

CULTURALLY MODIFIED TREES OF THE NECHAKO PLATEAU

CAMBium UTILIZATION AMONGST TRADITIONAL CARRIER (DAKHEL) PEOPLES

By Amanda L. Marshall

Introduction

This study investigates, using archaeological and ethnographic data, the significance of cambium within the seasonal round of Carrier First Nations of the Nechako Plateau, and how culturally modified trees (CMTs) fit into Carrier archaeology. The article argues that cambium was not used solely as an emergency food, but rather as one of a variety of foods that the Carrier consumed throughout the year, which contributed to the seasonal round by providing a springtime food full of carbohydrates, sugars, and body cleansing attributes. The archaeological data comes from two forestry cutting permit (CP) areas in northern British Columbia: CP MK-15 (site FjSg 12) and CP 541 (site GgSp 55). Ethnographic data obtained from interviews conducted with 12 elders from various Carrier communities was also analyzed.

The study area falls into the region of the Nechako Plateau of interior BC, which is traditionally the territory of the Carrier Athapaskan First Nations (Figure 1). The Nechako Plateau is bordered by Babine and Stuart lakes to the north, Prince George in the east, Smithers to the west, and the Blackwater River to the south.

Culturally modified trees are one of the most common archaeological subsistence features found in the province of British Columbia today (Carlson 1998a). They are also widespread along the northwest coast and interior plateau regions of the United States (Bergland 1995), and have been extensively documented in Sweden (Niklasson et al. 1994; Zackrisson et al. 2000).

The inner bark tissues of the lodgepole pine (*Pinus contorta*), or *chundoo dze* in Carrier (Central Carrier Linguistic Com-

mittee 1973:11), was an almost universal springtime food of the interior First Nations (Turner 1997:53). Cambium collection involved removing the outer bark of the tree, and then scraping the cambium layer from the trunk and collecting it. According to ethnographic accounts, May and June were apparently the best months for cambium collection, as the sap runs during this time (Albright 1984; Bond and Russell 1992; Central Carrier Linguistic Committee 1973; Glynn-Ward 1932; Hall 1992; The People of 'Ksan 1980). This process of cambium stripping created a scar on the tree; the tree would continue to grow and the scar would slowly heal. It is these scars that we find today as archaeological features or CMTs (see cover).

The nutrient-rich cambium of the lodgepole pine provided a variety of vitamins and minerals, as well as dietary fibre (Turner 1997). So far there has been little documentation of the nutrient content of lodgepole pine cambium, but Turner and Kuhnlein (1991:13) expect that it would be high in sap content. Using maple sugar as an example, they would expect high carbohydrate/sugar energy values for inner-bark foods. In fact, the dietary supplement pycnogenol, a mixture of flavonoids with antioxidant activity, is derived from the bark of *Pinus maritima* (R.J. Marles, personal communication 2000).

Research Methodology and Design

Two sources of data were analyzed to answer the above research questions: both ethnographic (oral histories) and archaeological data.

Ethnographic Data

Several elders from the Carrier communities of Tachie, Middle River, Portage,

and Nak'azdli agreed to be interviewed for the oral history project. They are: an elder from Fort St. James who requested anonymity, Russell Alec, Sebastian Anatole, Francesca Antoine, Josephine Austin, (the late) Camille Joseph, Walter Joseph, (the late) Annie Mattas, Celestine Thomas, Francis and Catherine Williams, and James Williams. The elders ranged in age from approximately 60 to 105 years, were of a traditional upbringing, and had all had first-hand experience collecting cambium.

Elders were interviewed on five general topics relating to CMTs: (1) cambium collection and its use as an emergency food; (2) the correlation between the different scar types, scar shapes, and scar top shapes; (3) the relationship of girdled trees and choppings to streams and trails; (4) the side of tree chosen for bark removal; and finally (5) how CMT densities correlate with the natural topography of the land.

Archaeological Data

Archaeological data was collected from two CMT sites referred to as CP 541 or GgSp 55, and MK-15 or FjSg 12 (see Figure 1 for the site locations). These two sites were chosen because of their accuracy in methodology and detail of data collection, which are described below:

CP 541

CP 541, or GgSp 55, is a large site, with an estimated 8,000 CMTs located within the block boundaries (Figures 2 and 3). This site is of the Harvest Area typology and is located east of Babine Lake, adjacent to the Carrier village of Old Fort. Because fieldwork was concentrated within the cutting permit boundaries, the full distribution of the site remains unknown. Carlson (1998b:3) believed that

the site distribution probably continues to the west toward the shore of Babine Lake, and north and south of the block. Due to the large number of CMTs located within the block, not every tree could be recorded, so an adequate sample of data was obtained. Systematic transect strip sampling (transects spaced 100 metres apart), and plot sampling every 100 m along the transect strips (20 m in diameter), were used to estimate the overall density and total number of CMTs present in the blocks (Carlson 1998b). A total of 237 dating samples were obtained, providing an approximate 3-to-4-percent sample of dates for all the CMTs present at the site. Using this transect/plot sampling methodology, an estimated total of 36,375 CMTs may be present at GgSp 55. Scar dates from the site range from AD 1785–1890.

CMT descriptive data was collected in each plot and includes: Block; Plot; CMT#; Dead/Alive; CMT Type; No. of Scars; Scar #; Scar Morphology; Side of Tree; Slope Angle; Slope Direction; DBH (diameter at breast height of CMT); Height Top of Scar; Height Bottom of Scar; Length; Width; Depth (lobe thickness); Scar Shape; Top Shape; Cut Marks; Basal or Bark 'v'; Lateral Cut Edge; Cut Branches; Choppings; and Scar Date. See Figure 4 for the recording guidelines developed by Traces Archaeological Research and Consulting Ltd.

CP MK-15

The second site examined is cutting permit MK-15, or FjSg 12, located in the Vanderhoof Forest District, just south of the Cheslatta River. The site, first documented by Father Morice in the early 1900s, is much smaller than GgSp 55 and is of the Trail typology: i.e., small clusters and/or linear clusters of CMTs distributed along a known Carrier trail (Carlson et al 1999:1). Data was collected from this site using the same transect strip and plot sampling methodology as that

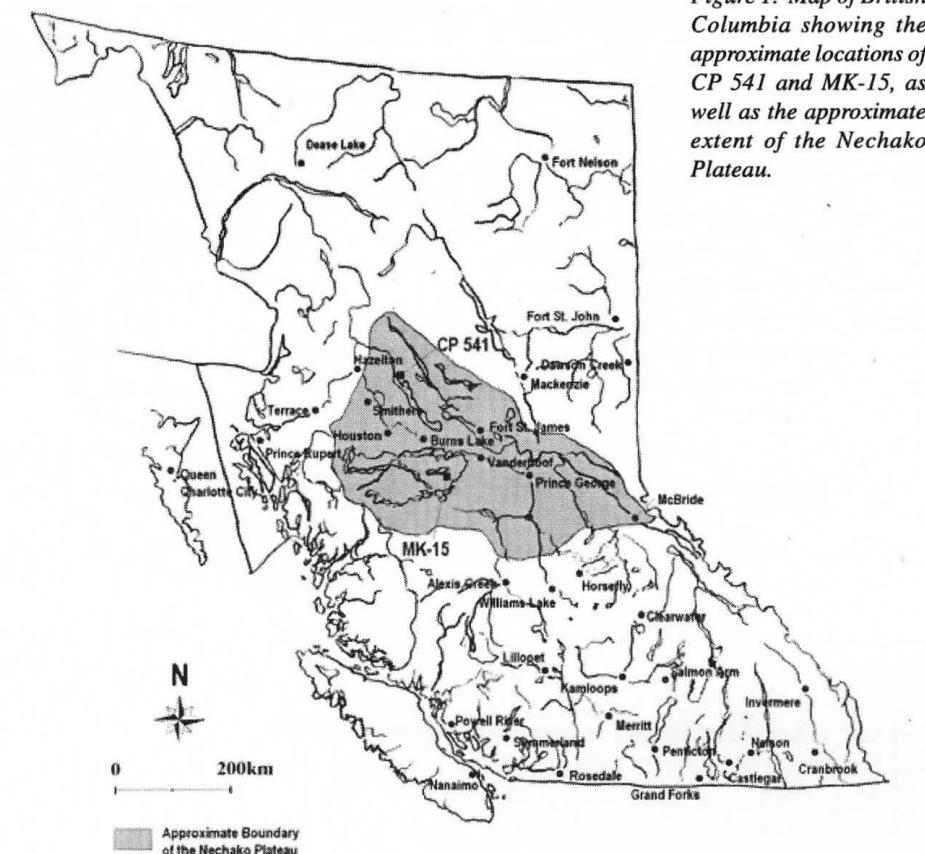


Figure 1. Map of British Columbia showing the approximate locations of CP 541 and MK-15, as well as the approximate extent of the Nechako Plateau.

used in CP 541 (Figure 5). This sampling methodology, successful in CP 541, did not work well in recording a large sample of CMT descriptive data (as a majority of the CMTs were not located within the plots), and only worked well in recording distributions along the trail. An estimated total of CMTs at the site was 648 to 839. Scar dates from this site range from AD 1847 to 1931.

Analysis and Discussion

CMT Frequency Dates and the Use of Cambium

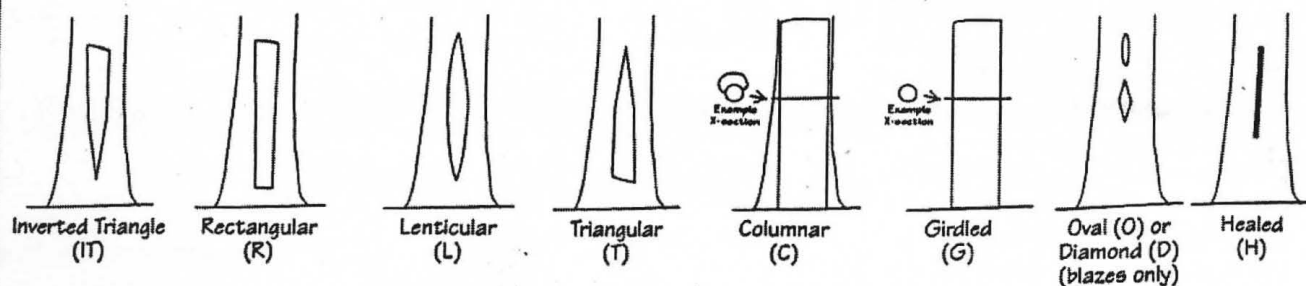
In 1998, Carlson (1998a) suggested that CMT frequency dates may correlate with fluctuations in the Carrier seasonal round

(Figure 6). Similarly, dates obtained from sites GgSp 55 and FjSg 12 were initially entered into frequency histograms, which showed there were several peaks in frequency dates during certain years (Figures 7 and 8). This, along with the idea that cambium was often eaten as a starvation food, created the hypothesis that peaks in frequency dates may correlate with historic documentation of hard times due to fluctuations in other food resources such as salmon. Dates were then plotted on the original block maps. Several different subpopulations were apparent based on the age of scars in CP 541, somewhat defined by Blocks 1/4, 2, and 3. A box plot (Figure 9 and Table 1) was created, to demonstrate the apparent differences in the distribution of dates across the blocks. From the box plot we can see that a majority of the scars located in Block 1/4 cluster around AD 1847. Differences between the dates in Blocks 2 and 3 are not as easily defined. Dates from Block 2 cluster around AD 1803, and Block 3 around AD 1805, yet both have dates considerably older than the average scar date from

	1 ST QUART	MAX	MIN	3 RD QUART	MEAN	S
541-1/4	1828	1890	1785	1851	1847	20.67413
541-2	1802	1835	1793	1809	1803	10.71288
541-3	1803	1846	1790	1814.75	1805.5	12.15149
mk-15	1866.5	1917	1847	1886.5	1872	15.98945

Table 1. Summary of scar age range by subpopulation, Sites GgSp-55 and FjSg-12.

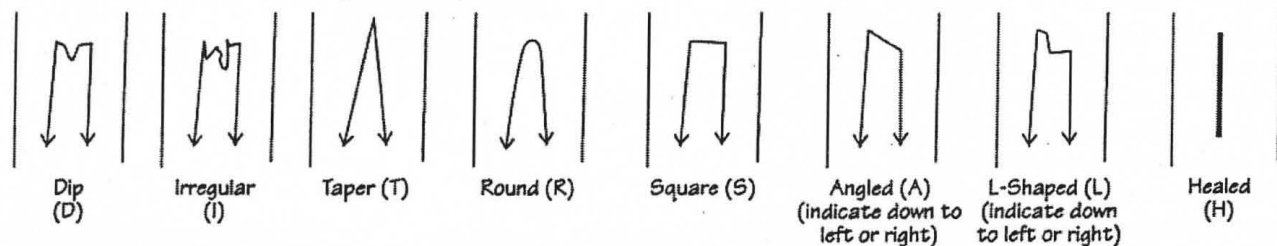
CMT Scar Shapes



Any scar which does not conform more-or-less to any of these shapes should be called "irregular (I)" and should be described in comments and/or sketched.

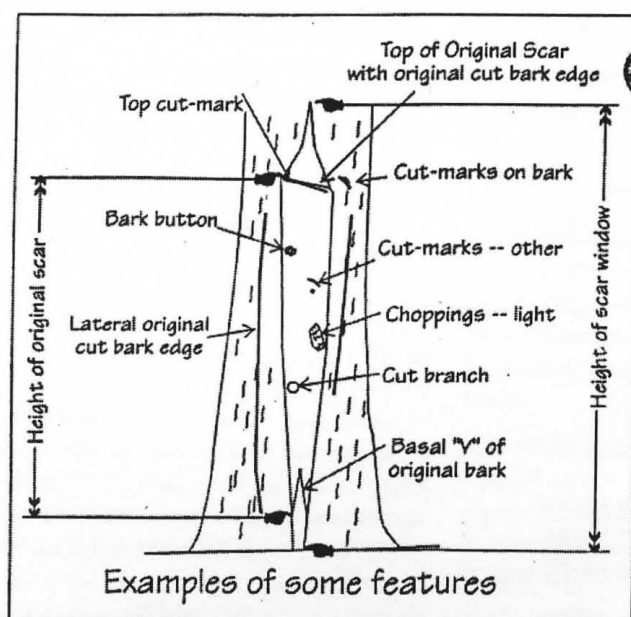
Shape describes overall shape of the scar window. The shape/form of scar top can vary highly. Describe top separately (see illustrations below).

CMT Scar Top Shape/Form



Top Shape describes either Top of Original Scar or Top of Scar Window, depending on overall morphology of scar.

Only use Irregular description if no other shape describes scar top.



Refer to back of sheet

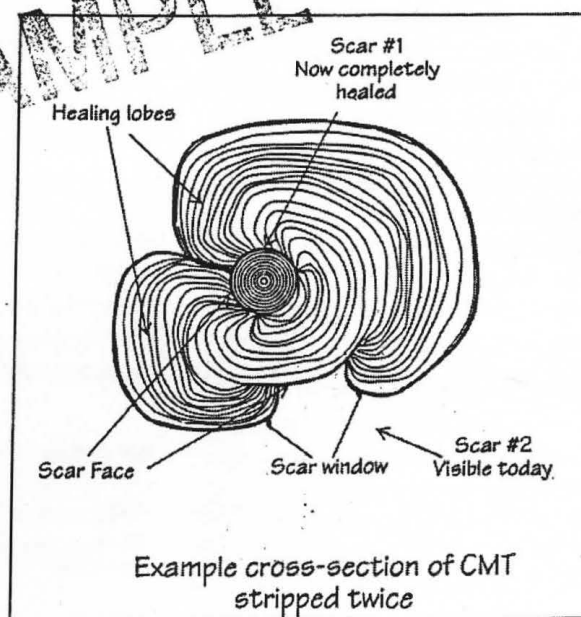


Figure 4. TRACES Recording Form Guidelines for CMTs.

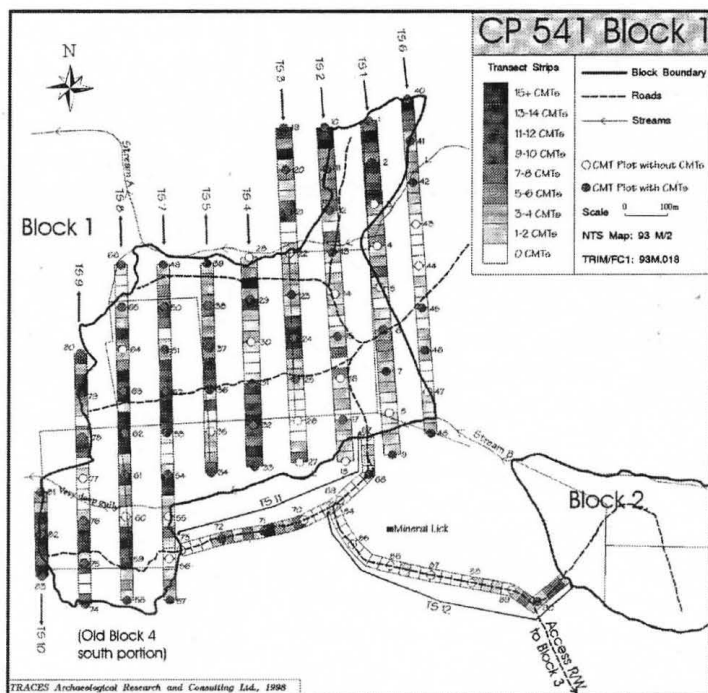


Figure 2. Map of CP 541, Block 1 (4) showing transect strips, CMT plots, and CMT densities (Carlson 1998b).

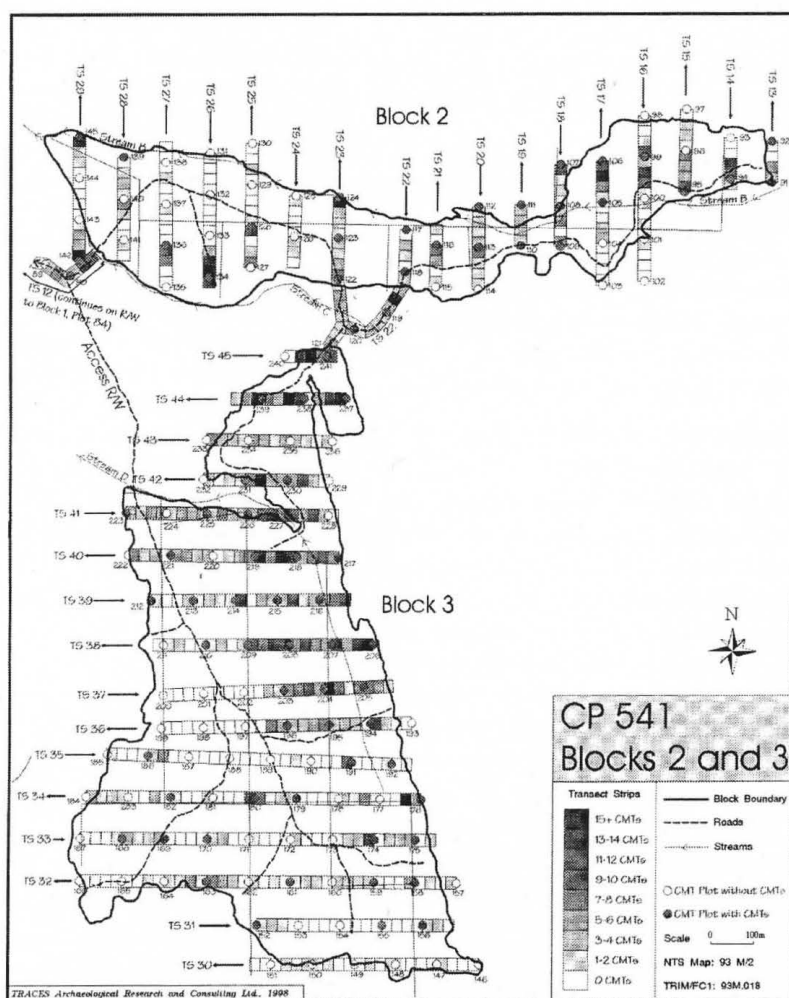


Figure 3. Map of CP 541, Blocks 2 and 3 showing transect strips, CMT plots, and CMT densities.

Block 1. Dates from MK-15, or FjSg 12, represent an even later time period, with an average date of AD 1872. A "one-way" analysis of variance (ANOVA) was performed, which confirms that the dates from the different subpopulations vary significantly.

Three possible scenarios are suggested by the author, which could explain what these fluctuations in dates represent (Smashnuk 1999). Situation One is as follows: there were certain time periods when other food sources were short in supply or certain social or subsistence factors were facilitating the use of emergency foods. In Situation Two, there were certain time periods in which a particular area was chosen for cambium collection as opposed to other areas. And finally, in Situation Three, fluctuations of dates were caused by an alteration in diet, for only a short period of time, and for no apparent reason. This final scenario makes little sense, because the Carrier traditional diet is thousands of years old; it is unreasonable to assume that a group of people would alter their diet for no apparent reason.

The author felt initially that Situation One was probably the most likely scenario for explaining fluctuation in scar dates. However, after reviewing the oral histories and the archaeological data throughout the course of this research, it has become more apparent that Situation Two is the most likely scenario for describing cambium use in the seasonal round.

Prince (2001) studied increment core dates from several sites in the Nechako River drainage. He found that CMTs located well above Cheslatta Falls, an area that historically lacked salmon spawning grounds, show a marked difference in the clustering of dates from other areas of the drainage. The increment core dates from this area demonstrate tight, discrete clusters that seem to reflect short-term, intensive collection from discrete patches of forest. He believes that gaps in cluster dates may mean other patches of forest were utilized, similar to what is described in Situation Two.

A closer look at how the dates are distributed across the landscape in GgSp 55 reveals an entirely different perspective in the clustering of frequency scar dates. Rather than more trees being stripped in certain years, what we see are certain ar-

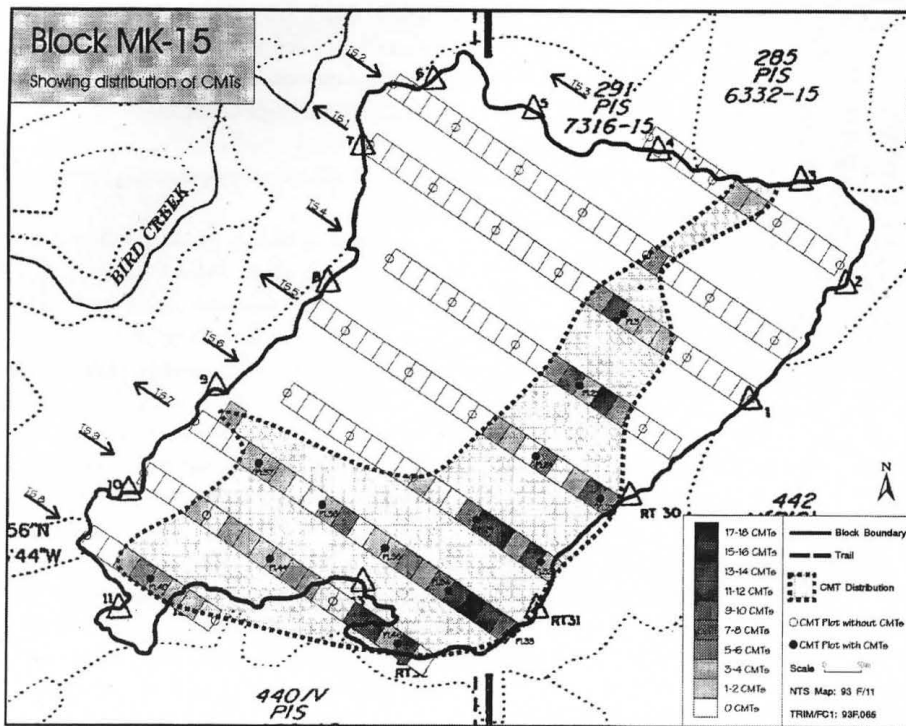


Figure 5. Block MK-15, showing transect strips, CMT plots and CMT densities (Carlson et al. 1999).

eas of the forest having scar dates that cluster around the same time period. One possible explanation for a particular area chosen for cambium collection may be the age of the forest relative to fire history. It has been described in the literature that a certain age and size of tree was preferred for cambium collection (Gottesfeld 1992:150; Zackrisson et al. 2000:107). Therefore, it could be that the relative age of a forest and its growth and fire history may have had a significant effect on which areas were considered "ripest" for cambium collection.

Although there may have been times when Native people had scarce supplies of salmon, there was little threat from starvation despite what fur traders have written. Morice (1895:73) notes that a short-fall in any major resource was made up with fish species that "seldom failed," such as minnows, sculpins, and suckers from neighbouring lakes and streams. Rabbits and other fur-bearing animals could also have been resorted to. Resources were variable from area to area and from year to year, but periods of extreme food scarcity for any specific village were rare (Bishop 1983:149). Alternate food resources and inter-village trade provided the means of preventing death by starvation. The elders interviewed all suggest

that a failure in the salmon run would not be cause enough for starvation amongst the Carrier people.

In contrast to the "starvation food" concept of cambium use (Situation One), the elders describe the cambium's importance in a variety of ways: from a nutritional perspective and as a traditional way of refining one's blood; as a dessert (candy) or a delicacy; as a source of energy used while travelling; and a handy laxative.

Girdling Trees and Using the Forest in a Value-Added Way

Figure 10 is an example of where the unrecorded trails were located in CP 541. Girdled trees (bark strip scars that span the entire circumference of a tree) were plotted onto these maps to determine their locations relative to the trails and streams in the blocks. A hypothesis was that girdled trees would be found near areas where they could be easily relocated at a later date. It turns out that the girdled trees are found either next to the trails or very close to the streams.

A review of the oral histories tells us that girdling to the Carrier was a common practice during the historic period, as this provided people with a source of firewood later on once the girdled trees had expired.

Scar Shapes and Top Shapes

A comparison was performed between the two sites, GgSp 55 (Harvest Area Type site) and FjSg 12 (Trail Type site), to determine the differences in frequencies of CMT scar shapes and scar top shapes. This was done using a "two-sample" Chi Square test to compare the observed frequencies at each site with expected frequencies. Results of this analysis reveal that, with the two distributions of scars having been drawn from a common population, there are distinct similarities between the observed frequencies of scar shapes and scar top shapes at both of the sites. Interestingly the "lenticular" scar shape appears to be the most common scar shape at both sites, second would be the "inverted triangular" scar shape, the third most common scar shape is the "healed" scar, and fourth ranked is the "rectangular" scar. For scar top shapes, the "tapered" top is the most common, second is the "rounded" top, third is the "irregular" top, and fourth is the "healed" top. For counts on "angled" scar tops, the majority of them were "angled to the right." A person using their right hand, which is often the dominant hand for an individual, will make the cut angled down toward the right hand side.

An analysis of the different scar shapes and scar top shapes at a site may allow for identification of individuals, families, and groups through "style" analyses (Muir and Moon 2000). The scar shape produced by a person stripping a tree represents individuality, in respect to different families or clans who may have been taught to strip trees in certain ways. The elders interviewed suggest that people from different areas do things different ways, probably following the teachings of their elders.

CMT Types

Already described are the girdled (G) CMTs, which fall into the CMT type stripping (ST). Three other CMT types commonly found in the interior of BC are blazes (BL), choppings (CP), or other (O). It was hypothesized that blazes and choppings would occur more frequently at Trail Type sites than at Harvest Area Type sites, and two pie charts were created to demonstrate the differences between the two site types (Figures 11 and 12). Included in this analysis were blazes

and choppings, as well as strippings that contained choppings on the scar face (classified as ST/CPs). These charts show a clear difference between the two sites in this regard. At GgSp 55, 96 percent of the CMTs were of the stripping typology, and only 4 percent were blazes. At FjSg 12 on the other hand, 82 percent of the CMTs were of the stripping typology, 8 percent were blazes, and 10 percent were strippings with choppings.

The obvious explanation for FjSg 12 having more blazes is that it is a Trail Type site, as opposed to a Harvest Area Type site. Also, the large number of ST/CPs at FjSg 12 indicates that people were collecting kindling while travelling. Elders confirm this and suggest that this dry, pitchy wood obtained in this way would allow the travellers to light a fire even if it was raining.

Side of Tree

The side of the tree refers to a compass bearing in degrees, or azimuth, for the direction the scar is facing. There are conflicting opinions from elders that make reference to a tree's side with the greatest

amount of sun exposure as being the best side for cambium collection. Only four out of twelve of the elders from this study said that the sunny side of the tree was the better side to strip for cambium. The remaining eight elders said that it did not matter which side of the tree was chosen.

A hypothesis is that, if it matters which side a person collects cambium from, this will be represented in the archaeological data. To test this hypothesis, a "one-sample" Chi Square test was performed to determine if the "side of tree" distribution was uniform, and there was no selection for any particular side of the tree. As a result of this test we can *reject* the null hypothesis that only chance has caused any difference between expected frequencies and observed frequencies. In all four blocks, there seems to be a slight favouring of the northwest, north, and northeast sides of the tree compared to the more southerly sides. In all cases, the north side of the tree appears to be the most commonly selected side. In the spring the sun is shining towards the south side of the tree at noon, and the north side of the tree is always slightly shaded. Therefore, it

seems that in sites GgSp 55 and FjSg 12 there was a preference for stripping cambium from the shady side of the tree.

Similar results have been found by Zackrisson et al. (2000:102) in that the north, northwest, and northeast sides of the tree were the most commonly chosen sides for bark removal among the native Sami of northern Sweden. Of trees with multiple cambium strippings, the north side appears to be chosen first and the south side was subsequently chosen. They mention that in Sami culture, north and south directions have a strong influence on various cultural and religious phenomena. Zackrisson et al. suggest a relationship between the south side of the tree trunk, which was exposed to the sun, and the shaded north side may have theoretically influenced which side was peeled for bark removal. They also describe how living pine trees are treated with respect, and that before a tree was cut, "the spirit of the tree had to be informed so that it could safely leave the tree" (2000:106).

Stryd (1997) explains that the shady side of the tree usually has fewer branches, suggesting that this side of the tree would

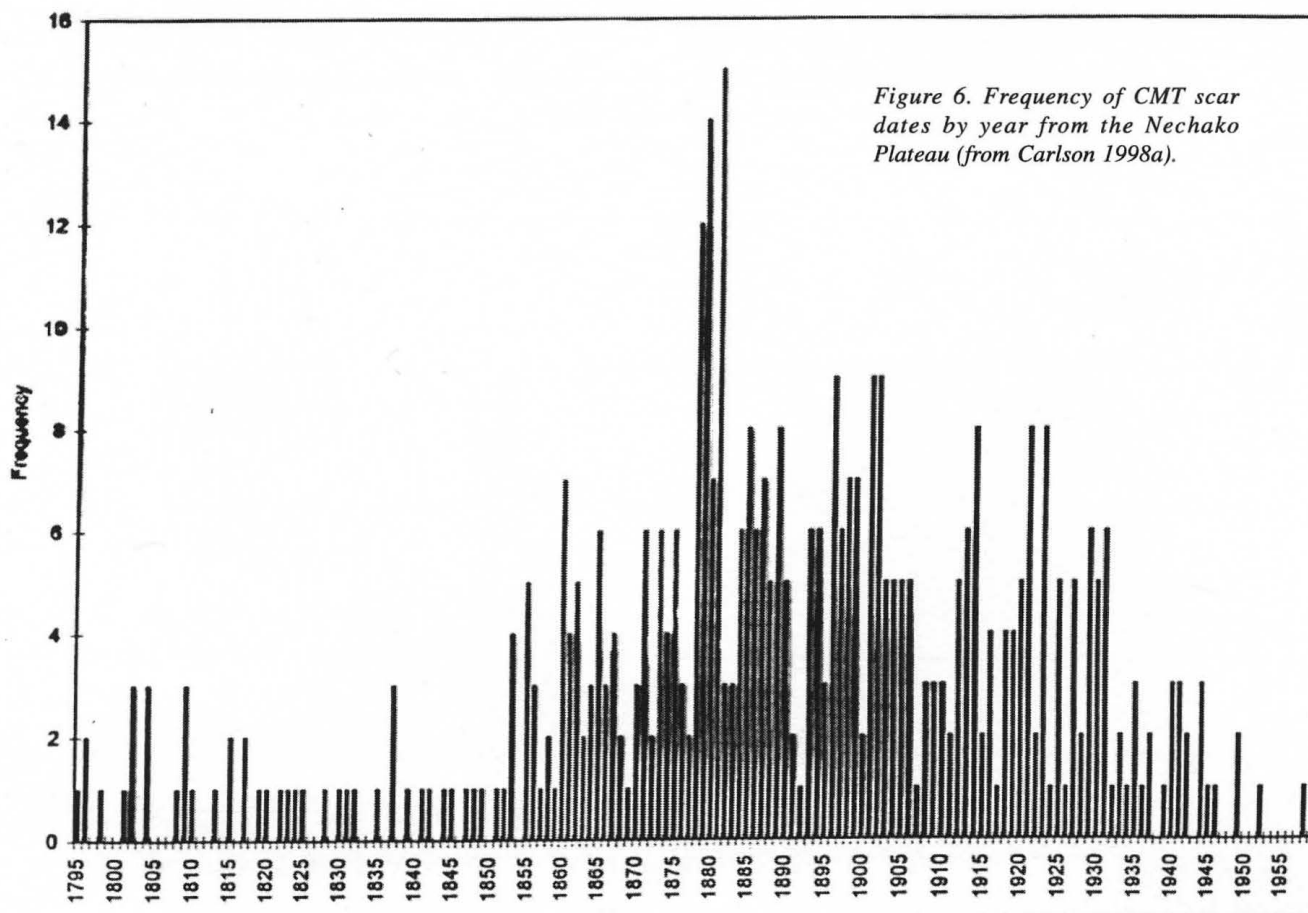
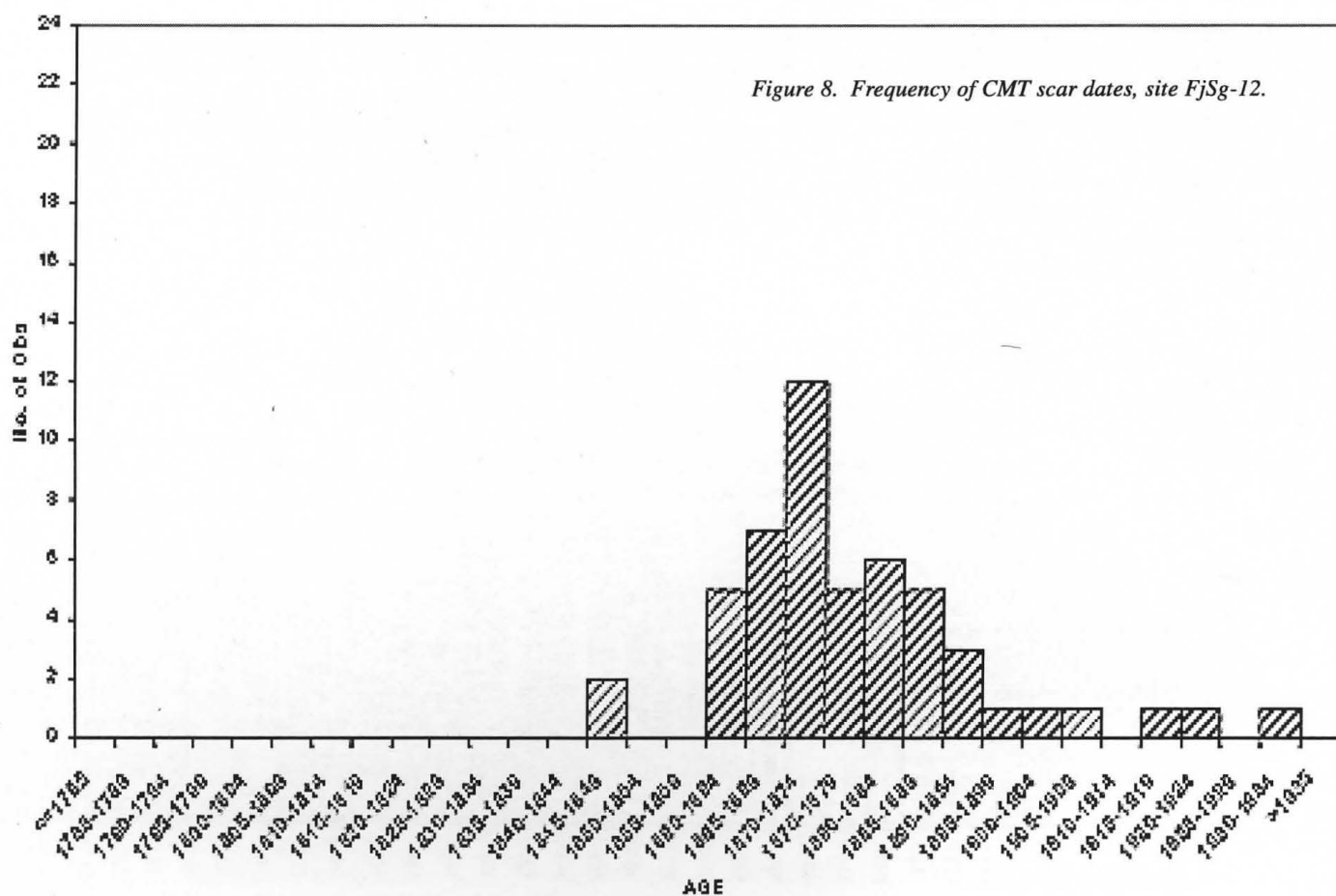
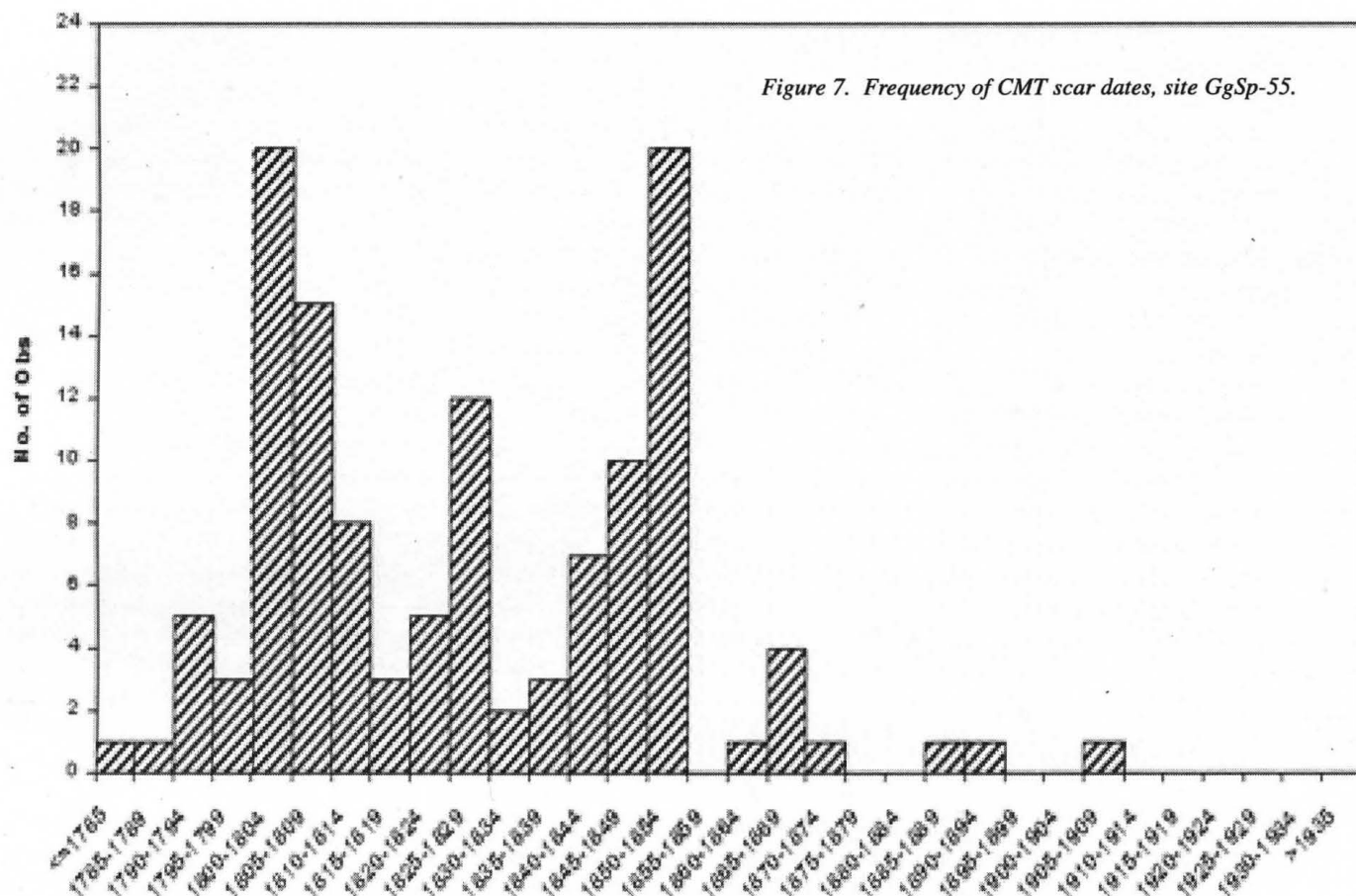


Figure 6. Frequency of CMT scar dates by year from the Nechako Plateau (from Carlson 1998a).



be more easily stripped of its bark. Also, when a tree is located on a significant slope, Stryd suggests that the most likely selected side of tree is going to be on the upslope. In Block 1 of CP 541, there is a deep gully located at the southwest portion of the block, which is easily recognizable by the stream flowing through the bottom. Plots located along this gully with a steep slope were used in this analysis. Out of 61 scars, only 33 (54 percent) were found facing upslope. On the other hand, if one is comparing just the CMTs in these plots that have only one scar feature, then 8 times out of 11 (73 percent), the scars were found to be on the upslope.

Locations of CMTs

The next topic of discussion is whether certain natural features on the landscape will affect where CMT densities are concentrated; for example, near streams, trails, or other resource acquisition sites. To determine this, recorded numbers of CMTs in each transect were plotted onto the block maps to visually represent areas with greater densities. In Block 1/4 the reasons for CMT densities clustering

more heavily in certain areas of the block are not obviously apparent. However in Blocks 2 and 3, densities of CMTs closely follow Stream D (running northwest), Stream C (also running northwest) and Stream B (running west). These areas were probably natural travel routes to and from the lake, since it would have been easy to follow a stream to and from a village without getting lost. The deep gullies and streams in Block 1/4 do not seem to have had much of an effect on where CMT distributions are located. This portion of the block is also much closer to the lake, and people may not have been as concerned about getting lost there.

On the topic of resource acquisition sites, areas frequented for moss collection were mentioned by both Josephine Austin and Rusty Alec, as also having been chosen for cambium collection. Russell Alec states that his mother and aunties used to do two things at once close to the swampy ground:

....They used to do it there, they used to get the moss, and hang it up on a tree to dry and then they would be scraping the cambium from the jack pine. Then at the end of the day they'd go around and pick

up the moss after it was dried, and put it in sacks and store it....[they] would go out to a big swamp there. I think that maybe because there was more water there, too.... when there's a bunch of water the jack pine cambium had a lot of juice that came with it (Marshall 2002:201).

It is speculated here that other plant resources may have simultaneously been collected near areas where cambium was harvested, such as fiddlehead ferns, devil's club, or other traditional plants used in the springtime.

Summary and Conclusion

Various aspects of the Carrier seasonal round can be defined and understood by combining the information presented in the elders' oral accounts and the archaeological data. It seems that cambium was not used solely as an emergency food, and that frequencies of scar dates are explained by how the dates are distributed across the landscape rather than fluctuations in animal and/or plant resources essential to the Carrier seasonal round. Girdled trees are often found near streams or trail routes and are used for firewood when they dry. Scar shape and top shape

Increment Core Dates

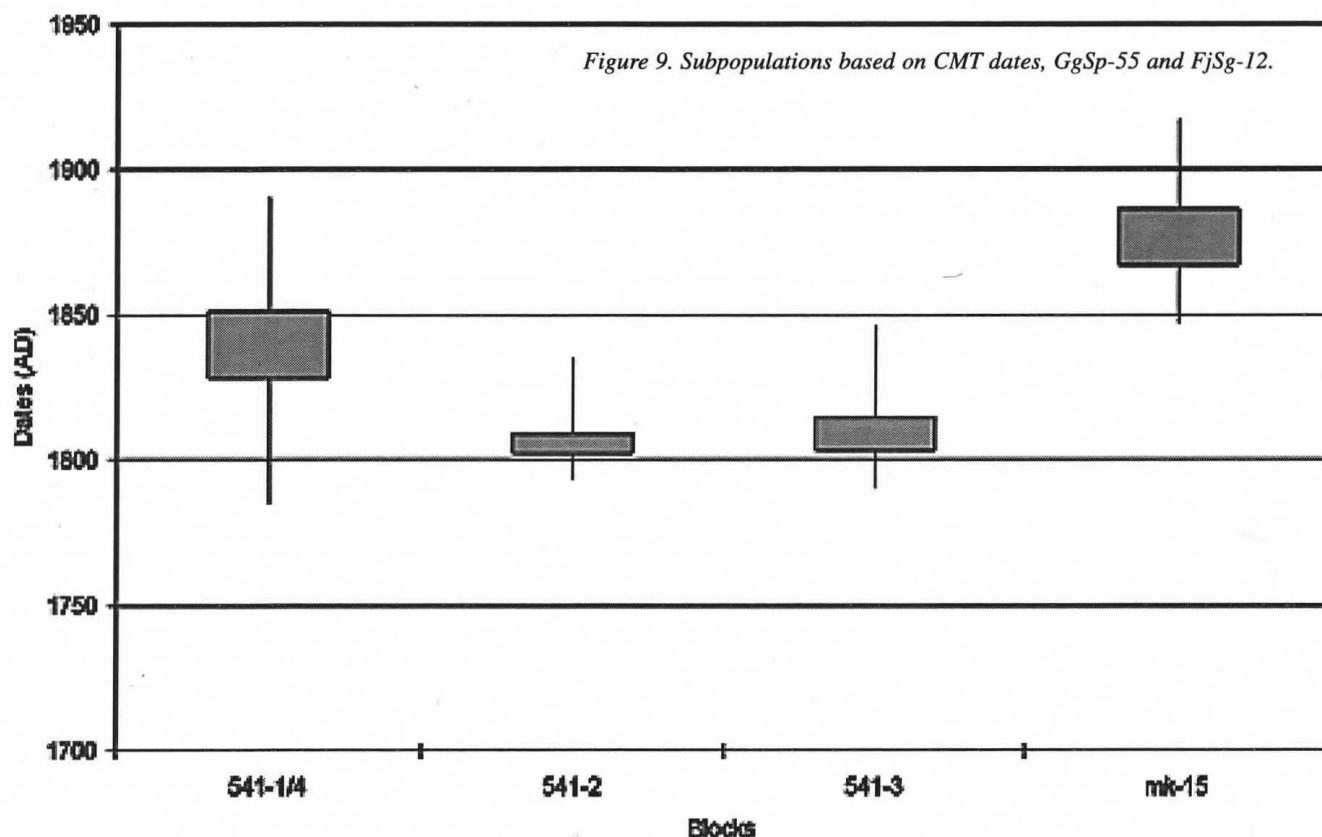


Figure 10. Blazes and choppings indicating approximate trail routes through GgSp-55, Block 1/4.

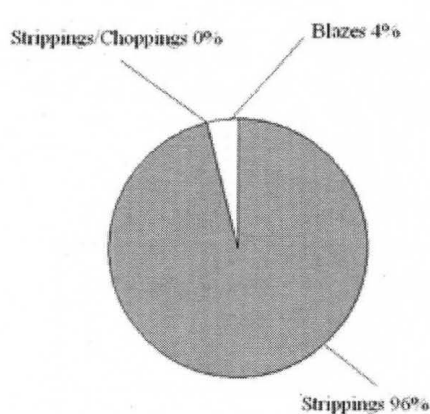
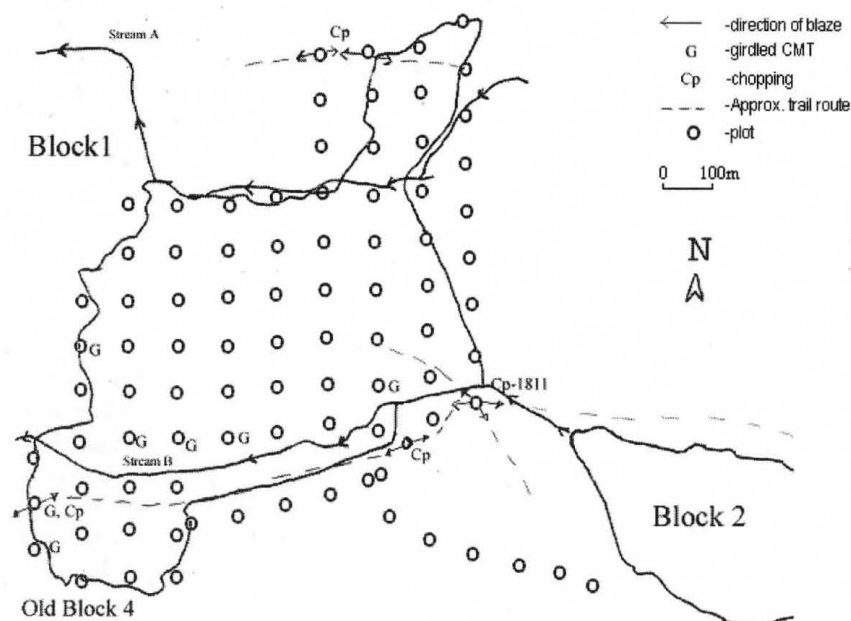


Figure 11. Percentages of CMT types, Site GgSp-55, CP 541.

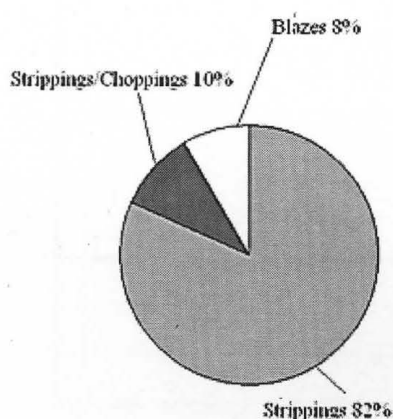


Figure 12. Percentages of CMT types, Site FjSg-12, MK-15.

frequencies appear to be very similar between the two sites, the lenticular shape being the most common; the Harvest Area Type site has a smaller proportion of blazes and strippings with choppings than the Trail Type site. The side of tree selected by a person collecting cambium may depend on the person's preference, and in these two sites appear to be mostly from the shady or north side of the tree. Slope does not seem to have a significant effect on the side of tree selected for stripping. And finally, CMT locations tend to be related to other resource acquisition sites, and along trails and streams.

The archaeological data presented in this article combined with the oral histories told by the elders have helped reveal many aspects of the Carrier practice of cambium collection and the resulting CMTs. Most importantly, it is now clear that cambium collection was only one of many resources collected over the course of the year. Cambium was not solely used as an emergency food; rather it supplemented the Carrier diet by providing carbohydrates, vitamins, and other nutrients necessary for survival.

References Cited

- Albright, S. 1984 *Tahltan Ethnoarchaeology*. Department of Archaeology, Simon Fraser University, Publication No. 15, Burnaby.
- Bergland, E.C. 1995 Historic period plateau culture tree peeling in western Cascades of Oregon. *Northwest Anthropological Research Notes* 25: 31-53.
- Bishop, C. 1983 Limited Access to Limited Goods: The Origins of Stratification in Interior British Columbia. In, *Native North America: 1979, Proceedings of the American Ethnological Society*, edited by E. Tooker, pp 148-161.
- Bond, L., and S. Russell 1992 *The Carrier of Long Ago*. Canadian Cataloguing Publication Data, Prince George.
- Carlson, A.K. 1998a Nechako Plateau Culturally Modified Trees. Paper Presented at the Canadian Archaeological Association's Annual Conference, Victoria.
- 1998b *Interim Report: Systematic Data Collection, CMT Site GgSp-55, In Houston Forest Products CP 541, Babine Lake, BC*. Permit 1998-144. Traces Archaeological Research and Consulting Ltd.
- Carlson, A.K., L. Rankin, and P. Prince 1999 *An Archaeological Inventory and Impact Assessment of Block MK-15 and Mitigation/Management Study of CMTs at Site FjSg-12*. Unpublished Report on File, Archaeology Branch, Government of British Columbia, Victoria.
- Central Carrier Linguistic Committee 1973 *Hanuyeh Ghun 'Utne-i: Plants of Carrier Country*. Central Carrier Linguistic Committee, Fort St. James.
- Glynn-Ward, H. 1932 *The Glamour of British Columbia*. Doubleday, Doran and Gundy, Toronto.
- Gottesfeld, L.M.J. 1992 The Importance of Bark Products in the Aboriginal Economies of Northwestern British Columbia, Canada. *Economic Botany* 46 (2): 148-157.
- Hall, L. 1992 *The Carrier My People*. Friesen Printers, Cloverdale.
- Marshall, A.M. 2002 *Culturally Modified Trees of the Nechako Plateau: Cambium Utilization Amongst Traditional Carrier (Dakelh) Peoples*. Unpublished Master's thesis, Department of Archaeology, Simon Fraser University, Burnaby.
- Morice, A.G. 1895 Notes Archaeological, Industrial, and Sociological on the Western Denes. *Transactions of the Canadian Institute*, 1892-1893, Vol. IV, pp. 1-222.

DEBITAGE

Muir, R.J., and H. Moon 2000 *Sampling Culturally Modified Tree Sites*. Final Report, Prepared for the Ministry of Forests, Aboriginal Affairs Branch, in Consultation with the Ministry of Small Business, Tourism, and Culture, Victoria.

Niklasson, M., O. Zackrisson, and L. Östlund 1994 A Dendroecological Reconstruction of Use By Saami of Scots Pine (*Pinus sylvestris* L.) Inner Bark Over the Last 350 Years at Sädvajaure, N. Sweden. *Vegetation History and Archaeobotany* 3: 183-190.

The People of 'Ksan 1980 *Gathering What the Great Nature Provided: Food Traditions of the Gitksan*. Douglas & McIntyre, Vancouver.

Prince, P. 2001 Dating and Interpreting Pine Cambium Collection Scars from Two Parts of the Nechako River Drainage, British Columbia. *Journal of Archaeological Science*, Vol. 28 (3): 253-263.

Smashnuk (Marshall), A. 1999 *CMT Dates From the Nechako Plateau and Subsistence Practices of the Carrier During the Historic Period*. Paper Presented at the 32nd Annual Canadian Archaeological Association Conference, Whitehorse.

Stryd, A.H. 1997 *Culturally Modified Trees of British Columbia: A Handbook for the Identification and Recording of Culturally Modified Trees*. British Columbia Ministry of Forests, Victoria.

Turner, N.J. 1997 *Royal British Columbia Museum Handbook: Food Plants of Interior First Peoples*. UBC Press, Vancouver.

Turner, N.J., and Kuhnlein, H.V. 1991 *Traditional Plant Foods of Canadian Indigenous Peoples: Nutrition, Botany, and Use*. Gordon and Breach Science Publishers, Philadelphia.

Zackrisson, O., L. Östlund, O. Korhonen, and I. Bergman 2000 The Ancient Use of *Pinus sylvestris* L. (Scots Pine) Inner Bark by Sami People in Northern Sweden, Related to Cultural and Ecological Factors. In, *Vegetation History and Archaeobotany* 9: 99-109.

Amanda Marshall has recently completed her MA at Simon Fraser University on interior culturally modified trees, and has recently joined the BCAPCA as a professional member. She has been working in archaeology in BC since 1994, and is currently employed by Ecofor Consulting Ltd. in Fort St. James, BC.

Earlier this year, the **Canada Foundation for Innovation (CFI)** announced an award of \$17.2 million to the Museum of Anthropology. The funds will be directed toward a re-designed research wing and the creation of a new Reciprocal Research Network. Entitled "A Partnership of Peoples: A New Infrastructure for Collaborative Research," the Museum's project is being developed in partnership with the UBC Laboratory of Archaeology and three First Nations: Musqueam, Stó:lo, and the U'mista Cultural Centre. It will provide UBC with the most advanced and comprehensive ethnological and archaeological facility in Canada.

The infrastructure will forge links between academic scholars, originating communities, and research museums through the creation of two new facilities in real and virtual space. This will involve a renovated physical infrastructure that includes work, laboratory, and storage areas to support interdisciplinary and collaborative research with originating communities in four interrelated areas: (1) material and visual culture, (2) language and oral history, (3) museology and repatriation, and (4) museums, new technology, and intellectual property.

The virtual infrastructure will consist of a Research Network that supports collaborative research over the web. The network will digitally link the collections and expertise in First Nations communities and major Canadian and international museums.

Washington State celebrates its 10th annual Archaeology Month in October 2002. Archaeology Month consists of a series of statewide events held in local communities to create public awareness about the importance of protecting Washington's archaeological heritage. Last year nearly 80 events and exhibits were organized by museums, tribal nations, universities, school districts, and federal, state, and local government agencies. For more information contact the Washington State Office of Archaeology and Historic Preservation at 360.586.3065; Web site: <www.oahp.wa.gov>.

To celebrate Washington State's Archaeology Month, the **Burke Museum of Natural History and Culture** hosts its annual Archaeology Day on 19 October 2002. Visitors to the Museum will have opportunities to handle field equipment and record and interpret artifacts. Staff and students from the Burke's Archaeology Division will display their collections, answer questions, and talk about the projects they're working on. Archaeology Day visitors can also participate in guided field trips to the 4,200-year-old West Point Archaeological Site in Seattle's Discovery Park. For further information on the Burke Museum's Archaeology Day contact the Museum at 206.543.5590 or check out their Web site: <www.washington.edu/burkemuseum.>

At the start of August 2002, the **Heritage Resource Management Branch of Alberta Community Development** began to levy fees for processing archaeological permit applications connected with development activities. Revenue from the fees will be applied to the administration of the permitting program, which for some time has faced administrative challenges.

The fee for a Mitigative Research Permit is \$350 + GST, and the fee for a Mitigative Research Permit Amendment is \$150 + GST. Permits and permit amendments will not be issued until the permit fees are received. When a permit or permit amendment application is rejected, \$100 of the permit fee and \$50 of the amendment fee will be retained as an administrative charge. The balance of the permit or amendment fee will be refunded to the applicant. Fees will not be levied for Archaeological Research Permits or Archaeological Research Permit Amendments to ensure there are no impediments to archaeological research in Alberta.

The winner in the undergraduate category for the **2001-2002 Daniel Weetaluktuk Memorial Scholarship** is Jaime Holthuysen from the University of British Columbia. Her paper is entitled "Clues to the Past: The Manufacturing of Dentalium Shell Beads." Winners receive a \$250 prize and have the opportunity to publish their paper in the *Canadian Journal of Archaeology*.