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Sustainable Forestry in the Gwich'in Settlement Area: Ethnographic and Ethnohistoric Perspectives

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Sustainable Forestry in the Gwichʼin Settlement Area: Ethnographic and Ethnohistoric Perspectives

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by

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Project on Sustainable Alternatives to Industrial Forestry in the Gwich'in Settlement Area

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Preface from the Principle Investigator:

This working paper is intended to be the first in a series, which makes available to readers the research results of our interdisciplinary research group on forestry issues in the Gwich'in Settlement Area [GSA]. The GSA is a unique sub-Arctic boreal territory located at the northern boundaries of the contemporary Northwest Territories and Yukon Territory. The area is one of only a small but growing number of territories where, after a period of long deliberation, the Government of Canada is prepared to recognize the rights of a First Nation to regulate its own land, water, and wildlife resources. Although presently far from the industrial forests of northern Alberta and British Columbia, the GSA harbours some of the most northerly boreal forest growths in the world. Thus the region is special both politically and ecologically.

Since 1997, the Gwich'in Renewable Resources Board, in collaboration with the Departments of Anthropology and of Renewable Resources at the University of Alberta, have been involved in a baseline study of existing sustainable forestry practices. Core funding for the project has come from the Sustainable Forestry Management Network Centre of Excellence. Our research team has been using oral history, archival research, participant observation, and studies of forest regeneration rates to set existing forest practices within a context of industrial forest use in the recent past and within the context of proposed future developments. The results of this research are intended to flow into a Sustainable Forestry Management Plan for the GSA.

This working paper was designed to answer a research question drafted by Patrice Simon, formerly of the Gwich'in Renewable Resources Board, which aimed to widen our knowledge of the quantity of logs taken by sawmills and steamships at the turn of the century. Our group has chosen to widen the research question to contrast the unique and flexible way that Gwich'in people use a variety of resources in the forest to the intensive harvests of timber by transport and

building firms earlier in this century. It is this contrast which currently rests behind present management decisions as communities are studying proposals once again for commercial cutting to supply materials for log buildings or to provide firewood for the four expanding Gwich'in communities in the Mackenzie Delta.

Our group welcomes comments and suggestions on this working paper.

David G. Anderson
Assistant Professor & Principle Investigator

Introduction:

Forestry in the Gwich'in Settlement Area is of interest to scholars for a variety of reasons. Key among these is the fact that the Gwich'in residents of this area maintain close ties to the land through activities which in the past were referred to by academia as subsistence patterns. These borderline boreal forests which are mostly above the Arctic Circle are thus "lived places." People refer to themselves as "staying" on the land and the physical space is divided up into people's "country" where a degree of tenure is held not through any sort of distanced political boundary creation but through direct knowledge of it and a sense of maintaining it through generations. People talk about their "country" in ways that bridge past ancestral ties to the land with their own present practices to convey an understanding of tenure which includes activity and knowledge. Therefore someone's "country" may be figured genealogically but the acts of "staying" on it and living with it are also locally important and often talked about factors. The "land" itself is comprised of the lowlands surrounding the many rivers, which run into the Mackenzie River and the highlands, which lead into the Richardson Mountains. The forests in the delta are made up mostly of spruce trees with some localized birch and popular stands. The banks of the many rivers and back-channels are usually bordered by willows. The highlands and the mountains are mostly tundra with some stunted spruce and birch trees growing in the valleys and some larger spruce trees growing along some of the larger creeks.

As can be ascertained by the legal title "Gwich'in Settlement Area" [GSA} there is another, more recent dimension to Gwich'in "country." On April 22, 1992 the Gwich'in Comprehensive Land Claim Agreement was by the Gwich'in Tribal Council, the Canadian Government and the Government of the North West Territories. This agreement then was enforced by the passing of the Gwich'in Land Claim Settlement Act on December 22, 1992. This land claim created a 56, 935 square kilometer area in the North West Territories which includes the lower Mackenzie River, part of the Peel River and the Arctic Red River watershed called the Gwich'in Settlement Area. The Gwich'in Settlement Area should not be confused with the Gwich'in Settlement Region which includes the GSA in the North West Territories and an area in the Yukon where Gwich'in have user rights to natural resources.

Beneficiaries of the land claim have the legal right to access all the land in the GSA for the purposes of subsistence activities, i.e., they may hunt, fish, trap and harvest forest products for

personal use. If one of these beneficiaries wishes to conduct any sort of commercial activities then he/she must first ascertain if the land involved is Gwich'in Private Land or Crown Land. Private Land composes approximately 40% of the land in the GSA which is made up of 53 parcels of which 33 are surface rights and 20 include subsurface rights. If the land in question is Gwich'in Private Land then the beneficiary must first contact the Gwich'in Land Administration for approval. If the land in question is located on the 60% of the GSA which has remained Crown Lands, then the beneficiary must contact the Gwich'in Land and Water Board for approval.

Those who are not beneficiaries must comply with all Federal and Territorial laws governing access to Crown Lands. On Gwich'in Private Land they must contact an agent of the Gwich'in Tribal Council for details concerning access other than for casual use of waterfront lands, i.e., canoeing, sportfishing, hiking, etc. An agent of the Tribal Council includes the Gwich'in Land Administration and Community Renewable Resource Councils located in Fort McPherson, Aklavik, Tsiigehtchic and Inuvik. The Gwich'in Land Administration is the organization which regulates research and forestry activities on Gwich'in Private Lands.

The legal landscape created by the formation of the GSA was considered to be necessary by the Gwich'in Tribal Council in order to better manage Gwich'in land for the benefit of the Gwich'in people. Prior to its formation both Gwich'in and non-Gwich'in had the same rights of access and had to comply with the same Federal and Territorial laws. This situation put Gwich'in people into a situation where they were committing criminal acts when they tried to maintain their traditional practices on what they considered to be their land. While this legal landscape is a far cry from the traditional model, it does in effect aid in regulating non-Gwich'in impacts and aims at preserving an identity which relies on Gwich'in people maintaining ties to the land.[1]

Far from being a set of conclusions, what follows is a report on some of the things which have been learned from two field seasons spent living on the land with Gwich'in people and from time spent perusing the archives for relevant historical data. As this paper reflects a team effort with members of the team doing distinctly different investigations, a change of voice is apparent between some of the sections. Out of respect for the highly interpersonal manner in which the learning process on the land occurs, a first person narrative is used in the ethnographic sections to

[1]Thanks is owed to the Gwich'in Tribal Council for providing the information on the legal landscape of the GSA.

bring the reader into the way in which things unfold during the intensive act of living with other people who choose to teach one about their lives. These ethnographic sections are the words of Robert Wishart, while the sections on archival materials are the words of Ara Murray and Derek Honeyman. In order to further clarify voice, section titles include the author's name.[2] The structure of the paper reflects the learning process in the sense that it begins by sketching out some of the anthropological notions on "landscape" which were brought to the field and then it proceeds to describe some of the author's presumptions which were put to rest and the manner in which it was discovered how to learn about things on the land. The paper then describes the concerns of Gwich'in people Robert Wishart learned from and juxtaposes these issues with the information learned from the Hudson's Bay and other archival sources by Ara Murray and Derek Honeyman about the past uses of the forests.

Anthropology and Landscape:

Robert Wishart

For approximately the last decade there has been a been a growing impetus in socio-cultural anthropology to investigate how people think of "place." Of course the sub-disciplines of anthropology which concern themselves with human custom and practice have always been interested in analyzing the manner in which people categorize space to form cultured places; however, recently many anthropologists are calling for a reanalysis of the models. This reanalysis includes those models that anthropologists have been using to analyze these issues and the underlying assumptions, which went into their creation. It is perfectly simple to point out as Rapoport (1994:460) does that "built environments" are purposefully created from human ideas and actions and are thus never chaotic, but it quite another task to discover what those thoughts and actions of others are which make their models logical.

Much of the anthropological descriptions of cultured spaces have been presented in a manner, which fulfills the analysist's "etic" categories. In other words, attention was paid mostly to those categories, which were of interest to academia or to state sponsors. The dissatisfaction

[2]The authors have agreed that this is the most respectful manner in which to handle the problem of voice. However, they would like to note that the discreetness of the sections should not be mistaken for a lack of communication between researchers. Considerable cross-fertilization of ideas has occurred with this project.

which arose from such descriptions came from many fronts and it is too time consuming to describe them here but let it be said that not a small part of this critique came from the very people who were the subjects of these reports. Once these critiques were listened to, it became very clear that what the people considered to be important was often different than the goals of the analyst. With the attention now swinging to try to understand how people themselves understand their “place” a lexicon of borrowed terms from other disciplines has been made available to anthropologists to help describe these perceived spaces. Thus it is now common to hear anthropologists talking about mental maps, image schemas or, most popularly, landscapes.

“Landscape’s” original meaning arose out of the actions of distanced viewers perceiving a painting or photograph (Green 1995) but it has come to represent something far more involved and far more cross-culturally meaningful. Many have argued that "land" is never a purely "natural" entity, "land" is always experienced by people and then described through some communicative process; in other words, landscapes are cultural in their very nature as they are the result of communication which points to these complex perspectives. Some are not entirely satisfied with the term “landscape” and have tried to find other terminologies which better represent the intention of the process they are describing. For example, Gaile McGregor (1985:vii) chooses to coin a new term for "landscape" which she refers to as "langscape." McGregor feels that while "landscape" conjures a sense of truth with its overtones of a morally neutral representation, "langscape" refers more accurately to the process. I do not think it necessary to coin new terms for this particular process as long as one is clear about what they are referring to. In fact terms like “landscape” are good precisely because they are open-ended. Instead of going to the field and looking for set categories--as was often done in the past--and then returning with an analysis which is not only unrecognizable to people concerned but is also not valued by them, one can explore “landscapes” and return with locally meaningful categories which can then be used alongside locally meaningful terms to communicate situations which are understandable to local people as well as academia. For example, in analyzing differing forms of land tenure, Ingold (1987:154) argues:

> ... we have to stop thinking about the land in excessively two-dimensional terms, as surface area. Regarded as a generalized, creative potential, land may just as well

> be condensed within particular locales, or distributed along particular paths. That is to say, it remains embodied in the properties of the landscape.

Following a similar line of thought, Schlichtmann (1985:23) points out that representations of land (i.e., maps) have a content and an expression which need a grammar, a code, in order to be communicatively successful. This code refers to shared understandings and norms of expression. Thus what is communicated is a culturally shaped view of the world through a medium which is deemed acceptable; this is what I mean when I talk of landscape and which hopefully opens up the definition beyond the original meaning of a detached viewer perceiving a painting or photograph.

It is all well and good to go to the field and bring the valuable lessons that one learned through scholarly pursuits, but one has to be aware that if people are involved, the categories that they have selected may differ from that of the classroom. As First Nations continue to assert their treaty rights and as co-management boards become more of the norm, the problem of poor communication between First Nations users and resource managers will continue to manifest itself. This problem has a myriad of causes but one of the most important is that quite simply management sciences and First Nations users understand the land very differently. Both may have the same goals in mind but in order to achieve these goals they may come at the problem with very different perspectives. As the Sustainable Forestry Network has concerned itself with these issues, it is important to realize that the process of selecting certain elements and disregarding others in the communicative process of landscape creation has been well documented by anthropology and should be taken seriously and not discounted by those who seek some sort of "objective" study. For instance, Kwon (1993: 19) notes that the objects which make up landscapes are *open* to appropriation by cultures for the purpose of communication. In relation to First Nations people of North America, landscape studies have become increasingly popular following such academic works as Cruikshank (1990a and b), Fienup-Riordan (1994), Basso (1984, 1988, 1996) and Hunn (1996) to mention a few. All of these works talk about locally meaningful aspects of Native people's landscapes but they also make an argument about the process by which people come to learn these things.

When one first goes to the field to learn about an aspect of landscape such as forestry practices, one arrives with many preconceptions and questions which may or may not be

appropriate. The process by which anthropologists come to learn how to ask questions in a locally meaningful manner is a long and often frustrating one. For example when I first began to do field work with Gwich'in elders one of the things I was asked to find out was what areas are harvested. This question was answered best by one elder when we were hunting moose around the junction of the Peel and Mackenzie Rivers. We were walking through the bush and stumps could be seen here and there. Evidence of human occupation is very important to the Gwich'in and it something that is talked about constantly. So this elder, after a long period of being silent when stalking through the woods, finally pointed to an old stump and proclaimed, "look here, everywhere you go in the bush, peoples have cut trees." I had asked him the question about where people cut wood a month earlier and he never responded to my question until this point. Perhaps the question was just ridiculous to his perspective and it just took a long time to find an answer, but most probably it just took this long before he thought I would understand a bit from a perspective of someone who lives on the land. I had already come to the conclusion that people do not really have a set area where they cut trees and they practice a more 'cut what and where you need to according to what is there for good harvesting' strategy' but this one statement given in the context of a history of unanswered questions which crystallized how presumptuous I had been.

More Presumptions and getting things right; Local practices, activities and selection processes :

Robert Wishart

As should be evident by now the Gwich'in concept of "land" and "country" is one where people are involved in the picture. A desired landscape from their perspective does not include notions of pristine wilderness, it is instead a landscape where people are incorporated into the activities. This is of course not a new observation and many anthropologists have spent considerable words describing just how First Nation's people incorporate themselves into "ideal" relationships with animals and the land (e.g., Brightman 1993, Tanner 1979). Not surprisingly then when one investigates how people go about forestry practices in such a culture one must take into consideration that such practices occur often as part of other activities on the land. For example, it was during a moose hunt that the elder in the story I told earlier decided to communicate his lesson about forestry practices. Thus one can not really separate out such

activities, they occur while living on the land and are made more complex by this degree of non-separateness. This also makes direct questions about where are good places to cut wood nonsense to the Gwich'in perspective. The best way to find such things is to live on the land while people are doing things and to help them as best as one can during these tasks. What follows then are observations and lessons I made and learned while doing just as I have described.

One of the first things which struck me as being interesting was the way that the elders I had contact with would look at trees and judge them as being of a use or not. For example on one occasion I was with two elders in the bush and some trees they passed by without comment and others they walked up to and commented on how they were good timber. One tree in particular was large and had fallen over during the winter was talked about as being good "dry wood," "good for the stove," said one elder. "Good to pack," said the other. What they meant was that it was a good sized tree which was naturally dry and was close to the water so it would be easy to get out by boat in the form of five to twelve foot logs called "sticks" which could later be cut into one foot lengths and split for firewood. This dead wood referred to as "dry wood" is harvested from trees which are either standing dead due to natural causes, standing dead due to human influence, naturally fallen or felled by human hands for later use. Such wood is preferred for heating fuel. As one elder points out, really dry wood is good to get the fire going "good, really hot" and then a "half green" piece is good for at night because it lasts a long time and gives a good even heat. The category of "half green" overlaps with that of "not one hundred percent wood" which I will discuss later. Another stump was of interest because it had been de-barked prior to being felled as was evident from the bark missing from the few inches of stump immediately below the point of cutting.

Earlier that day we had talked about the old practice of building shelters and smoke houses from the bark of spruce trees. The practice was to find a few large spruce trees which were then etched by an ax around the base and again around the trunk about six feet up the tree. A straight cut was then made perpendicular to the first two parallel cuts and the bark was then carefully peeled from the tree until a sheet of bark about three feet wide and six feet long. If the tree was felled while still alive another sheet may be taken from the same tree; however, the practice of leaving the tree standing was far more common and the reach of the harvester was then a factor in how much bark could be harvested. In addition it should be noted that trees were

selected for being relatively free of bark defects for this first six feet and the possibility of numerous knots and small, dry branches increases as one proceeds up the trunk. The harvesting of bark in this manner was almost always done in the spring when the sap in the spruce trees is running and the bark can be peeled from the tree easily and is malleable enough to flatten into sheets without cracking too much. These sheets were then fastened to a frame made out of dry spruce poles cut from small straight trees. Examples of smoke houses built in this manner can still be found at some fish camps along the rivers. I was told that often the bark was harvested and then the tree--now dead--was harvested later for other "dry wood" uses. So I assumed that this was just such a tree. One elder pointed out that the tree may have been cut for such a reason but it may not have been. These elders were not going to come to a conclusion about what use a tree had been put unless it was put to a use by their hands. Later I would learn that bark still gets peeled from trees today but there are many reasons why this may be done. The most common reason is to kill a good tree without putting the bark to any other use. The logs may be used for building materials for a cabin or it may be that the wood is needed for burning later on or it may be for a variety of other reasons and the evidence left behind is the same as that of the practice of peeling bark for the purpose of building a smoke house. In fact, the practice of building smoke houses from bark is fairly rare these days and usually occurs where people want to preserve an image of culture continuity for tourists or for children to learn about the past in a sort of a living museum type atmosphere. In other words, the people who choose to build smoke houses in this way are usually those commissioned to be "culture camps," most other people use plywood to cover their smoke houses these days while maintaining the practice of harvesting and making dry fish.

Another presumption which I had heard made is that people cut wood within ten to twenty meters of the road or the river. In the summer time when the road and the water is navigable and the bush is not by motorized vehicles this is generally true; however, people generally cut more wood during the time when sleds and snowmobiles make easy work of getting good dry wood from far back in the bush. Most of the wood that is used for burning is harvested in this way according to most of the people I talked to and they only cut next to the rivers and roads during the summer when they run out of wood harvested in spring by snowmobile. This answers why one often runs upon stumps along the banks of small streams and shallow lakes

which are not navigable by boat but boast a copious number of big, dead standing “dry wood” trees.

My first hands on experience with the manner in which forestry activities are a part of living on the land came when we decided to erect a canvas tent. These tents require the use of a ridge pole to span the fourteen foot length of the roof with at least an extra foot at each end. An additional four poles of at least fourteen feet are needed for the supports. An additional twelve poles about six feet long must then be cut and tapered at one end so that they can be driven into the earth and the side guide ropes tied to them. These last twelve “pegs” can be cut from any relatively straight live wood and generally they are cut from tall willows which grow in dense patches all along the Peel river. However, the five long poles need special attention as will be discussed later. Furthermore, these tents do not come with any sort of floor so one needs to be provided. “Brush” or soft spruce boughs are cut and weaved into a floor which was warm, dry and smells fresh. This floor needs to be replaced about once every two weeks. Then there is the fact that such a tent is equipped with a ring for a stove pipe to fit through so wood must also be obtained.

In order to obtain all of these forest products we traveled to two different areas. About two kilometers down river from the ferry landing there is an entrance to a backwater which leads to a small hill on the north side of the river. I could see that there were a great number of trees growing on this hill so I understood why one would want to cut trees here but I could also see that up and down the river there were many other places where spruce trees grew in abundance and these were not on top of a precarious climb up a steep bank and then up the small hill. It seemed to me to be inefficient to cut wood there when I could see so many other easy places. Furthermore, we did not take the chain saw with us up the bank and this intrigued me more along with the fact that we took along a blue tarp.

Climbing up to the top of the bank, I could now see that the woods here were rather open and, while there were a few large trees, most of the trees were either short and densely foliated--Christmas-tree like--or they were tall and spindly. People immediately set to work cutting down trees which were no higher than six feet but which sported a good supply of boughs while I was instructed to start using the machete to cut the limbs and to pile them on the blue tarp. As I hacked the limbs off I could people discussing the merits of some other trees. “Not tall enough,”

"Not straight," and "This one's good, but too green" were a few of things these people were saying. Finally they decided upon one tree and cut it down. When they reappeared, they were carrying a long pole cut from a tall thin standing dead tree. I asked about the selection process and one of them said that the pole had to be fairly straight and not too thick because it would be too heavy. Most importantly the pole had to be dry because it would not bend under the weight of the tent if it was not green. This tree was to become the ridge pole. Bundling up all the limbs I had cut off, this one person explained that the limbs of small trees had softer needles and were more densely foliated.

To find small trees growing in an abundance one must look for areas where there are open spaces for small trees to flourish. Perhaps in the past this area had been more densely forested with large trees which were cut by people or perhaps the conditions had changed enough for enough of the larger trees to die off and become dry wood. There was some evidence of large trees being cut down and there were some large trees still standing but generally the area was quite open.

The blue tarp, now loaded to overflowing with spruce boughs, was "packed" out. Sliding and stumbling down the steep bank we finally placed the boughs and the ridge pole into the scow and pushing out from shore we proceeded to yet another spot further down the river on the south side. Once again the bank here was high and steep but one could see even from the river that the ground was level up there and the trees were large and many. Another curious thing about this place was that there were trees along the bank which were de-barked for the first six feet. Proceeding up the bank one could observe how these trees were just the front markers of lines of de-barked trees which cut through the forest a hundred meters back to a small lake. I asked about this and they said another person had debarked these trees the previous spring. I asked if he had taken the bark off to build anything and he replied that he had just done that to kill those particular trees because they were good straight trees with a good grain. I asked if he had killed those trees for fire wood and replied that he did not know but probably for building things and for burning. Even though these trees were clearly marked as being someone's other people had already cut a couple of them down and we proceeded to do the same. After felling one of them, one the people said that these were not one hundred percent. At the time I did not know what he meant by this but I proceeded to hack the limbs off with and ax following the model of another

person. After the wood was de-limbed and cut into sections which began at the base at about five feet in length and ended at the top of the tree with a section about twelve feet long, the wood was hoisted onto shoulders and “packed” to the top of the bank where it was thrown down to the shore. The sections near the base were considerably heavier than those near the top even though they were cut into lengths to compensate for the difference in girth. Once again the reason for this I learned later. The first section of each tree was left behind at the insistence of the person who had cut up the wood because he said “not good dry-wood, too gummy.” What I though he meant by this was that this was the section missing its bark and the sap here had congealed into “sticky-

Another aspect of this field experience which makes the study of local forestry practices by means other than personal experience difficult is the way in which people use different technologies to harvest different trees and in different areas. When I first began to walk around the forests of the Mackenzie Delta, I often noted trees which were cut using different technologies. Ax cuts are very distinctive but the difference between the cuts made by chain saws or Suede saws are harder to discern; however, the cuts made by chain saws usually follow a pattern of cutting a wedge on one side and then cutting straight through the other side so the tree falls in a desired spot. With Suede saws the cuts tended to be flatter due to the human effort needed to cut through these large trees. What I assumed at that time, as did many other researchers, was that these differing technologies represented different time periods with the ax cuts being the oldest and the chain saw cuts being the youngest. What I know now is that this is an assumption which should be approached with care and stumps should be examined by some other means to determine the time period when they were cut.

As my experience has shown, technology such as chain saws which are heavy and require the use of expensive gasoline and lubricants are only used to cut down the large trees. When one needs to cut down small trees for brush or for poles, the weight of a chain saw makes it inefficient to carry up a bank when a sharp ax or machete can make fast work out of the job. I have seen trees measuring ten inches in diameter felled with a sharp ax in under two minutes without winding the wielder at all. Similarly, willows three inches in diameter are cut in just two strokes from a machete when it is sharp and used by someone who knows how. Furthermore, when people travel and set camps for the purpose of hunting, trees need to be harvested for a variety of

uses and a chain saw is often the first item left behind due to its weight and odd shape. So when a moose, for example, is harvested and a bed of willows is needed to pile the meat on to keep it clean it is an ax or machete which is used. When that meat is being packed out and a trail needs to be cut through the bush to make this process easier it also done with these hand held tools.[3]

Wood that is good to burn:

Robert Wishart

One of the presumptions that one must leave behind is that people treat firewood the same way everywhere. This may seem simplistic but many mistakes can be avoided and many questions answered by discarding this one presumption. Firewood in the areas where I grew up was often obtained in the green state and then stacked for a year or more to allow it to dry out. From a Gwich'in perspective this is an inefficient way of proceeding. One of the issues which I have heard researchers wonder about is why they often come across trees which are cut down and left behind. Sometimes the tree is cut down because it is in the way but most often it is cut for future use. When trees are cut in such a manner they are usually used later but many factors can change which will require leaving a log or tree to rot in what seems like wasteful manner.

The location where wood is taken from has a great deal to do with its quality. For instance, we had been burning wood taken from dead trees which had been felled the previous winter however, the ground in this location in composed of muskeg. This particular wood was dead but it was not completely dry. "Half green" wood like this refers to the fact that the trees are standing in a very moist environment which makes them wet even when left to dry for a year or longer. In addition, the wood was hard to split due to a sever twist in the grain[4] and the presence of several large knots on each piece. When burned this wood was slow to catch and never gave off much heat. "Good wood for night, but no good for this weather," said one elder woman. This finally motivated us to cut some "good dry wood."[5] The need for wood which catches quickly and burns hot and dry is more urgent during the fall when the weather is often cold and damp.

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[3]I have even seen large butchering knives put to these uses when the other tools are being used by someone else.

[4]180 degrees over less than a one foot length.

[5]The motivation to cut wood for camps often comes in the form of indirect and sometimes not so indirect instructions

The first morning we packed the chain saw and the ax into the boat and headed down river to the same spot where I had cut wood with other people. As these people had not talked to this particular elder where we had landed I can only assume that saw a similar landscape which made this place a desired spot to land and the forests above a good place to find dead wood. Perhaps the access looked easier but more probable is the shared ability to look deep into a forest and recognize good quality standing dead wood.

We proceeded to walk through these woods and this elder commented on the cuts made by other people recently. When he came upon the sections of the trees that we had left behind he told me to throw these down the bank as they were probably good to burn now. “Looks like these were cut a few weeks ago,” he said. It was at this point I said that these were the ones that we had cut earlier that summer. Looking at a tree ten meters from the stump he said, “what about that one, does it look good to you?” I replied, “
and did not give away the fact that I really did not have a clue how to tell the difference between one dead tree and another). “Hmm,” he said and proceeded to cut it down. When the tree had fallen he began to cut into sections which were obviously much too large to carry. “No good here, still too green,” he said. Cutting closer to the top he said, “good here, take these.” He maintained that when a tree dies it dries more quickly at the top than at the bottom so the top was good dry wood while the bottom, large logs would need more time to dry out and would be utilized at a later date by either this elder or someone else if nothing happened to make the wood undesirable such as the onset of “wet rot”--a certain amount of dry rot is tolerated and is a sign that the wood will be good to burn. This practice explains why the guy had left behind the bottom section of each tree earlier that summer and it explains what he meant by “too gummy.” As we walked further back into the woods, The elder looked at each tree speculatively. When we reached the lake we turned to the west and went to a stand of spruce trees which to me looked like they had been dead too long. The bark was covered by termite holes and those made by woodpeckers. For some reason this meant that they were rotten to me. Cutting the first one down, the elder declared, “best dry wood I’ve ever cut.” As he sectioned the tree I could see what he meant. The wood was dry and light in colour and when I hefted the first log onto my shoulders--a log larger

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from women. This is especially so in the case of fish camps which are the domain of the women who prepare the fish. This aspect of communication and action will hopefully become the subject of a future paper which I am considering.

than those I had previously carried--I discovered the difference in weight. After the had cut down several trees and sectioned them we packed sixteen “sticks” out and left the rest on the ground. “Tomorrow we’ll come back and all we need to carry is the ax,” said the elder. This explains why one often runs into places where there are trees which have been sectioned but not cleaned. As more wood is need you simply return to the same spot and clean the logs that you need and then pack them out. As in the cases above, a chain saw is too heavy and cumbersome to carry all the time so one does all the cutting at one time and then packs out the wood over a period of days, weeks or months. As conditions change and as human factors direct, there will always be some of the logs and whole trees left where they were felled so one should keep in mind that when these trees are found in the bush they usually indicate a tree which was already dead and then cut down.

To the Gwich’in perspective hauling out wood that is in poor condition for burning purposes is wasteful and could even be potentially dangerous if enough energy was used carrying out wood which could not be of immediate heating use. When “green wood” is desired for stoking a fire overnight it is usually cut from trees close to the campsite as it is exceedingly difficult to transport. Wood which is “dry” and good for burning is that way because it has dried standing up or on the ground where it was felled and people are very cognizant of the stages and degrees of this process as can be understood from the variety of terms used to describe desiccation. Therefore, one should never fall victim to the idea that there is no real planning involved it is just that at times it is far more efficient to peel the bark from a “good” tree and return a year or so later than it is to cut it up and haul the heavy green wood out of the bush. Thus instead of bringing the wood to a pile where it is dried, Gwich’in prefer to “store” their wood on the land.

In the above photograph taken by Robert Wishart at a spring goose-hunting camp a wide diversity of forest products can be seen. If one looks closely enough, one can see the manner in which spruce poles are put to use for two differing structures. The first structure consists of a canvas tent supported by four posts which are the remains of four small spruce trees which were cut to that height for just such a purpose. Attached as cross beams, are two sixteen foot poles. Then four more poles make up the supports for the twenty foot long ridge pole. In the distance in the photo a simplified teepee frame can be seen made out of another six poles. This frame was later covered with tarps and outside cooking was performed in it. Both the tent and the teepee have brush floors. Also in view is a cache made out of another four trees which were cut down for firewood and their eight foot stumps left standing in order to support the deck of the cache. Outside of the shot is another, larger and higher cache. In this area where people pass the spring hunting waterfowl the possibility of a flood is very real and should it become necessary people will move their belongings and indeed themselves onto the caches to wait out the high water. In the foreground of the picture there is a spruce log waiting to be cut for firewood and around it are pieces of split wood that look like kindling. These short thin pieces were actually being used to repair a hole in the keel of the fiberglass canoe also in the shot. The pieces were forced into the hole and then trimmed off. Once the wood swelled up in the water the canoe became watertight. Inside the tent but out of the picture were many other implements made from spruce and willow including stretchers for muskrat skins, racks for making drymeat, makeshift seats, etc. No other photograph that we have taken looks at first like very little, but in fact captures an argument about continuing reliance on forestry products for the persistence of activities on the land.

Concerns about the Past[6]:

Ara Murray

As can be ascertained from the preceding words by Robert Wishart, there is a great deal more to learning about forestry practices than just going into the communities and asking a predetermined list of questions. One of the ways of discovering what people consider to be proper behaviour while on the land is to listen for stories about things which happened in the past which were not considered to be good. In the case of forestry in the GSA, it is in the past that the most intensive use of wood occurred. Both Robert Wishart and I have talked with elders who point out that in the past the missionaries, schools, traders, prospectors and steam ship companies had a devastating effect upon the forests. Through Gwich'in eyes these Europeans and their institutions practiced forestry activities which were indiscriminate and over-zealous. As Rapoport (1994:460) points out, the perception of chaos in an environment stems from "misunderstood, not liked or felt to be inappropriate" occurrences. One elder talks about how the steam ships required an immense amount of wood to fuel the burners. Many people, including some Gwich'in, earned a great deal of money cutting wood for these ships. For example one elder from Tsiigehtchic talked about how he earned eight dollars per cord of wood and that the ships required one cord per hour to operate. He does not mention which ship he was cutting for and it seems that they all had different burning rates depending upon the tonnage of the ship and the efficiency of its burners. One can guess from the ships' logs that this elder's estimates may be on the conservative side but it is difficult to determine. For example, it can be determined that the SS. Wrigely (Hudson's Bay Company, SS Wrigely--Ships Log 1890-1893: 1892) burnt 261.5 cords of wood during the open-water season in 1892 by counting how many cords were taken aboard every time the log mentions that wood was picked up but exactly how many sailing hours this represents is difficult to say. The archival information available on the S.S. Distributor mentions that with a seven foot long firebox, the ship burned between three and three and a half cords per hour (Green 1987, Candler 1998:5). The S.S. Distributor, being one of the later steamers, was presumably more efficient than the earlier ships; therefore one might conclude that the earlier ships burned more than three

[6]The initial retrieval of archival documents was undertaken by Craig Candler and a report was written by him concerning the availability of the materials (Candler 1998).

cords per hour. However, this may be incorrect as sizes of steamers varied and fuel efficiency was probably not a priority at that time.

The written record regarding the history of forestry in the Gwich'in Settlement Area is restricted to archival materials reflecting European activities in this area and the surviving records for both the Hudson's Bay Company and the steamships are far from complete. "HBC wood lot inspectors went up and down the Mackenzie inspecting the wood lots counting how much cordwood had been cut" (Candler 1998) but unfortunately the reports of these inspectors have been destroyed or lost along with other valuable archival material. The majority of the remaining materials are stored in the Hudson's Bay Company Archives in Winnipeg. These materials include trade post journals, trade post account books, reports on districts, and, most promisingly, steam ship's logs. To this date I have found no mention of any forestry activities in the account books, which leads one to believe that such activities were not paid for by the post. Furthermore, the post journals make it fairly clear that people who were already in the employ of the company were responsible, as one of their duties, to provide cordwood for the post's use.

The trade post journals vary greatly in the quantity and quality of the information made available depending on the authors' inclinations. Generally speaking however, the post journals are fairly sketchy concerning forestry practices. When they do mention such activities it is in relation to the wood procured for the posts' own use and does not give one a clear idea about where wood was being selected. For example, this quote is indicative of the information available: "Sandy, George, and McIver cutting and hauling fire wood. Wind south. Ther[mometer] 25 below zero." (Hudson's Bay Company, Peel River Post Journal 1881-1886: March 1, 1884). As one can see the information is sketchy but contains some important clues. The post journals mention when men went to cut cordwood or fire wood for their own use but not where they went for this wood. They did not travel any significant distance away from the post however as it would have been recorded if they had. The post managers very diligently recorded where their men were and all of the trips that they went on including those which were just overnight. The men employed at the post were also responsible for producing the wood for the post buildings, their own houses, scows, skiffs, and occasionally the Roman Catholic and Anglican Missions.

There is no archival evidence suggesting that Gwich'in people did any cutting for these posts which would seem to confirm the local idea that it was by local standards the "visitors" who cut down the forests. The post managers kept track of all Native people passing through the post, where they were from, and what business they had at the post. Since the authors were consistent in describing the Native involvement in all activities it leads one to expect that any role that they may have had in the cutting or hauling of wood would not be overlooked. For instance, an entry that mentions a post employee being assisted by natives in sawing logs into stove lengths (Hudson's Bay Company, Aklavik Post Journal 1930: March 14, 1930).

The reports on districts are useful in that they provide the physical layouts of the trading posts so that one can ascertain where forestry activities may have been at their most intense during these periods. They also give clues to the physical structures of the buildings. For instance, the 1896 report on the Peel River district mentions that the post buildings were built out of spruce logs with spruce bark on the roofs. It is mentioned in a post journal entry that dead wood was laid for foundations of houses (Hudson's Bay Company, Peel River Post Journal 1881-1886: May 28, 1885).

As the steamships were fueled with wood there is ample mention of when, how much, and the rough locations of the wood which was acquired for the ships. What is not mentioned is who was cutting the wood, although they hint at the fact that these activities were occasionally undertaken by people under the direct employ of the steam ship companies. They also do not mention where the wood was being cut, they merely indicate roughly where the woodpiles were. The following example is similar to a vast repertoire of other examples: "Left wood pile at 1.50 Had to stop again at 3.00 and take on 6 more cords wood and left at 4.30 Cloudy Flint River at 11.30 Chicago at 18.15 Wood pile on River 22.30 took on 6 ½ cords Left at 23.40"
S.S. McKenzie River--Ship's Log 1921-1922: June 30, 1921).

It is mentioned in the trade post journals that Hudson's Bay Company men spent some time at wood camps cutting and hauling wood for the steam ships. For example, "Paul Cho and Pierre return from cutting cord wood and reported having hauled twenty-five cords of steamboat wood" (Hudson's Bay Company, Peel River Post Journal 1913-1914: April 10, 1914). Although the post journals document how the men were generally employed it does not record where the wood camps were located.

Oral information gathered in the summer of 1999 is supported by the Elder from Tsiigehtchic who cut steamer wood for eight dollars a cord. An elder from Fort McPherson said that Gwich'in people who cut cord wood for steamers would be paid upon the arrival of the steamers. This work was not based upon a contract but was open to anyone with the time and resources to spend cutting cord wood. It was interesting to see a similar incentive system used in Fort McPherson for the construction of a new Co-op store in 1999. Rather than have people come in to the GSA and start logging, the Co-op community committee decided to open the job up to their own community in order to create jobs for anyone who wanted to work and to avoid any possible risk of clear cutting. They offered one hundred dollars per suitable log to any Gwich'in individual and set a limit of ten logs per person.

An important factor in determining the extent of the wood taken for the steamships is obviously how many ships were operating and for how many years. In the archive material reviewed for this purpose only two ships logs were available to be studied. These ships, the SS. McKenzie River and the SS. Wrigley were both run by the Hudson's Bay Company. The SS. Wrigley was the first Hudson's Bay Company steamer, it ran from 1887-1907 and was replaced by the SS. McKenzie River in 1908. The SS. McKenzie River reports using 154 cords for one trip in 1921 (Hudson's Bay Company, S.S. McKenzie River Ship's Logs 1921). Although these ships generally made two trips per season, they did not always travel all the way to the Peel River post area. The SS. Distributor was run by Alberta and Arctic Transportation Co. Ltd. which was taken over by the Hudson's Bay Company in 1924 (Hudson's Bay Company, Archive Search File – S.S. Distributor). The logs for the S.S. Distributor were not available through the archive. I found three other steamers, the "Eva", the "Northland Trader", and the "Liard River" mentioned in the post journals (Hudson's Bay Company, Peel River Post Journal 1913-1914: July 8-10, 1914, Aklavik Post Journal 1929-1930:4).Although these comments did not offer any information as to which company operated each ship or how cord wood was provided for them, the dates of the entries are available. The post journal for Peel River records that three different steamers arrived in July of 1914 (Hudson's Bay Company, Peel River Post Journal 1913-1914: July 8-13, 1914). This indicates that traffic during this time was fairly heavy and points to substantial fuel use.

By putting together information found in various archives I have attempted to recreate a fictitious steam ship journey through the GSA. Ideally, the ships logs would be enough to simply add up how many cords were taken to travel a certain distance. Unfortunately it became obvious that a lot of guess work was necessary to do this. For example, some times it was not recorded how many cords were taken on board and sometimes massive discrepancies between seemingly identical trips make it difficult to calculate how much fuel was used. As mentioned above the S.S. Distributor used approximately three and one half cords per hour. Using an index of the distance between Mouth of the Peel and Fort McPherson I was able to extrapolate that it took roughly four hours of up-stream travel to go twenty five miles, and roughly three hours of down-stream travel to go the same twenty five miles. Knowing how many hours it took to go a specified distance, I figured out that it took fourteen cords to travel twenty five miles which equals approximately 1.8 miles per cord of upstream travel. Going downstream it would have taken 10.5 cords to go the same twenty five miles which equals approximately 2.4 miles per cord of downstream travel.

On this fictitious trip I imagined a steamship entering what is now the GSA on the Mackenzie River and traveling downriver to the Peel and then all the way down the Peel to Aklavik for an approximate downstream distance of 250 miles. From Aklavik the same ship would have traveled upriver to Fort McPherson which is approximately 100 miles. From McPherson the same ship would have traveled 25 miles downstream to Mouth of the Peel where it would have entered the Mackenzie River and traveled 200 miles upstream to the border of what is now the GSA on its way to Fort Good Hope. On this simplified trip, which assumes no side trips or backtracking of any kind, a steamship visiting the then four important trading areas of Arctic Red River, Aklavik, Mouth of the Peel, and Fort McPherson could expect to travel 275 upstream miles and 275 downstream miles within what is now the GSA. This steamboat would have used approximately 152.7 cords for its upstream trip and 114.6 cords for the same distance going downstream. For a total of approximately 267 cords for that fictitious trip. The estimate of three and one half cords per hour is an approximation as we do not know factors such as the force of the flow of the Rivers, the tonnage of cargo, and the weight of barges that they may have been pushing etc. All of these factors plus the make of the ship itself could lead to substantial variations in these figures. However, even if these estimations are incorrect by a factor of 0.5,

this still indicates that a considerable amount of wood was used by these ships over the years. The indicated time period beginning with the S.S. Wrigley in 1887 and ending circa 1945 when oil began to replace wood as fuel. There is archive material that records that the S.S. Distributor converted to oil in 1944, but it I cannot say if each steamer in use at that time converted to oil or continued to burn wood. It is difficult to determine how many trips each steamer made using the limited ship's logs but the logs for the S.S. Wrigley and the S.S. McKenzie River mention making one trip per season within the GSA (Hudson's Bay Company, Archive Search File - Steamer Wrigley 1937, S.S. McKenzie River Ship's Logs 1921,1922).

We are trying to locate the "rough cut blocks" that the steam ships were supplied from but this has been difficult using only the archive materials for reasons mentioned above. Another aspect of trying to determine the places where wood was cut for these ships is that they mention at times that wood was taken from "islands." The problem here is that the rivers are constantly changing due to currents, silt deposits and, most importantly, ice movements. When traveling by boat in this area people sometimes run into stumps where the river has flooded out areas in which people used to cut wood. It is then entirely possible that these "islands" no longer exist. For instance, in the Peel River Post Journal for April 13-15 1914 (Hudson's Bay Company, Peel River Post Journal 1913-1914: April 13-15, 1914). there is mention of men cutting wood for steamships at a camp located on "the island." They supposedly took 25 cords of wood from this location. The wording "the island" indicates that the island may have been a familiar site and therefore was probably near the post. There are some small islands around the location of this post; however, it is doubtful that any of them could have supplied a stack of wood four feet high, four feet wide and two hundred feet long. Either this island has vanished or one of the smaller islands was much larger at one time and has eroded away.

By using archive material and oral information, I am able to conclude that the cumulative impact of supplying fuel for steamships in the GSA has been heavy. The effects of schools, trading posts and missions should also be considered as these involved construction and heating for a number of people. Unfortunately, it is not possible to estimate how much wood was taken by these groups as it was more often than not overlooked in the archive material available. A considerable amount of construction has been done in the major settlements in the GSA which also drew on the resources of the forests.

Hopefully other written sources will reveal themselves as archive materials are explored further. It should be noted however that oral sources will continue to be important for providing the context for the historical component of this project. There are many other aspects of the history of forestry in this area as there were missions, building projects in Inuvik and the other settlements, dozens of cabin sites, and sawmills which need further exploration through written and oral sources. One valuable written source is the diary of the Archdeacon Robert MacDonald.

Early Forestry Activity at the Peel River Post:

Derek Honeyman

Aside from Hudson Bay archives, journals written by those residing at posts offer enlightening evidence of early forestry activity. One such journal, from which I will draw upon, was written by the Archdeacon Robert MacDonald. This will supplement existing archival records in the descriptions of *who* was cutting trees[7] and the quantity of wood cut. Furthermore, as Murray notes above, it is difficult to ascertain exactly how much wood was cut for the provision of steamer fuel. It is anticipated that this problem is remedied, as MacDonald describes one such steamer voyage, noting the lengths of stops to cut wood and the lengths of sailing time.

In 1862, Robert MacDonald came to the Peel River Post (Fort McPherson), which had been opened by John Bell in 1840. MacDonald's journal entries from this early period mention very little of forestry activity by either Europeans or Gwich'in peoples. This is not unusual, as he was traveling much of the fall of 1862 throughout the region and no wood was being collected on a regular basis for either building purposes or for firewood. Indeed, the earliest mention of anything resembling forestry activity is his encounter with three Fort men who were looking for birch to make snowshoes with, about 25 miles from Fort Youcon (MacDonald, November 21 1862). The use of birch for such a purpose is repeated again in February of 1866: "Five of the Fort men went off on a trip for birch, for sleds, snowshoes & c." (MacDonald, February 5 1866).

[7] It would appear that there exists some controversy to this question. Though I will investigate this controversy in greater detail below, for the present it is worthwhile to note that in previous archival descriptions (Hudson's Bay Company Archive B.157/a/5, B.200/a/39. B.157/e/2, B.157/a/7, RG3/5/9, B.378/a/1), there is no evidence of Gwich'in people cutting wood for posts. As I will demonstrate, Robert MacDonald does describe local Gwich'in people cutting wood for personal use (ie. his), and describes Europeans and Gwich'in people cutting wood for larger projects (ie. the Church).

In 1869, five Fort men went again for birch, this time to Beaver Lake, for the same purpose (MacDonald, January 14 and 22 1869).

These inclusions may not seem important, but they do indicate the preferred type of tree for implements such as sleds and snowshoes, and the season of harvest, winter. Another seemingly unimportant inclusion is the use of willow as the preferred fuel for fire as the following indicates: "He (Mr.Jones) says that they had last night only a few small willows to make fire with" (MacDonald, March 31 1863) and "A wretched camp tonight: only a few half dried willows to make a fire of" (MacDonald, September 16 1865). However, it should be noted that both of the following examples are instances of camping, and throughout the journals, MacDonald indicates the preferred fuel source to be birch at the Mission.

Upon careful examination of the MacDonald journal entries, two aspects of the Mission's forestry activities emerge as important; the steamer's consumption of wood on a voyage made in the summer of 1870, and the general activities of those MacDonald contracted to cut wood for both his personal use and for the construction and repair of Mission buildings. For the moment, and I will elaborate further below, I say "contracted," rather than "hired," for MacDonald is not always clear on whether or not the Gwich'in men who cut wood for him were compensated the same as the European men were. Indeed, at times it would appear that the Europeans that worked for him were in fact hired for the sole purpose of cutting and hauling wood. MacDonald kept track of much he paid for such services.

MacDonald stated that his party was preparing for the departure from St. Michael's for Fort Youcon (MacDonald, July 18 1870) on the steamer Yukon (Wootten 1996: 39).[8] It appears that Captain Riedell of Hutchison Kohl and Company was the officer on board. They departed on July 21, 1870 at 9 p.m. and weighed anchor 4 hours later with "two boats in tow; one with goods for Nulato and Nuklukait and the other for Anvick" (MacDonald, July 22 1870). They went on for three hours and then stopped for wood, waiting for the tide at 8 p.m. The next morning they stopped at 8 a.m. for wood and resumed at 4 p.m. (MacDonald, July 23 1870). Until their arrival

[8] As for why MacDonald was at St. Michael's, he states: "Mr.Mercier kindly made me an offer today of a free passage to St.Michaels in Norton Sound and back to Fort Youcon should I like to visit the Indians down the river. He also kindly offers me the services of his interpreter who can speak the Indian language spoken by the Indians inhabiting the banks of the Youcon from this spot to the mouth of the Youcon in Norton Sound. A rainy day" (MacDonald, June 8 1870).

at Ninklukait on August 17, this pattern of stopping for wood and resuming roughly 6-8 hours later is fairly consistent. On July 24, they stopped for 6.5 hours for wood, sailing for 7.5 hours, and then stopping again for wood. On July 26, it took 8 hours to collect enough wood for 7 hours of sailing time.

The steamship did not always stop for such long periods of time. For example, MacDonald states that on July 30, they halted for 4 hours to collect wood, and then resumed sailing for five hours. During such sojourns, he kept busy as the following demonstrates: "Halted at mid-day for wood near a camp of Indians. Assembled them and taught them the things concerning the kingdom of God. Went on at 5 p.m. till 10" (MacDonald, August 2 1870) and "Went on at 7 a.m. Halted at 1 p.m. to take in wood, near a camp of Indians. Had them assembled and spoke to them of Christ and His glorious salvation. Went on at 6 p.m. till 10 when we halted for wood" (MacDonald, August 3 1870).

While it appears that five hours of wood collecting is good for roughly four hours of sailing for example, this may not be the case. He does not mention how many men were cutting wood, nor for that matter, how much wood was cut. Furthermore, consideration must be taken for the following reasons: the steamer was hauling two other boats laden with goods; at the beginning of the voyage he mentions waiting for the tide; and, perhaps the crew was waiting on him after the wood collecting was completed while he was preaching in the camps. The last is speculation, but it demonstrates the difficulty in ascertaining the quantity of wood cut for the purpose of steam fuel.

More importantly, and as Murray has demonstrated with the Hudson's Bay ship logs, this record fails to mention *who* is cutting the wood. I will address this critical question in the subsequent section.

Primary instances of forestry activities that occurred while MacDonald was at the Peel River Mission were; cutting for the purpose of erecting and repairing buildings, and the cutting and hauling of firewood. The first indicator of large scale activity that MacDonald writes about takes place on March 12, 1875: "75 boards sawn this week."[9] It is not until October 7, 1875 that MacDonald states that the "Big House" is being prepared for winter and, at the same time, a large

[9] This took place at Fort McPherson, the Peel River post, which MacDonald made his mission in 1874 (Sax and Linklater 1990: 30).

amount of “board sawing” takes place. Responsible for this sawing is a carpenter named Alexander Bain. He is periodically assisted with this job by various people: Andrew Nise, John Stewart and Andrew Flett. By October 11 1875, 70 boards have been sawn, by October 23, 96 boards. On October 25, Bain “went to square logs for boards, but spent all the day in looking for good trees,” and it is not until February of 1876 that we hear of him again: “A sawpit made in the woods by Bain and Boucher, J. Flett hauled logs to it” (MacDonald, February 18 1876) and 3 days later, “Sawing of boards begun” (February 21 1876). In March, we finally see the purpose of this activity: “579 boards sawn for Mission House. About 200 more wanted” (MacDonald, March 24 1876). There appears to be different individuals helping Bain in different ways; those with dog teams assisted with the hauling, and others assisted in sawing. Those that helped Bain with hauling were J. Flett and Tityiuthuco (MacDonald, March 28-29 1876).

As of yet, no mention of payment has been made. Furthermore, it appears that all work on the Mission House has been postponed by late March of 1876, just as it appears that all work was postponed by March 12 in the preceding year. It is until February 2, 1877 that MacDonald resumes his narrative about Bain and the preparation of slabs for the mission. At this time however, a new figure has emerged, and it is evident that he gets paid for his work. This is the first time MacDonald writes directly of an individual receiving payment for his work: “Richard Barber working for the Mission since Monday. He has been paid 2 skins tea for work done during my absence” (MacDonald, January 31 1877). Throughout February, Richard Barber cuts and hauls wood, hunts, and gets sent for meat. On March 1, MacDonald writes “Engaged Richard Barber to work for half a month longer.”

On March 16, Bain decides that he does not wish to work any longer and MacDonald pays him “8 lbs tea for working at night”. At this juncture, it appears that harvesting for the House is completed and the next large project is the 1878 construction of the church. Before I discuss this however, MacDonald makes mention of more individuals who complete the ‘final’ touches to the House, yet there is no indicator of payment amount. For instance, Vuntlesi and Sitetsyothi were mudding the exterior of the House on September 18, 1877 and Alexander Stewart was mudding the interior on the same day. On September 21, MacDonald writes “A. Stewart and Vuntlesi employed as yesterday” and then on September 29, “Employed Wm. Vitrekwa. He was mudding the Mission House today.” This is significant because MacDonald

does not write how these individuals were paid, yet he does for Alexander Bain and Richard Barber. Furthermore, the word 'employed' may not possess the same connotations we are familiar with. For example, in reference to two later workers, he states "Above men employed as yesterday" (November 6, 1877). These men had already been contracted (Reeve and Beren) and it is possible that 'employed' simply means 'kept occupied' but not for a wage.

In November of 1877, preparations were begun for the construction of the church. Unlike the building of the House, MacDonald does not write of how many boards were prepared for the church. With Alexander Bain and Richard Barber gone, Samuel Beren and John Reeve have taken over with the hauling and squaring of logs. "Two men have been engaged for 2 years for this Mission to work at the building of churches for here and LaPierre's House. They are Samuel Beren and John Reeve. The latter will sign a contract tomorrow" (MacDonald, October 15 1877). They are assisted in the hauling by Kwuchyodh and his team. By April of 1878, all the timber for the church has been procured and on May 21, the lower frame was raised. However, there is no indication of how much any of the aforementioned individuals were paid.

Before I proceed with the records concerning the accumulation of firewood, there are a few points that should be made regarding the previous data. For one, it appears that all harvesting for both the church and the Mission House took place in the winter, usually between October and late March. As I will demonstrate with the following discussion on firewood, many times the men would cut many loads first, and then haul them out later. As Wishart notes above, this pattern of cutting, and then hauling later, is still occurring. Often MacDonald would write that one load was cut and four loads were hauled in a day (assuming that someone had been cutting days before), further demonstrating that is easier, and less time consuming, to haul, than it is to cut. The second point I wish to make, and one that begs further analysis, is the reported lack of payment for those local men who assisted those who were hired to build the Mission House and the church. We know that Barber and Bain were paid and that Reeve signed a 2 year contract to build both churches, but MacDonald makes no reference to Kwuchyodh, Vuntlesi, or Alexander Stewart (to name a few) receiving payment. Is it possible that these men were members of the community and expected to help out, especially if they had a dogteam that could be put to use?

The cutting and hauling of wood for fire is yet another aspect of Post life that MacDonald wrote diligently about. The time MacDonald spent at the Peel River post spanned close to four decades and every winter mention is made of how much wood is cut. The end result is a tremendous amount of data that will hopefully solve some of the problems addressed above.

The first mention MacDonald makes of getting firewood is on February 23, 1877: "The 2 cords of wood from Boucher has lasted seven days. Bought another cord from him today." Knowing that 1 cord lasted roughly 3-4 days, it is expected that on February 27, 1877, he writes "Richard cutting and hauling fire-wood." However, he makes no note of how much he paid Boucher for the 2 cords. Entries similar to the previous are repeated throughout the forty odd years that MacDonald was at the Peel River post and I will now attempt to make some relevant points.

Once again, as with the retrieval of wood for building purposes, the majority of wood cut for firewood took place throughout the winter and was hauled by dogteam. In the rare instances of collecting wood in the summer, it was transported by raft. From *where*, MacDonald does not specify, but by *who,* he does. For instance, he writes "Paid Tziacha for firewood he has procured me" (MacDonald, September 12 1877) and a day later "Paid Nite (sic) for firewood 3 M.B. one still due him" (MacDonald, September 13 1877). On September 17, he writes "Sent three lads for a raft of firewood, to remain away two nights. Three Indians have procured some firewood for me, but it will not last long." Two days later, the three lads returned without the raft because the wind was too strong to build it. John Reeve and Kwuchyodh were actively hauling wood for MacDonald until, it appears, December of 1878. During this time, much of this wood was cut by Vitrekwa and Paul Gilbert. "Vitrekwa has cut 30 loads firewood" (MacDonald, December 28 1878) and "Kwuchyodh hauled 4 loads firewood" (MacDonald, December 30 1878). Though MacDonald rarely states how much he was paying these individuals for their services, the fact that he *wrote* about how much each either cut or hauled leads me to assume that he was paying them depending on that. Furthermore, it is also possible that he was paying them by the load. This is possible as he states "Vittrhekkwa cut firewood in the woods, 4 loads he says" (MacDonald, October 23 1890).[10]

[10] It is possible that this is Vitrekwa and the spelling was changed by either the author or someone else.

Another aspect of MacDonald's writing that leads to me conclude that he paid by the load is that he appears to be very conscious of when someone, presumably in his employ, hauled or cut wood for themselves. On September 18, 1879 he writes "A servant, John McLean came to do general work." MacDonald writes "McLean cutting firewood for himself" (October 25 and November 1 1880) in comparison to "McLean cutting firewood" (October 30 and November 6 and 8 1880) indicates that the author was keeping track. McLean worked until May of 1881 and MacDonald does not mention him again, leaving no indication of where he went.

Another indicator of MacDonald paying for wood is the following entry:

> Co's sleds with all the men set out for LaPierre's House. James Kwutul deserted along with them to go to his father at Sans-pareil's House. His doing so has left me in a very uncomfortable position without any one to depend on to attend to the house in procuring firewood and water. He did not stay a month and a half with me: and he has received from to the value of 47 M.B. in payment and 9 M.B. gratis. He took the whole with him. Poor boy he shows very great thoughtlessness and heartlessness. I might have employed another. May he be mercifully led to do right (MacDonald, January 6 1882).

It appears that James Kwutul was supposed to have stayed in MacDonald's employ for a month and a half, but the only mention of any type of agreement between the two comes from November 26, 1881: "James Kwutul came to pass this winter with me the day before yesterday."

Other indications of payment for firewood is "Samuel and Vittrhekkwa cut firewood. Paid the latter 5 MB for 5 days work" (MacDonald, October 3 1891) and "Gave Peter Vunttlessih scissors 3 MB for 15 sled loads wood out in the woods...Gave Alex. Stewart a comforter 2MB for 7 loads wood in the wood" (MacDonald, December 17 1891).[11] And then again on December 18, "William Thomson has cut 5 loads wood for a comforter." Such statements, rare as they are, indicate that MacDonald did pay for services rendered when it came to procuring firewood.

Curiously, MacDonald also made repeated note of cutting firewood either *inside* or *outside.* For example, on January 5 and 6, 1891, he refers to Nitte cutting wood at the door, in contrast to January 6 and 7 when he refers to Hawksley and Nitte cutting wood in the woods.

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[11] As is the case with Vittrekkwa, Vunttlessih may be the Vuntlesi mentioned previously.

From about 1889 throughout the remainder of his stay, MacDonald kept track of who was cutting the wood, and for whatever reason, where that person cut the wood (at the door or in the woods). Perhaps, as I postulate above, MacDonald paid a separate fee for hauling as compared to cutting. If this is true, then it is possible that his journal also acted as an account book of sorts. This would explain why he stated how many loads were cut, how many loads were hauled, and where they were cut. If the firewood was cut at the door, there is no hauling needed and the pay would reflect that.

What can be concluded from MacDonald's records is that while MacDonald was meticulous about recording who cut and hauled wood and whether or not it was for themselves or for him, he often neglected to state how much he paid. With the exception of the above examples, the reader often is forced to 'read between the lines'. I have given some indication that MacDonald may have paid depending upon whether or not wood was cut or hauled, and perhaps, by the load. Another problem is whether or not the men who resided within the community were expected to haul firewood for the church and the Mission House and provide wood for the erecting of these buildings for free. We know that MacDonald 'hired' out, as he did with Alexander Bain, but it is unclear as to if those local men were paid. Perhaps the 'spiritual' good they were providing for themselves and the community was payment enough.

As the above discussion demonstrates, areas around posts were intensively harvested for the purpose of construction and maintaining posts, as well as for fuel. In regards to the steamer voyage MacDonald describes, the quantity of wood cut, and more importantly, who cut the wood, is elusive.

Locally identified impacts:

Robert Wishart

In order to gain a more complete picture of the pressures which have been placed on the forests in the Gwich'in settlement area, a clear picture of history needs to be completed. My colleagues have gone a long way in completing this picture. A picture of human impacts through time can begun to be seen where prior to European contact and then for a few decades after, forestry activity was related directly to the day to day living patterns of the First Nations people who inhabited this area. Wood would have been needed for heating and a myriad of construction

purposes including the erection of fences and corrals for the purpose of hunting caribou. Then starting in the late 1800's waves of European missionaries, traders, prospectors and trappers began to dramatically increase the pressure on the forests as they fueled their ships, built their settlements, and heated their buildings which by local standards were large and used wood inefficiently. While the shift to burning fossil fuels in homes in the settlements should have lessened the impacts, one has to also realize that the search for these fuels in the GSA has resulted in thousands of seismic cuts which criss-cross the delta. Continuous throughout this history has been the reliance on forest products by those who stay on the land and their concerns about past miss-uses of the forests are directed at those European impacts listed above. However, there are impacts which are arising in the present which are also talked about with an increasing tone of urgency.

In the present and near past people have begun to notice some changes in the forest that they understand as being chaotic. The Gwich'in people I spoke with use the word "wild" to describe natural phenomena which they consider to be negative or detrimental to people's welfare. Thus when people go hunting and the animals do not give of themselves they may talk about them as being wild. Usually there is a degree of human agency in this wildness, so that things act wild due to negative human actions (Wishart 1999).

During my period of fieldwork I had the opportunity to listen to many concerns which people have about the present impacts on the forest. Unlike in many parts of the country where notions of "clear-cutting" are paramount, most of the Gwich'in concerns stem from real observations about climactic change. People have noticed that the weather is considerably warmer than it used to be and they attribute to this a variety of problems. Chief among these is the observation about the river banks eroding at a rapid rate. People say that it was always common to see riverbanks collapsing a little bit but nothing like today. Pointing to one place on the bank where several trees had fallen into the water, one elder said, "never used to see things like that." Another elder replied, "look, that sun it cooks the bank." These two elders were referring to the belief here that the heat from the sun has melted the permafrost and allowed huge sections of forest to fall into the river. People also believe that the heat has dried out some sections of the forest and killed too many trees. A certain number of standing dead trees is a desirable situation

from a local perspective as I described earlier; however, there is the notion that the general health of the forests is at risk.

One parcel just south of eight miles is of particular concern. The trees here are by local estimation “dying or cooked.” Forestry biologists at first concluded that these trees were the product of winter kill or frostbite which occurs when the trees do not have time to harden off prior to a sever cold stretch in the weather. Several elders from the community do not accept this preliminary hypothesis. They have observed a spreading of the effects of this damage over the last few years. This particular problem continues to be a subject of study by the Fort McPherson Regional Resource Council and the Gwich’in Renewable Resource Board and the conclusions are still pending although solar radiation now seems to be a key suspect.

Having spent the spring of 1999 on the land with several members of the community I was able to record several instances of people talking about how their “country” is going wild. The weather during this spring was characterized as being poor. The ice did not let out until late, the latest anybody had seen, and the geese were acting wild which kept people from having successful hunts. The anxiety caused but such strange fluctuations in weather and animal behaviour have people very concerned that something is going drastically wrong due to improper behaviour of people somewhere. The fact that the water was several feet below its normal level has people looking southwards--upriver--to seek a cause for these “wild” events.

Conclusion:

What has been attempted to demonstrate through the preceding stories is how forestry activities amongst the Gwich’in are highly involved ventures which take place around other practices on the land. David Anderson, in summarizing this aspect, maintains that it is probably best to ask questions taking this into consideration if one is to get valuable information. He has stated that it is better to ask where a good place is to camp than to ask about good places to cut wood because the former invariably will mean that the latter has already been taken into consideration and it approaches more closely the mind-set of the Gwich’in themselves. Thus, in a sense this paper makes an argument about methodology as each activity on the land may include different forestry practices and the longer one stays the more one learns about this issue.

Many of the anthropologists who do research with First Nations communities have expressed a degree of frustration when it comes to describing their methodologies to those outside of their circle. I have heard these methods described as "hanging out" and "being there, listening and then thinking a lot" by senior anthropologists who have no problem teaching seminars on anthropological methods but do have a problem describing their own actions when in the field. In actuality "hanging out" means a great deal to those who have experienced this type of fieldwork. What it means is that one allows oneself the latitude to actively attend to the discourse.

Basso (1983) and Cruikshank (1990a; 1990b) are clear on their position that anthropologists and other scholars doing similar work should be prepared to listen to the Native teachers who are willing to talk to us about their landscapes so that we may come to a better understanding of how our teachers, rather than ourselves, construct the World. Thus, it is not only that scholars must keep their ears open but also that they must allow a good deal of latitude within their methodologies so that their teachers will tell them what they know through a process that makes sense to them.

One of the complaints of Gwich'in elders is that they keep getting asked the same questions by outsiders over and over. They complain that people are not really listening to their answers or that people are asking too many of the wrong questions at the wrong time. Usually what happens in such cases is that elders tell people that nobody wants to go out on the land anymore. I understand such statements about culture loss as being directed at the interviewers for asking questions and using questionnaires relating to subjects which should be answered on the land.[12] Interviewing in this manner is a chore for the people as they prefer a process of showing and telling on the land. Gwich'in expect to be paid for the information that they give when they are put into the context of a foreign interview; however, when one accompanies them onto the land and tries to learn by their standards, one learns a great deal more and one is also respected. I believe that one should be careful to examine what the difference is between the frustration with researchers in the formal office sense and the marked openness of learning by "living the

[13] Even those who have stressed to me the importance of paying elders the most and who

[12]I hypothesize that these statements are not only aimed at bad researchers but they are also directed at the younger generations who spend too much time "in town."

[13]This phrase was used by one elder who was visiting her sister at Eight Miles one day when we were invited over for

have demonstrated the most concern about people getting "ripped off" change their tone when on the land. Here they talk openly, telling me stories and sharing knowledge about the land and the animals without hesitation. In some way I feel that this place is friendly in regards to knowledge because here people are living the knowledge staying on the land and eating wild foods on a daily basis. Here knowledge surrounds you in the daily activities of the people procuring food for themselves and for those who rely on them. Here knowledge can not be abstractly thought of,[14] here knowledge is in the doing and in the stories that are told about it.

Now that a relationship of learning has been created the categories of concern to other scholars can be more easily adapted in order to produce results of interest to the more "scientific" disciplines while the authors can maintain the place of learning about Gwich'in "places." Many other questions regarding selection processes need to be answered such as average diameter of preferred trees and the change in this figure over time. Other areas of the GSA also need further study. For example, no real work has yet been done in the highlands where the rivers originate and flow through. Many of these areas were historically important for other harvesting practices and it will be interesting to see the impact this has had on the forests in the past and how they are being used in the present. In addition to the historical inquiries to be made which were listed in the paper there is a hypothesis that much of language used by Gwich'in today to describe firewood might have originated with the Scottish traders. Thus are "sticks" called this because they were a unit of wood used in the burners of ships? The coming field seasons should prove to be promising as the information only becomes richer as one learns more of the "language" of local landscapes.

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dinner. She was intrigued by the idea of a white guy staying at this place and learning by listening and doing rather than by interviewing in a formal manner.

[14]Which is not to say that the knowledge is not symbolic in content and abstract in meaning; rather, that it is applied to situations on the ground level.

References Cited:

Basso, Keith
1984 "Stalking with Stories." In E. Bruner (ed) Text, Play, and Story: The Reconstruction of Self and Society. Washington: AAA.
1988 "Speaking with Names: Language and Landscape Among the Western Apache." Cultural Anthropology vol3:99-130.
1996 Wisdom Sits in Places: Landscape and Language among the Western Apache. Albuquerque: University of New Mexico Press.

Brightman, Robert
1993 Grateful Prey: Rock Cree Animal-Human Relationships. Berkeley: University ofCalifornia Press.

Candler, Craig
1998 Report to the Gwich'in Renewable Resource Board, NWT: HBC Archives Research. (Unpublished report).

Cruikshank, Julie.
1990a Life lived like a story. Vancouver: University of British Columbia Press.
1990b "Getting the Words Right: Perspectives on Naming and Places in Athapaskan Oral History." Arctic Anthropology. 27(1): 52-65

Fienup-Riordan, Anne
1994 Boundaries and Passages: Rule and Ritual In Yup'ik Eskimo Oral Tradition. Norman: University of Oklahoma Press.

Green, Nicholas
1995 "Looking at the Landscape: Class Formation and the Visual." In Eric Hirsch and Michael O'Hanlon (eds.) The Anthropology of Landscape. Oxford: Clarendon Press.

Green, Oscar
1987 "North". Manuscript. Hudson's Bay Company Archive. E.160/1

Hudson's Bay Company
1881-1886 "Peel River Post Journal." Hudson's Bay Company Archive. B.157/a/5
1890-1893 "SS Wrigely Ship's Log." Hudson's Bay Company Archive. B.200/a/39
1896 "Reports on Districts-Peel River Post." Hudson's Bay Company Archive. B.157/e/2
1913-1914 "Peel River Post Journal." Hudson's Bay Company Archive. B.157/a/7
1921-1922 "SS McKenzie River Ship's Log." Hudson's Bay Company Archive. RG3/5/9
1929-1930 "Aklavik Post Journal." Hudson's Bay Company Archive. B.378/a/1

Hudson's Bay Company
Archive Search File – Steamer Wrigley
Archive Search File – S.S. McKenzie River
Archive Search File – S.S. Distributor

Hunn, Eugene
1996 "Columbia Plateau Indian Place Names: What Can they Teach Us." Journal of Linguistic Anthropology vol6(1):3-26.

Ingold, Tim
1987 The Appropriation of Nature. Iowa City: University of Iowa Press.

Kwon, Heonick
1993 "Maps and Actions: Nomadic And Sedentary Space in a Siberian Reindeer Farm." Ph.D Dissertation, University of Cambridge.

MacDonald, Robert
1862-1903 Personal Journal. Yukon Archives.
McGregor, Gaile.
1985 The Wacousta Syndrome: Explorations in the Canadian Langscape. Toronto: University of Toronto Press.
Naylor, George Ball
1912 “Excerpts from the Diary of George Ball Hudson’s Bay Company Archives. E.92/1
Rapoport, Amos
1994 “Spatial Organization and the Built Environment.” In Tim Ingold (ed) Companion Encyclopedia of Anthropology. London: Routledge.
Sax, Lee and Effie Linklater
1990 Gikhyi: One Who Speaks the Word of God. Whitehorse: Diocese of Yukon.
Schlichtmann, Hansgeorg
1985 "Characteristic Traits of the Semiotic System: Map Symbolism." The Cartographic Journal 22:23-30
Tanner, Adrian
1979 Bringing Home Animals: Religious Ideology and Mode of Production of the Mistassini Cree Hunters. New York: St. Martin’s Press
Wishart, Robert
1999 “A Preliminary Report on Caribou Hunting Practices Among Gwich’in Residing in and around Fort McPherson, NWT.” unpublished manuscript.
Wootten, D.T.F
1996 The Coming of Christianity to the Kutchin. Canterbury: St. Augustine’s College.