assemblage within itself connecting to a greater assemblage.¹⁴⁸ This connection to the whole can be seen in the social diagram interface most clearly where the distance between geographic places collapses and a new abstract topography emerges diagramming administrative lines of power, flight, and

¹⁴⁶ Barnsley, “Cree chief slams Gathering Strength.”

¹⁴⁶ Ibid.

¹⁴⁸ Deleuze and Guattari, pp. 7-8.

reterritorialization that have occurred and recurred. While these linkages are not explicitly defined as such, the visualization of connections stands as a mode of inquiry and analysis that invites exploration on the part of the user. Once a user moves through the social diagram to the two-windowed interface, the depth of these connections may take on new conceptual forms through a deeper experience with the materials available.

In the Stikine area, Tahltans have historically been the most affected by government policy and mechanisms implemented through Indian Affairs, but all residents and together, their collective relationship with the land have also been affected by policies enacted from a distance. Currently, there are twelve provincial and federal departments (including crown corporations) that exercise some jurisdiction over or interest in the landscape: Indian and Northern Affairs Canada, BC Ministry of Aboriginal Affairs, BC Ministry of Forests, BC Ministry of Water, Land and Air Protection, BC Ministry of Sustainable Resource Management, BC Hydro, BC Rail, Department of Fisheries and Oceans Canada, BC Ministry of Energy and Mines, BC Ministry of Small Business, Tourism and Culture, BC Ministry of Transportation, Royal Canadian Mounted Police. Returning to the Foucauldian framework I set out in the introduction, it is not difficult to see the ways in which these mechanisms added together become a panoptic system on which the state apparatus can rest.¹⁴⁹ Even as the mechanisms of Indian Affairs can be divided into smaller assemblages that interconnect to create the larger, the same can be said about this interconnection of provincial and federal departments that have separate overlapping areas of administration, and whose data sets reflect the specificity of their task rather than their interrelation with other subject areas. These administrative mechanisms are not only designed to control the masses, but they also enable administration to be enacted from a distance through local techniques.¹⁵⁰ Foucault's analysis in *Discipline and Punish* elucidates changes wrought by these kinds of policies and mechanisms in the prison system:

“... It is because they have been conveyed by a specific and new modality of power; a certain policy of the body, a certain way of rendering the group of men docile and useful. This policy required the involvement of definite relations of knowledge in relations of power; it called for a technique of overlapping subjection and objectification; it brought with it new procedures of individualization.”¹⁵¹

This analysis could also be applied to policies of *The Indian Act*, which established administrative mechanisms for defining and enforcing individualization. Overlapping categories of data and specialized units for the rendering of policy define this administrative regime, and it can be contended that this mode of infrastructure defines all

¹⁴⁹ Foucault, *Power/Knowledge*, p. 71. “By the term ‘panoptism’, I have in mind an ensemble of mechanisms brought into play in all the clusters of procedures used by power.”

¹⁵⁰ Crary, *Techniques of the Observer*, p.15.

¹⁵¹ Foucault, *Discipline and Punish*, p. 305.

of the institutions of bureaucracy that control relations of knowledge, power and perception. These institutions and their assemblages interconnect on the level of issues, data, and entity. In the social diagramming interface, I have chosen to make connections between these three in a search for knowledge shaping the relations of power, and the production of knowledge through relations of power and discourse.

How to conceive of an assemblage that moves through and beyond the categories and boundaries put in place by mounds of bureaucratic data is one of the enabling tasks of design. I cannot and do not want to re-create whole integrated data sets. The assemblage is less about data compilation, than it is about diagramming a modulated reintegration, and visualizing these connections for conceptual analysis on the part of the user. Reintegration in this assemblage is not about a seamless image of perfection, but it is about the display of ruptures, breaks, overlaps – more closely adhering to Benjamin’s ideal of montage, and a new archive that avoids historical materialism by providing a multiplicity of voices, perspectives, and data. In other words, there is not just one thread of history controlled by a “puppet master,” rather there are multiple threads rhizomatically interacting with one another.¹⁵² Under this definition of reintegration, the social diagram interface performs two distinct tasks. By providing multiplicities of images, text and icons that distinguish different representations of issues and entities, the interface provides visible comparison and juxtaposition of data, and most importantly, a simultaneous view of the flows and links between issues and entities.¹⁵³ This overview is then made more explicit by adding “roll-over” functionality that allows for brief descriptions of what the symbolic representation depicts, and a kind of annotation that allows the user to surf the social diagram intelligently (rather than making too many assumptions about their previous knowledge of the representations).

This description conforms somewhat to another iteration of Benjamin’s montage techniques -- Tufte’s idea of a visual “confection,” which he defines as:

“...An assembly of many visual events, selected... then brought together and juxtaposed on the still flatland of paper. By means of a multiplicity of image-events, confections illustrate an argument, present and enforce visual comparisons, combine the real and the imagined, and tell us yet another story.”¹⁵⁴

As Tufte continues his explication of the confection, he moves into computer assemblies which allows “the information to become the interface” serving up multiple options at once “distributing the information in space rather than in time.”¹⁵⁵ The social diagram

¹⁵² Walter Benjamin, *Illuminations*, trans. Harry Zohn. (New York: Schocken Books, 1968), pp. 253-264.

¹⁵³ Edward Tufte, *Visual Explanations: Images and Quantities, Evidence and Narrative*. (Cheshire, Connecticut: Graphics Press, 1997), p.110

¹⁵⁴ *Ibid*, p.12.

¹⁵⁵ *Ibid*, p. 146.

tells stories in several layers of representation, and through evoking rhizomatic connections. The use of digital space allows for this emphasis on layout for knowledge transmission and the process of discovery (often what is referred to in the use of the term: interactivity). The roll-over functionality adds another layer beyond even what Tufte's confection offers. In short, it is meant to "feed the visual imagination" through the suggestion of what lies behind symbolic representation.¹⁵⁶ In *Mapping Websites*, which perhaps advocates a more commercial, code-based approach to the creation of interfaces and mapping of digital space, they note in reference to maps, "... we have developed many visual conventions to transfer our experience of the real world into codes that fit conveniently onto paper...such conventions are an agreement between the designer and the viewer."¹⁵⁷ An agreement with the user, as opposed to resistance is what I am hoping to achieve by creating an abstract space and several different interfaces, reflecting different modes of inquiry into a landscape. It is not diagram for the purpose of utility, rather it is an engagement of curiosity and an exercise of theory in practice.

By invoking the frameworks of Foucault, Deleuze and Guattari, and Crary, among others, I am attempting to break out of conventional modes of analysis and representation of bureaucratic data. This depiction of political and social realities takes the form of easily dissolved unions of fragments, and multiple options for future temporary unions of fragments. The necessary similarities to non-linear narratives such as a hypertext document exist, as does its proximity in approach to the environmental analysis of writers like Mike Davis whose history of Los Angeles in the *Ecology of Fear* is implicitly fragmentary. In this text, Davis offers pieces of data and analysis related to many facets of human interaction with the landscape in hopes of highlighting the way administrative practices overlook the essential nature of the cataclysmic processes that shape Los Angeles.¹⁵⁸ This essence of a whole in parts, fragments, multiple perspectives is what the assemblage attempts to offer to a user who is willing to engage with the material through mouse movements, and drilling through layers to create their own conceptual maps. The social diagram interface, though it provides some information at a glance, is not a document of efficiency or encapsulation. It is, like the geographic depictions or the two-windowed interface, yet another point of departure into a vast sea of rhizomatic relations of power, knowledge and discourse.

THE GOLDEN TRIANGLE: LAND, RESOURCES, AND PEOPLE'S PLANS

The Tahltan Nation was one of the first to join the BC Treaty process at its inception in 1992, but in 1994, Tahltans withdrew from the process and have not

¹⁵⁶ Paul Kahn and Krzysztof Lenk, *Mapping Web Sites* (Netherlands and Belgium: BIS Publishers, 2001), p.17.

¹⁵⁷ Ibid, p.20.

¹⁵⁸ Mike Davis, *Ecology of Fear: Los Angeles and the Imagination of Disaster* (New York : Metropolitan Books, 1998).

returned. The assessment of the process by Tahltan leadership was summed up in a recent newspaper interview with Senior Land Use Manager Brad Nothstein who stated:

“The Tahltan assessment is that the treaty process is flawed... Consequently, we’re taking an interim measures approach as opposed to waiting for closure and a final treaty agreement. That allows business to carry on without feeling like you’re missing the boat.”¹⁵⁹

In fact, though the treaty process is operational, it is under immense scrutiny at present as the newly elected provincial government, in a move harkening back to the 1870s has put a referendum out to the general public asking them to vote on whether actions on land claims should continue. This, despite, the fact that the Supreme Court of Canada legally affirmed the existence of aboriginal title in 1997 requiring some redress to clear the title to land in BC.

In lieu of the treaty process, and without prejudice to any future treaty negotiations, the Tahltans began to engage in 1997 in the LRMP process. According to the government website, the definition is as follows:

“Land and Resource Management Planning is an integrated, sub-regional, consensus building process that produces a Land and Resource Management Plan for review and approval by government. The plan establishes direction for land use and specifies broad resource management objectives and strategies.”¹⁶⁰

The LRMP covers a sub-regional area and fits into a greater regional plan. The LRMP “table,” a term used colloquially and borrowed from treaty negotiations, is comprised of representatives from major stakeholder groups and is supposed to proceed through a consensus-based nine-step process over the course of 18-24 months.¹⁶¹ According to guiding principle documents, the planning process “...considers all resource values and requires public participation, interagency co-ordination and consensus based land and resource management decisions.” The BC government’s role is to provide assistance, facilitation, and technical data as required to reach a consensus. The eventual plan is forwarded through an “interagency management team” comprised of Assistant Deputy Ministers. Next, it proceeds to pertinent Deputy Ministers, and for final

¹⁵⁹ Mulgrew, p. D2.

¹⁶⁰ “Land and Resource Management Planning: A Statement of Principles and Process,” 1st ed., BC Ministry of Sustainable Resource Management website 13 May 2002 <<http://www.luco.gov.bc.ca/lrmp/stmt.htm>>.

¹⁶¹ Ibid. The LRMP process steps are accompanied by planning products which are as follows: 1) Preliminary organization resulting in an “Agreement to do plan”, 2) Plan initiation resulting in “Terms of reference”, 3) Information Assembly resulting in “Resource Information Reports”, 4) Scenario Development, 5) Building and Agreement resulting in a “Consensus report or option report”, 6) Approval resulting in a “Final plan”, 7) Implementation, 8) Monitoring and review, and 9) Amendments.

approval, it is sent to the Minister of Energy, Mines and Petroleum Resources, the Minister of Environment, Lands and Parks and the Minister of Forests. Other ministers whose portfolio may be affected are also invited to join the approval process.

Without any degree of certainty that the plan would be approved and while the process was still new, Tahltans and other stakeholders in the Stikine watershed entered the planning process. The first step was to change the name of the LRMP from Cassiar Stikine to Cassiar Iskut-Stikine to acknowledge the Iskut River, the most powerful tributary of the Stikine and an important river in its own right.¹⁶² The appointed stakeholder representatives ranged from official to non-official interest groups: Tahltan representatives, BC government representatives, tourism-oriented small business operators including guide outfitters, mining corporation representatives, mining industry representatives (who later left), local residents, conservation organization representatives, commercial fishery representatives, and other intermittent participants from the federal government and other entities. The planning progressed through nine stages via a series of workshops and periodic public consultations. Public consultation in the Cassiar Iskut-Stikine LRMP was defined by opening up sessions to those beyond appointed representatives of stakeholders.¹⁶³ As Friends of the Stikine Executive Director Gil Arnold tells it, what followed was more of a bureaucratic process than they expected:

“It was a little dismaying because there was a lot of planning language, there was a lot of process that we were expected to master and you have to admit that stuff is pretty shockingly dull to the average person. But we stuck with it - - we got engaged. Lots of local people [were there] -- The Tahltan First Nation provided a lot of leadership, a lot of resource, a lot of useful data.”¹⁶⁴

The Tahltans were one of the few First Nations to embrace the LRMP process.¹⁶⁵ Despite repeated assurances of non-prejudice of land claims, many First Nations were hesitant to test the waters, and/or had maximized their own human and financial resources addressing requirements for the BC Treaty Process. The process lasted from February 1997 until March 2000. The Cassiar Iskut-Stikine LRMP was approved in October 2000, and included most notably, plans to protect 450,000 hectares of land.

¹⁶² Tom Soehl, “Cassiar Iskut-Stikine Land and Resource Management Plan Newsletter,” Issue 3, May 1997, Cassiar Iskut-Stikine Management Plan, BC Ministry of Sustainable Resource Management website

<<http://www.luco.gov.bc.ca/lrmp/cassiar/newsletter/news3.htm>>.

¹⁶³ Ibid. In the case of the Stikine, issues were also made public through a website that collected minutes from workshops, and irregular newsletters which provide a record of between one and six month blocks of negotiations.

¹⁶⁴ Personal Interview with Gil Arnold, Executive Director of Friends of the Stikine, March 2002.

¹⁶⁵ Soehl, “Newsletter”.

INSIDE THE GOLDEN TRIANGLE: FAIR REPRESENTATION

One of the key issues in the process was fair representation of interests through regular attendance by a core group of representatives with various goals ranging from development to environmental protection. In my interview with Arnold, he said he was the only conservation organization at the table, but that representation was fair because of a general conservation ethic:

“...There were a lot of conservationists at the table. What we’ve learned from our polling is that we’re everywhere and we found a lot of kindred spirits in the negotiations and probably that’s why the people of the region have decided to live with so much of their land in park.”¹⁶⁶

The final plan’s protected area far exceeded anything that might have been realistically achieved independently by Friends of the Stikine. The park status covers Site Z where BC Hydro had planned to build a dam in the 1980s, a conservation battle referenced in chapter one. Arnold also said he felt he represented a world environmental viewpoint that was appreciated and needed for the task of local planning.

Mining organizations, corporations and government representatives working in the mining sector felt differently about representation issues. BC and Yukon Chamber of Mines representatives left the negotiating table just as the Friends of the Stikine representative was returning from their enforced hiatus (described in chapter two). Bruce McKnight said he was dismayed both by the lack of mining representation, and the lack of understanding of what was required to explore and create a mine.¹⁶⁷ Despite this, Marlin Murphy, the representative for Homestake (now Barrick Gold), operator of Eskay Creek gold mine decided to stay in the process. In an interview earlier this year, Murphy defined why Homestake had originally decided to become involved.

“Homestake felt that because of our interest in the area, our claims, our explorations, and the mining operation that we felt we had to have our fingers on at least knowing what was happening and what was going to potentially be a park that could prevent access or prevent exploration in areas of our interest. So we wanted to be at the table and let everybody know our point of view and our concerns and interests.”

And Homestake stayed involved, but was disappointed by the representation at the table as a whole.

¹⁶⁶ Personal Interview with Gil Arnold, Executive Director of Friends of the Stikine, March 2002.

¹⁶⁷ Personal Interview with Bruce McKnight, Executive Director of BC and Yukon Chamber of Mines, March 2002.

“I feel there should have been more representatives from the mining community at the table. It was heavily I thought weighted with environmental groups who were being funded by the government to be there. We were often outnumbered.”¹⁶⁸

So while Gil Arnold saw himself as the only official conservation group at the table, Murphy felt outnumbered by conservation organizations. It is unclear whether this is an issue of perception, public relations, sentiment, or fact. It seems the one thing that all parties agree on was the positive presence of the Tahltan First Nations. Murphy continued to explain:

“The one saving grace was the representation from the Tahltan First Nations. The Tahltan First Nation appeared to me very progressive and wanting jobs, and not wanting jobs at the expense of the environment. And by the way, we don’t want mines at the expense of the environment either. We want to protect the environment too, but I think if it wasn’t for the representation by the Tahltans, we would’ve seen a lot greater the area put into parks and prevent areas being developed and jobs being created, etc.”¹⁶⁹

Tahltan LRMP Coordinator Glenda Ferris put it much more bluntly when she was interviewed following the announcements of the proposed park areas: “For the least amount of hectares that we could figure out, we got the most ecological bang for the buck.”¹⁷⁰

Ferris’ statement typifies the Tahltan’s pragmatic stance in the midst of an onslaught of development that has primarily been in mining, but will also extend into forestry issues in the years to come.¹⁷¹ Unemployment rates in the Stikine area for Tahltans has been estimated at 80-90%. Prior to Homestake’s Eskay Creek, Golden Bear Mine and Cassiar Asbestos mines were the closest major sources of employment. Cassiar shut down in 1992, and Golden Bear shut down in 2001. Though relations with Golden Bear have not always been amicable – a protest closed the access road in the early 1990s – Tahltan administration’s relationship with corporations has generally been exemplary from the mining association’s point of view. As Chief Tashoots told a newspaper reporter earlier this year: “We have a great relationship with the mining companies – its not a

¹⁶⁸ Personal Interview with Marlin Murphy, Environmental Manager, Eskay Creek Mine, Barrick Gold Corporation, March 2002.

¹⁶⁹ Ibid.

¹⁷⁰ McInnes, p.B6.

¹⁷¹ Larry Pynn, “Indian band split by proposal to log near endangered river,” *Vancouver Sun*, 3 May 1995, p. B3. And Ann Pritchard, “Outsiders Stay Away” *Yukon News*, 21 April 1995. Previous attempts were curtailed by protest from within the Tahltan Nation, specifically an Urban Tahltan Association and evidently, environmental groups who questioned the wisdom of logging traditional territories. It will be interesting to see how future plans for logging develop.

hidden secret.” So great in fact, that Tahltans are being held up as the model for doing mining business with First Nations.¹⁷² As Ferris explains in a case study on Tahltan relationships with mining companies:

“ The Tahltan approach to mining has been pragmatic and consistent. The Tahltan have based all their decisions and negotiations on a set of Tahltan Development Principles established in the 1980’s. These development principles stated the Tahltan fully intend to have substantive participation in the development of natural resources within their territory, without adversely affecting the environment and other land values which significantly define their aboriginal rights traditional use of the land.”¹⁷³

This approach coincided with a political restructuring within the Tahltan Nation that saw all three communities’ band chiefs become involved through Joint Council of Band Chiefs and Councillors from Telegraph Creek/Dease Lake and Iskut. According to Ferris, a Tahltan Advisory Group on Mining keeps stays up to date on the mining developments, and reports regularly to the Joint Council. From a critical standpoint, involvement with the mining industry has not progressed to profit sharing, or acknowledgement of non-surrendered land title through compensation for land used in the mining process. If ownership of the land does belong to the Tahltans, then its conceivable that these mines should be paying a sum either for lease of the lands, and for extraction of a non-renewable resource – instead, this land is considered Crown land and these sums are paid to the BC or federal governments. That acknowledged, the level of involvement in planning, knowledge sharing and employment stands out as a different approach when compared to other examples in BC of stalemates over development and title issues. This in concert with a well received highly conservationist LRMP reveals an underlying tactic of achieving the somewhat oppositional perception of being both pro-environment and pro-development.

At the heart of title and development issues is a negotiation over value assessment of the land, and temporality of plans. Environmental values have earlier been covered in chapter two. Tahltan pragmatism regarding development, employment and environmental issues seems clear. And mining companies also aspire to capitalist oriented pragmatism when addressing issues within the ‘golden triangle’. But perhaps, one of the more interesting roles is that of the government. In an interview with Graeme McLaren, a representative of the newly created Ministry of Sustainable Resource Management who was formerly of the BC Ministry of Mines, he stated his goal clearly: “...Our goal was to try and get positive message out that BC is a good place to invest in

¹⁷² Mulgrew, p.D2.

¹⁷³ Glenda Ferris and Brad Nothstein, “Case Study #3: Tahltan First Nation, The Mining Industry, and Environmental Assessment” in *Aboriginal Peoples and Mining in Canada: Six Case Studies*, ed. Christine Cleghorn, September 1999, MiningWatch Canada, 13 May 2002. < http://www.miningwatch.ca/aboriginal%20gathering/Case_Studies.html>

exploration...¹⁷⁴ This overall concern for the BC economy, rather than the specificity of a region's balance, is what could curtail the longevity of the LRMP.¹⁷⁵ Mining is, by all accounts, still somewhat of an inexact science, and if lands becomes protected, exploration and therefore, mining is prevented. McLaren therefore advocates a less restrictive environment so as to preserve a hot investment climate for mining:

“The mining industry has a choice of Chile or here. If our restrictions go too high, then that money goes to Chile. That doesn't mean that we need to lower our environmental standards.”

McLaren and his colleagues had threatened to recommend a non-accept by their Minister at one stage in the LMRP because they felt that too much land was being protected, and several other unnecessary restrictions could send the “wrong message to industry.” A compromise was eventually reached, but McLaren still sees the Cassiar Iskut-Stikine LRMP as a problematic agreement simply because mining interests were not, in his estimation, well represented.

These various positions on the LRMP are depicted through a series of interviews in the two-windowed interface and via iconic representation and linkages in the social diagram. It is impossible to discuss land issues without invoking some aspect of the LRMP process, its results and perceived flaws. I have not dealt in my textual analysis with fishing, hunting, recreation, or other related land use issues that are a part of the LRMP. The assemblage, however, contains interviews and perspectives that do address these issues in concert with the substantial spectrum of perspectives on mining issues. Where representation of the LRMP may falter is in limited presentation of textual documents. The assemblage is a visually driven conceptual tool, and even the incomplete data set I have acquired on the LRMP consists of copious websites, planning documents and integrated technical data. The LRMP may be one of the first attempts at combining the data and specialization enacted by various governments into a whole. However, it still lacks some of the organic presentation and wide-ranging voice that can be represented through a digital assemblage. By making the assemblage a non-extension of the LRMP, it also allows for a deeper analysis of the mechanisms of administration and power inherent in this process.

¹⁷⁴ Personal Interview with Graeme McLaren, BC Ministry of Sustainable Resource Management, February 2002. The BC Government recently divided what was formerly the Ministry of Environment into two departments: Ministry of Water, Land and Air Protection and Ministry of Sustainable Resource Management. One has to wonder whether the two goals embodied in the new department names (i.e. sustainability and protection) were deemed incompatible.

¹⁷⁵ This concern was expressed in numerous interviews, and on all sides of the mining debates.

V. CONCLUSION: DIAGRAMMING IN DIGITAL SPACE

“This land represents the future for our children’s children – in other words – this land is our life, not a ‘land management unit’.”

- Excerpt from a statement by the Tahltan First Nation at the first LRMP workshop¹⁷⁶

Following a mode of inquiry that uses landscape as a condition for relating factors of knowledge, discourse, and power, this thesis project has set out to understand the landscape of the Stikine Watershed through varied perspectives and heterogeneous data sets. The written investigation and interrogation of the assemblage in the preceding chapters provides a kind of designer’s manual for understanding the ways theory, history, and practice interact to create a conceptual foundation for the built digital assemblage. Utilizing the theoretical constructs of Foucault, Deleuze, Crary, White, Benjamin, and others, the preceding chapters contain narrative trajectories through issues, data, and questions of design and interface as they relate to the built digital assemblage.

The built assemblage attempts to represent and experiment with multiple perspectives about land and land use through a rhizomatic framework of linkages between heterogeneous data, both in terms of form and content. The resulting fragmented archive diagrams relations between humanity and nature by making visible the links between administrative regimes, natural landscape factors, indigenous human populations, and those who have settled in the area during the tumultuous nearly two hundred-year history of direct and indirect contact with Europeans. Underlying this is an argument that supports a chaotic, organic representation of a whole through the visualized re-integration of fragmentary data, and the assumption that the history of humanity and nature are intertwined and inseparable.

Choosing a watershed on which to base this project allows for boundaries to be set without the administrative abstraction of national or departmental demarcations. It also opens up possibilities for rhizomatic connections between tribes, nations, and administrative entities, yet retains the integrity of the landscape’s natural connections to elements within the drainage and tributary systems of the Stikine River. This natural porously bounded area provides a set of rhizomatic connections that are continually moving through, within, and outside of the watershed. Too, using digital space to represent the watershed provides a coherence that permits the assemblage to explore events through time. The assemblage is able to represent a complex, layered, yet temporary equilibrium of the social realities within the Stikine Watershed.

The combination of interfaces representing geographical, diagrammatic, and two-windowed or abstracted trajectories through linkages and relations provide a tool for

¹⁷⁶ Cassiar Iskut-Stikine LRMP Newsletter, May 1997, Issue 3, 13 May 2002, <<http://www.luco.gov.bc.ca/lrmp/cassiar/newsletter/news3.htm>>.

users to engage with individually. The reintegration of fragments creates larger, modular sets of connections that allow users to access material and conceptualize how social forces and entities are and have been interacting in the Stikine region. This is necessarily a visually-oriented construction, and possibly where it may fail for some users is in the use of text which reduces the fluidity of the assemblage by forcing the user to read, rather than experience through presentation or “at-a-glance” summaries of information about connections. But for some users, this may also present an opportunity to explore ruptures and breaks in the stream of data. More unpredictable still is the way in which video and other moving elements of the two-windowed interface might be used. The stop/play/pause capabilities may cause some voices to be silenced, and others to be heard. What becomes evident in exploring the ways in which assembled data is used is that the capacity and limitations of these forms remain in digital space. Instead of superseding these media, what digital space provides is an opportunity to identify relationships between data sets, add multiple layers of overlapping information, and visualize connections, ruptures, and breaks. This ability to envelop other forms, and create layers of analysis through layout and design creates a condition that can enable curiosity and varied experiences.

In the introductory chapter, I started out by interrogating the various ways we look at a landscape. And indeed, this basic question has informed the project through the use of various kinds of media and data, and in the creation of three distinct interfaces with distinct modes of navigating through digital space. Yet, through the design and writing process, I also began to wonder about other possibilities of representing this landscape for the user. If the definition of digital space were to expand beyond what I have been working with (mouse, keyboard, monitor, a single central processing unit), there might be an opportunity to build an unpredictable and reflexive set of connections. The quote from the Tahltan statement at the beginning of the LRMP process that begins this chapter represents one of the indigenous perspectives on what the land represents: a past, present, and future. There are, as has been explicated throughout this written analysis, many other perspectives. If this assemblage were an open system online (as has been referenced earlier in footnotes in chapter one and two), these perspectives and voices could be added by users via the Internet transfers and uploads of various kinds of media. Diagrams could be made, and remade, new data sets could be created, and an already fragmentary archive would have the opportunity to expand. The currently created assemblage, then, becomes the foundation for a rhizome that grows according to the interaction and involvement of those interested in and part of the Stikine Watershed.

This idea of a networked assemblage growing with interaction goes to the heart of what the assemblage has attempted to accomplish. By providing a framework for visualizing linkages, connections and data sets that are not excluded as a result of non-conformity to subject area, form, standardization, or official designation, the assemblage has created a space for experimentation and experience. It sets aside the usual boundaries that govern how landscapes are viewed through data fragments and allows for a collage, montage, and rhizome to be enacted that reflects the chaos of reality and the temporary equilibrium that exists within an ecological order.

BIBLIOGRAPHY

“A hovercraft floats into BC eco-debate.” *Globe and Mail* Metro Edition, 7 July 1994, p. B7.

“A Response to the Lower Stikine Planning Report. (Ministry of Forests; July 1984)” Submitted by the Outdoor Recreation Council of British Columbia. British Columbia Ministry of Forests. September 1984.

Affleck, Edward L. “Navigation on the Stikine River, 1862-1969.” *British Columbia Historical News*, v. 28(1), Winter, 1994/1995, p. 15-19.

Albright, Sylvia L. *Tahltan Ethnoarchaeology*. Burnaby, BC: Department of Archaeology, Simon Fraser University, 1984. Publication no. 15.

Barnsley, Paul. “Cree chief slams Gathering Strength” *Windspeaker News*. January 1999 The Aboriginal Multimedia Society. 5 May 2002.

<<http://www.ammsa.com/windspeaker/WINDNEWSJAN99.html>>

Barnsley, Paul. “UN committee criticizes Canada” *Windspeaker News*. January 1999 The Aboriginal Multimedia Society. 5 May 2002.

<<http://www.ammsa.com/windspeaker/WINDNEWSJAN99.html>>

Barr, Dave. “Our Threatened Heritage in Northwestern British Columbia.” *BC and Yukon Chamber of Mines Website*. 16 April 1997. 5 May 2002. <http://www.bc-mining-house.com/land/opin_db3.htm>.

Bassett, Lamont. “Spatsizi: One of B.C.’s last, great wilderness areas is at the center of an ecopolitical debate” *Western Living*, July 1985, pp.54-64.

Bassett, Monty, “Life on the vertical: the goats of Canada’s Grand Canyon are a downwardly mobile group.” *Nature Canada*, v. 25(1), Winter 1996, p. 22-28.

Bauer, Martin W. and George Gaskell. *Qualitative Researching with Text, Image and Sound: A practical handbook*. London: Sage Publications, 2000.

Bazin, André. *What is cinema?* Berkeley: University of California Press, 1967-71.

BC Hydro. “1995 Integrated Electricity Plan: Overview.” 1995.

BC Hydro. “Integrated Electricity Plan: An Update to the 1995 IEP.” January 2000.

BC Hydro. “Stikine-Iskut Development: Interim Assessment Report.” December 1984.

Bell, Stewart. "Hovercraft 'killing salmon' in two rivers: The Friends of Stikine Society says the vessel used by a mining company to ferry gold is destroying fish habitat.: 'No serious impact on river,' according to Cominco studies." *The Vancouver Sun*, 17 May 1996, p. B1.

Bender, Gretchen and Timothy Druckery, Ed. *Culture on the Brink: Ideologies of Technology*. Seattle: Bay Press, 1994.

Benjamin, Walter. *Illuminations*. Trans. Harry Zohn. New York: Schocken Books, 1968.

Benjamin, Walter. *The Arcades Project*. Trans. Howard Eiland and Kevin McLaughlin. Cambridge: Belknap Press, 1999.

Berger, John. *Ways of Seeing*. London: BBC and Penguin Books, 1972.

Bertin, Jacques. *Semiology of Graphics: Diagrams Networks Maps*. Trans. William J. Berg. Madison: University of Wisconsin Press, 1983.

Bolter, Jay and Richard Grusin. *Remediation: Understanding New Media*. Cambridge: MIT Press, 1999.

Boardman, Mary. "Stikine – The Great River: A Heritage Corridor or a Channel for Exports to Pacific Rim Countries?" *Watershed Sentinel*, Vol. 9, April/May 1999. 5 May 2002. <<http://www.rfu.org/ws92.htm>>.

Bottomer, Lindsay. "Presidential Address at Roundup 2000, Lindsay Bottomer." *BC and Yukon Chamber of Mines Website*. 21 February 2002. <<http://bc-mining-house.com/news/feb00-8.html>>.

Bramham, Daphne. "Cassiar shutdown cuts Good Hope Lake lifeline." *The Vancouver Sun*. 20 July 1992, p. B3.

Brody, Hugh. *Maps and Dreams*. New York: Pantheon Books, 1982.

Broeckmann, Andreas. *Are You Online? Presence and Participation in Network Art* (1998). *Ars Electronica: Facing the Future*. Edited by Timothy Druckrey with Ars Electronica. Cambridge: MIT Press, 1999.

Buck-Morss, Susan. *Dialectics of Seeing: Walter Benjamin and the Arcades Project*. Cambridge: MIT Press, 1991.

Burnett, Ron. *Cultures of Vision: Images, Media, and the Imaginary*. Bloomington and Indiana: Indiana University Press, 1995.

Callison, Candis. *Traditional Renaissance: Art of the TaLaDeNe*, Knowledge Network, British Columbia, 1996-2000.

Carroll, Noel. *The Specificity of Media in the Arts*. From *Film and Theory: An Anthology*. Edited by Robert Stam and Toby Miller. Malden, MA and Oxford: Blackwell Publishers, 2000.

Crary, Jonathan. *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century*. Cambridge: MIT Press, 1992.

Crary, Jonathan. *Suspensions of Perception: Attention, spectacle, and modern culture*. Cambridge: MIT Press, 1999.

Crist, Reggie. "In Search of the Triple Crown: A Men's Journal expedition to paddle – and survive – the three fiercest rivers in North America," *Men's Journal*. 21 April 2002. <<http://mensjournal.com/adventureTeam/tripleCrown/intro.html>>.

Connelly, Joel. "B.C. plan protects Alaskan rivers: Proposal would add to parks, ban logging." *Seattle Post-Intelligencer*, 7 June 2000. Archived on *Forests.org Website*. 5 May 2002. <<http://forests.org/archive/canada/bcplanpr.htm>>

Cronon, William "The Portage: A Place in Time", MIT Sawyer Series Lecture, 5 April 2002.

Davis, Mike. *Ecology of Fear: Los Angeles and the Imagination of Disaster*. New York : Metropolitan Books, 1998.

de Certeau, Michel. *The Practice of Everyday Life*. Trans. Steve Rendall. Berkley and Los Angeles: University of California Press, 1984.

Deacon, David, Michael Pickering, Peter Golding and Graham Murdock. *Researching Communications: A practical guide to methods in media and cultural analysis*. London: Arnold Publishers, 1999.

Declaration of the Tahltan Tribe, 1910. Published in *Stikine: The Great River, Tahltan Native Studies* and "The Stikine," Alaska Geographic.

Deleuze, Gilles and Felix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Trans. Brian Massumi. Minneapolis: University of Minnesota Press, 1987.

Deleuze, Gilles. *Foucault*. Trans. Sean Hand. Minneapolis: University of Minnesota Press, 1988.

Druckery, Timothy with Ars Electronica. *Ars Electronica: Facing the Future*. Cambridge: MIT Press, 1999.

Emmons, George T. *The Tahltan Indians*. Philadelphia: The University Museum, 1911.

Ferris, Glenda and Brad Nothstein. "Case Study #3: Tahltan First Nation, The Mining Industry, and Environmental Assessment" in *Aboriginal Peoples and Mining in Canada: Six Case Studies*, ed. Christine Cleghorn, September 1999, MiningWatch Canada, 13 May 2002. < http://www.miningwatch.ca/aboriginal%20gathering/Case_Studies.html>

"First Nations Languages of British Columbia." UBC Museum of Anthropology, 1994. Revised 15 October 1996.

Fischer, Michael. *Worlding Cyberspace: Toward a Critical Ethnography in Time, Space, and Theory*. From *Critical Anthropology Now: Unexpected Contexts, Shifting Constituencies, Changing Agendas*. Edited by G. Marcus. Santa Fe: SAR Press, 1999.

Fieghan, Gary. Introduction by Hugh Brody. *Stikine: The Great River*. Vancouver and Toronto: Douglas and McIntyre, 1991.

Foucault, Michel. *Discipline and Punish: The Birth of the Prison*. Trans. Alan Sheridan. New York: Random House, 1977.

Foucault, Michel. "Of Other Spaces" (Originally published in French as "Des Espace Autres" *Architecture/Mouvement/Continuité*, October, 1984 and was the basis of a lecture given by Michel Foucault in March 1967.) Trans. Jay Miskowiec. 13 May 2002. <<http://foucault.info/documents/foucault.heteroTopia.en.html#1>>

Foucault, Michel. *Power/Knowledge: Selected Interviews and Other Writings 1972-1977*. Trans. Colin Gordon, Leo Marshall, John Mepham, Kate Soper. New York: Pantheon Books, 1980.

Foucault, Michel. *Power*. Edited by James D. Faubion, Trans. Robert Hurley et al. New York: New Press, 2000.

Foucault, Michel. *The Archaeology of Knowledge and The Discourse on Language*. Trans. A.M. Sheridan Smith. New York: Pantheon Books, 1972.

Foucault, Michel. *The Order of Things: an Archaeology of the Human Sciences*. New York: Random House, 1970.

Francis, Daniel. *The Imaginary Indian: The Image of the Indian in Canadian Culture*. Vancouver: Arsenal Pulp Press, 1992.

Geertz, Clifford. *The Interpretation of Cultures*. New York: Basic Books, 1973.

George, Chief Dan. *My Heart Soars*. Surrey: Hancock House Publishers, 1989.

Gibbens, Robert. "Panning Canada's Golden Triangle." *Financial Times* (London), 22 June 1990, p. 32.

Grosz, Elizabeth. *Architecture from the Outside: Essays on Virtual and Real Space*. Cambridge: MIT Press, 2001

Graham, Stephen and Simon Marvin. *Splintering Urbanism: Networked infrastructures, technological mobilities and the urban condition*. London and New York: Routledge, 2001.

Hanna, Dawn. "Author questions the sanity of logging plans for Cassiar region." *The Vancouver Sun*, 26 January 1996, p. F10.

Harley, J.B. "The Map and the Development of the History of Cartography." *The History of Cartography I*. Eds. J.B. Harley and D. Woodward. Chicago: University of Chicago Press, 1987-1994.

Harley, J.B. "Maps, Knowledge, and Power." In *The Iconography of Landscape: Essays on Symbolic representation, Design and Use of Past Environments*. Eds. Denis Cosgrove and Stephen Daniels. Cambridge: Cambridge University Press, 1988.

Harvey, David. *Justice, Nature and the Geography of Difference*. Cambridge: Blackwell Publishers, 1996.

Harvey, David. *Spaces of Hope*. Berkely and Los Angeles: University of California Press, 2000.

Hawkes, David T. *An analysis of demographic data dealing with employment and residence patterns in the two Indian communities of Telegraph Creek and Iskut, British Columbia*. University of British Columbia, 1966.

Heller, Steven and Seymour Chwast. *Graphic Style: From Victorian to Digital*. New York: Harry N. Abrams, 2000.

"Herstory in 1996." *The Gazette* (Montreal), 16 October 1995, p. E3.

Hume, Stephen. *The Run of the River: Portraits of eleven British Columbia rivers*. Vancouver: New Star Books, 1992.

Hume, Mark. "New forestry code won't alone solve B.C.'s silt problems." *The Vancouver Sun*, 4 January 1994, p. D9.

"Indians to own and operate new generating plant near Dease Lake." *The Vancouver Sun*, 2 November 1993, p. D3.

Ignace, Maryanne. "Handbook for Aboriginal Language Program Planning in British Columbia," A report prepared for the First Nations Education Steering Committee, Aboriginal Language Sub-Committee, Education Steering Committee. *Canada's School Net*. 5 May 2002. <<http://www.schoolnet.ca/aboriginal/fnesc/>>.

Kahn, Paul and Krzysztof Lenk. *Mapping Web Sites*. Netherlands and Belgium: BIS Publishers, 2001.

Kelley, Wyn. *Melville's city : Urban and Literary form in nineteenth-century New York*. New York: Cambridge University Press, 1996.

Kern, Stephen. *The Culture of Time and Space: 1880 –1918*. Cambridge: Harvard Press, 1983.

Kittler, Friedrich. "There is No Software" From *Electronic Culture: Technology and Visual Representation*. Edited by Timothy Druckrey. New York: Aperture, 1996.

Klee, Paul. *On Modern Art*. Trans. Paul Findlay. London: Faber and Faber, 1948.

Knobler, Nathan. *The Visual Dialogue: An Introduction to the Appreciation of Art*. New York: Holt, Rinehart, and Winston, Inc., 1966.

Krech III, Shepard. *The Ecological Indian: Myth and History*. New York: W.W. Norton and Company, 1999.

Krueger, Jan, Shane Conn, and Beth Moreau, *Tahl Tan Mission Study*. Part of the Opportunities for Youth Project, 1971. Partially funded by Tahltan Band.

Latour, Bruno. *Science in Action*, Cambridge: Harvard University Press, 1987

Winona LaDuke, *All Our Relations: Native Struggles for Land and Life* (Cambridge: South End Press, 1999).

Lawrence, Guy. *Forty Years on the Yukon Telegraph*. Quesnel, BC: Caryall Books, 1965.

Lévi-Strauss, Claude. *The Savage Mind*. Chicago and London: University of Chicago Press and Weidenfeld and Nicolson, 1966.

Lessing, Gotthold Ephraim. *Laocoon : An Essay on the Limits of Painting and Poetry*. Baltimore: Johns Hopkins University Press, 1984.

Letter to The Deputy Commissioner of Lands and Works Victoria, BC from Indian Office Victoria, BC, 28 July 1905. Archived as "Tahltan Indian Reserve Letters and Map" Joint Reserve Commission, file no. 9. British Columbia Archives.

Long, Peter. *The Stikine*, CFTK-TV, 1985.

“Lower Stikine Planning Report.” Planning Section, Prince Rupert Forest Region, British Columbia Ministry of Forests. July 1984.

Lunenfeld, Peter. *The Digital Dialectic: New Essays on New Media*. Cambridge: MIT Press, 2000.

MacQueen, Ken. “Internet test focuses on remote B.C. town: Telegraph Creek residents, isolated for years, can pull the Internet out of thin air.” *The Vancouver Sun*, 1 July 1999, p. A1.

Manovich, Lev. *The Language of New Media*. Cambridge: MIT Press, 2001.

Mauss, Marcel. *The Gift*. Trans. W.D. Halls. New York and London: W.W. Norton, 1990.

Melucci, Alberto. *Challenging Codes: Collective Action in the Information Age*. Cambridge: Cambridge University Press, 1996.

McInnes, Craig. “Plan to create Stikine River park sent along for political approval,” *Vancouver Sun*, June 8, 2000, p. B6.

McLuhan, Marshall. *Understanding Media: The Extensions of Man*. Cambridge: MIT Press, 1994.

McNamee, Kevin. “Exceptional river has mediocre protection: protecting the Stikine River has been a long-standing goal of conservationists in Canada and the United States.” *Nature Canada*, v. 25(1), Winter, 1996, p. 28.

Mining Association of British Columbia Website. “Submission to Select Standing Committee on Aboriginal Affairs.” 2 November 2001. Mining Association of British Columbia. 21 February 2002.
<<http://www.mining.bc.ca/download/Submission%2520to%2520Standing%2520Comm%2520Aboriginal%2520Affairs.doc+eskay+>>

Mitchell, William J. *City of Bits: Space, Place, and the Infobahn*. Cambridge: MIT Press, 1995.

Mitchell, William J. *The Reconfigured Eye: Visual Truth in the Post-Photographic Era*. Cambridge: MIT Press, 1992.

Mitchell, W J T, ed. *Language of Images*. 1980.

Murray, Janet. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. Cambridge: MIT Press, 1997.

Mulgrew, Ian. "How to work with a First Nation: Mining conference hears 'success story' of Tahltan band's partnership with industry." *The Vancouver Sun*, January 31, 2002, p. D2.

Nielsen, Jakob. "Top Ten Guidelines for Homepage Usability." 13 May 2002. <<http://www.useit.com/alertbox/20020512.html>>.

Olson, Wallace M. *The Tlingit: An Introduction to their Culture and History*. 2nd ed. Auke Bay, Alaska: Heritage Research, 1991.

Packer, Randall & Ken Jordan, Ed. *Multimedia: From Wagner to Virtual Reality*. New York and London: Norton and Co., 2001.

Peepre, J.S. and Associates. "Lower Stikine River Landscape Assessment." British Columbia Ministry of Forests. October 1985.

Pritchard, Ann "Outsiders Stay Away." *Yukon News*, 21 April 1995.

Pynn, Larry."Spatsizi whitewater wonder." *The Vancouver Sun*, 3 August, 1991, p. E1.

Pynn, Larry "Indian band split by proposal to log near endangered river." *The Vancouver Sun*, 3 May 1995, p. B3.

Rajchman, John. *The Deleuze Connections*. Cambridge: MIT Press, 2000.

Rajchman, John. *Philosophical Events: Essays of the '80s*. New York: Columbia University Press, 1991.

Ratel, Ann. "Wilderness Advisory Committee Questions Concerning Stikine." Memorandum. BC Ministry of Energy, Mines and Petroleum Resources. 7 July 1986.

Rubin, Rehav. *Image and Reality: Jerusalem in Maps and Views*. Jerusalem: The Hebrew University Magnes Press, 1999.

Ridley, William. "Snapshots from the North Pacific" in *Warriors of the North Pacific: Missionary Accounts of the Northwest Coast, the Skeena and Stikine Rivers, and the Klondike, 1829-1900*. Ed. Charles Lillard. Victoria, BC: Sono Nis Press, 1984.

Raman, Shankar. *Framing "India": The Colonial Imaginary in Early Modern Culture*. Stanford: Stanford University Press, forthcoming.

Robinson, Arthur H. and Barbara Bartz Petchenik. *The Nature of Maps: Essays toward Understanding Maps and Mapping*. Chicago and London: The University of Chicago Press, 1976.

Smith, Merritt Roe and Leo Marx, Ed. *Does Technology Drive History? The Dilemma of Technological Determinism*. Cambridge: MIT Press, 1994.

Stafford, Barbara Maria. *Good Looking: Essays on the Virtue of Images*. Cambridge: The MIT Press, 1996.

Steele, Amy. "Abuse Victims settle out of court with government, church." *Yukon News*. 14 December 1998.

Strachan, Alex. "Beauty made flying dangerous in Over British Columbia shoot." *Vancouver Sun*, 19 October 1996, p. G1.

Tahltan Native Studies. Financed by Tahltan Indian Band and Stikine #87 School District, 1970.

Taussig, Michael. *Shamanism, Colonialism, and the Wild Man: A Study in Terror and Healing*. Chicago and London: University of Chicago Press, 1987.

"Technical Background Information Summary for Stikine Country Protected Areas – Draft." BC Parks Division, Skeena District, British Columbia Ministry of Environment, Land and Parks. 31 July 2000.

Tennant, Paul. *Aboriginal Peoples and Policies: The Indian Land Question in British Columbia, 1849–1989*. Vancouver: UBC Press, 1990.

Tennant, Paul. "The Indian Land Question in British Columbia: A Chronology" *University of British Columbia Website*. January 2002. 4 May 2002. <<http://foundations.arts.ubc.ca/PaulsTalks/>>.

Tennant, Paul. "The Aboriginal Rights Question in British Columbia: Competing Historical Views and Preferences." *University of British Columbia Website*. January 2002. 4 May 2002. <<http://foundations.arts.ubc.ca/PaulsTalks/Ladder.cfm>>.

"The Stikine River" *Alaska Geographic*, Vol. 6, No. 4, 1979.

"Tripartite Policing Agreement for Tahltan, Iskut and Dease River First Nations." *Canada News Wire*, 17 October 1996.

Tufte, Edward. *Envisioning Information*. Cheshire, Connecticut: Graphics Press, 1990.

Tufte, Edward. *Visual Explanations: Images and Quantities, Evidence and Narrative*. Cheshire, Connecticut: Graphics Press, 1997.

Viola, Bill. *Reasons for Knocking at an Empty House: Writings 1973-1994*. London: Thames and Hudson, Anthony d'Offay Gallery, 1995.

Wagamese, Richard. "Wilderness Silence is Golden." *Calgary Herald*, 25 January 1992, p. F6.

Weibel, Peter. The World as Interface: Toward the Construction of Context-Controlled Event-Worlds. From *Electronic Culture: Technology and Visual Representation*. Edited by Timothy Druckrey. New York: Aperture, 1996. p. 348.

Western Mining Activist Network. *Follow the Mining Money: An Activist Toolkit for Direct Corporate Campaigning*. November 2000.

White, Richard. *The Organic Machine: The Remaking of the Columbia River*. New York: Hill and Wang, 1995.

Wilford, John Noble. *The Mapmakers*. New York: Vintage Books, 2001.

Wilson, Mark. "Home use of e-mail accelerating: Most PC owners now have Internet access, and this means they use e-mail." *The Ottawa Citizen*, 22 July, 1998, p. H5.

Wood, Dennis, with John Fels. *The Power of Maps*. New York: The Guilford Press, 1992.

Young, John. "Aboriginal hydro project collapses." *Canadian Press Newswire*, 27 May 1999.

Interviews

Arnold, Gil, Executive Director of Friends of the Stikine. Personal Interview. March 2002.

Bob, Dempsey, Tahltan-Tlingit Artist. Personal Interview. August 1995.

Bob, Tanya. Personal Interview. February, 2002.

Brown, Willie, Tahltan Elder. Personal Interview. August 1995.

Callison, Dempsey, Owner, Golden Bear Outfitting. Personal Interview. January 2002.

Dever, Alan, BC Rail Vice President of Communications, Community and Aboriginal Relations. Personal Interview. February 2002.

Harrison, Don, Land Use Director, Environmental Mining Council of British Columbia. Personal Interview. February 2002.

Ko, Jim, Supply Investment Engineer, BC Hydro. Personal Interview. February 2002.

McKnight, Bruce. Executive Director of BC and Yukon Chamber of Mines. Personal Interview. March 2002.

McLaren, Graeme. BC Ministry of Sustainable Resource Management. Personal Interview. February 2002.

Murphy, Marlin. Environmental Manager, Eskay Creek Mine, Barrick Gold Corporation. Personal Interview. March 2002.

Northcott, Peter, Senior Planning Engineer, BC Hydro. Personal Interview. February 2002.

Young, Alan, Executive Director, Environmental Mining Council of British Columbia. Personal Interview. February 2002.

Government Website Sources

BC Ministry of Attorney General Website. "Historical References." Treaty Negotiations Office. BC Ministry of Attorney General. 4 May 2002. <<http://gov.bc.ca/tno/history/>>.

BC Ministry of Attorney General Website. "Present Status of the BCTC Process." Treaty Negotiations Office. BC Ministry of Attorney General. 5 May 2002. <<http://gov.bc.ca/tno/treaty/status.htm>>.

BC Ministry of Education Website. "First Nations Peoples of British Columbia." Aboriginal Education, BC Ministry of Education. <<http://www.bced.gov.bc.ca/abed/map.htm>>.

BC Ministry of Forests Website. "Cassiar Timber Supply Area Analysis Report, March 2001." Timber Supply Branch, Forest Service, British Columbia. 11 May 2002. <<http://www.for.gov.bc.ca/tsb/tsr2/tsa/tsa05/report/htoc.htm>>.

BC Ministry of Forests Website. "Nass Public Discussion Paper, June 2001." BC Ministry of Forests. 5 May 2002. <<http://www.for.gov.bc.ca/tsb/tsr2/tsa/tsa25/pdp/nass-pdp.htm>>

BC Ministry of Sustainable Resource Management Website. “Cassiar Iskut-Stikine Land and Resource Management Plan,” BC Ministry of Sustainable Resource Management. 13 May 2002. <<http://www.luco.gov.bc.ca/lrmp/cassiar/index.htm>>.

BC Ministry of Sustainable Resource Management Website. “Land and Resource Management Planning: A Statement of Principles and Process,” 1st ed. BC Ministry of Sustainable Resource Management. 13 May 2002.
<<http://www.luco.gov.bc.ca/lrmp/stmt.htm>>.

BC Ministry of Water, Land and Air Protection Website. “Cassiar Regional Map”, Recreation, BC Parks, Ministry of Water, Land and Air Protection. 13 May 20002.
<http://wlapwww.gov.bc.ca/bcparks/explore/regional_maps/cassiar.htm>.

BC Ministry of Water, Land and Air Protection Website. “Spatsizi Plateau Wilderness Provincial Park.” Recreation, BC Parks, Ministry of Water, Land and Air Protection. 13 May 2002.
<http://wlapwww.gov.bc.ca/bcparks/explore/parkpgs/spatsizi/nat_cul.htm#History>.

Department of Fisheries and Oceans Canada Website. “Pacific Salmon Treaty.” Pacific Region, Department of Fisheries and Oceans Canada. 13 May 2002. <http://www.dfo-mpo.gc.ca/pst-tsp/main_e.htm>.

Department of Indian and Northern Affairs Canada Website. “Fact Sheet: The Nisga’a Treaty.” Indian and Northern Affairs Canada. <http://www.ainc-inac.gc.ca/pr/info/nit_e.html>.

Department of Indian and Northern Affairs Canada Website. “Backgrounder – The Residential School.” Indian and Northern Affairs Canada. 5 May 2002.
<http://www.ainc-inac.gc.ca/gs/pth_e.html>.

Department of Indian and Northern Affairs Website. “The Department of Indian Affairs and Northern Development.” December 1997. Indian and Northern Affairs Canada. 5 May 2002. <http://www.ainc-inac.gc.ca/pr/info/info108_e.html>.

Province of Nova Scotia Website. “Definition of Aboriginal Terms.” Aboriginal Affairs, Province of Nova Scotia. 13 May 2002. <<http://www.gov.ns.ca/abor/content/gloss.htm>>.

Statistics Canada Website. “A Profile of the Canadian Population: Where We Live.” Census 2001, Government of Canada. 12 March 2002.
<<http://www12.statcan.ca/english/census01/release/index.cfm>>.

USDA Forest Service Website. “Forest Facts.” Tongass National Forest, USDA Forest Service. 13 May 2002.

<http://www.fs.fed.us/r10/tongass/forest_facts/resources/wilderness/sawld.html#Stikine - Leconte Wilderness>.

USDA Forest Service Website. “Tongass National Forest.” USDA Forest Service. 13 May 2002.

<http://www.fs.fed.us/r10/tongass/forest_facts/resources/wilderness/sawld.html#Stikine - Leconte Wilderness>.

USGS Website. “Land Process Distributed Active Archive Center.” 29 April 2002.

<<http://edcdaac.usgs.gov/gtopo30/gtopo30.html>>.

Other Website Sources

BC Archives

<http://www.bcarchives.gov.bc.ca/index.htm>

BC and Yukon Chamber of Mines

<http://www.bc-mining-house.com>

British Columbia’s First Nation On-line Community

<http://www.bcfn.org>

Environmental Mining Council of BC

<http://emcbc.miningwatch.org/emcbc>

Friends of the Stikine

<http://www.panorama-map.com/z-pointsite/STIKINE/stikine.html>

MiningWatch Canada

<http://www.miningwatch.ca>

The Mining Association of British Columbia

<http://www.mining.bc.ca>