Algonquian Hunting Territories Before Their "Discovery"?

Studies and Stories of Game Depletions, Forest Fires and Hunting Sociality

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ABSTRACT

This paper synthesizes my long-term interest in the possibility that Algonquian hunting territories could have existed before the arrival of Europeans. In it I also respond to some recently renewed arguments that Algonquian hunting territories are a phenomenon of the period of the European fur trade. I review the ethnographic analyses that favor the possibility that Algonquian hunting territories existed before the earliest European reports of their use, and I update some of these conclusions. I question the recent claims, based on ethnohistories of game depletions, that widespread use of hunting territories could not have predated European tutelage in the practice. I show that these ethnohistorical reports of game depletions contain implicit recognitions of game survival, of game recovery and sometimes of game management. I also show that social and environmental processes created by recurrent large-scale forest fires throughout the period before the arrival of Europeans would have periodically created the conditions which many Algonquianists have thought would be conducive to the development of hunting territoriality. Finally, I try to synthesize some of the insights gained from these ethnographic, ethnohistorical and socio-ecological studies by creating a "story" of how hunting territories could have been created, and re-created over and over again - without ever becoming the sole form of tenure or hunting practice among Northern Algonquians - throughout the long period before Europeans "discovered" there were hunting territories in the 19th century.

RÉSUMÉ

Cet article résume mon intérêt de longue date en ce qui a trait à la possibilité que les territoires de chasse algonquiens aient existé avant l'arrivée des Européens. Il est également une réplique aux arguments récemment repris, évoquant que les territoires de chasses algonquiens sont un phénomène qui a vu le jour suite à la période du commerce des fourrures. Je passe en revue les analyses ethnographiques soutenant l'hypothèse que les territoires de chasse algonquiens existaient bien avant que les Européens ne décrivent cette pratique dans leurs documents. Je mets aussi à jour certaines des conclusions de ces ethnographies. Je remets en question les récentes déclarations, fondées sur l'ethnohistoire de l'épuisement du gibier, qui prétend que la pratique répandue des territoires de chasse chez les peuples algonquiens ne pourrait avoir précédé la tutelle européenne. Je prouve que ces rapports ethnohistoriques de l'épuisement du gibier

contiennent une reconnaissance implicite de la survie du gibier, de son rétablissement et parfois de sa gestion. Je montre aussi que les processus sociaux et environnementaux créés par la répétition de vastes incendies de forêts précédant l'arrivée des Européens auraient périodiquement créé des conditions qui, pour les Algonquianistes, semblent favorables au développement de territoires de chasse. Enfin, je tente de résumer quelques informations que l'on retire de ces études ethnographiques, ethnohistoriques et socioécologiques en racontant une « histoire » qui explique comment les territoires de chasse ont pu être créés, et recréés à maintes reprises — sans jamais devenir l'unique forme de tenure ou de pratique de chasse chez les Algonquiens du Nord – à travers l'histoire, bien avant que les Européens ne « découvrent » qu'il y avait des territoires de chasse au 19e siècle.

BIOGRAPHICAL NOTE

Harvey Feit (PhD McGill, 1979), Professor of Anthropology at McMaster University: I have done research with the James Bay Cree since 1968, and was advisor to the Grand Council of the Crees during the negotiation and implementation of the James Bay and Northern Quebec Agreement. My current research looks at "conservation" as a form of governmentality and a means of control of lands and peoples, as well as a means of generating spaces of autonomy within "post-colonial" societies. This research also examines the roles of environmental epistemologies in James Bay Cree political practices during struggles and negotiations over development and state domination. Recent publications include: *In the Way of Development: Indigenous Peoples, Life Projects and Globalization.* Edited by Mario Blaser, Harvey A. Feit and Glenn McRae. 2004. Zed Books. London; "Hunting, Nature and Metaphor: Political and Discursive Strategies in James Bay Cree Resistance and Autonomy," in *Indigenous Traditions and Ecology.* John A. Grim, ed. Cambridge: Harvard University Press. 2001. Pp. 411-452; and "Contested Identities of 'Indians' and 'Whitemen' at James Bay, or the Power of Reason, Hybridity and Agency." In *Senri Ethnological Studies.* (Osaka) 66: 109-126. 2004. Forthcoming publications include: *Co-Management and Indigenous Communities: Property Rights, Ecology and Politics* Edited with Joseph Spaeder. *Anthropologica,* Special Issue.

A. INTRODUCTION

This paper synthesizes my long-term interest in the possibility that Algonquian hunting territories could have existed before the arrival of Europeans. In it I also respond to some recently renewed arguments that Algonquian hunting territories are a phenomenon of the period of the European fur trade. I review the ethnographic analyses that favor of the possibility that Algonquian hunting territories existed before the earliest European reports of their use, and I update some of these conclusions. I question the recent claims, based on ethnohistories of game depletions, that widespread use of hunting territories could not have predated European tutelage in the practice. I also show that social and environmental processes created by recurrent large-scale forest fires throughout the period before the arrival of Europeans would have periodically created the conditions which many Algonquianists have thought would be conducive to the development of hunting territoriality. Finally, I try to synthesize some of the insights gained from these ethnographic, ethnohistorical and socio-ecological studies by creating a "story" of how hunting territories could have been created, and re-created over and over again - without ever becoming the sole form of tenure or hunting practice among Northern Algonquians - throughout the long period before Europeans "discovered" there were hunting territories.

Debates over the history and character of Algonquian hunting territories were slowly becoming a subject of the past during the last two decades as the move away from grand theory in anthropology undercut the relevance of hunting territoriality to wider debates in the discipline. At the same time, richer ethnologies and ethnohistories revealed that the earlier accounts of Algonquian territoriality that were central to those debates were too simplified. However the embers of the debates have been recently fanned, if not fully rekindled, by Shepard Krech in *The Ecological Indian: Myth and History* (1999). In the final numbered chapter of that book Krech argues that it was largely from the tutelage of European fur traders and missionaries that Northern Algonquians learned about hunting territories and how to conserve wildlife. A central part of his argument that Northern Algonquians were not conservationists before they were exposed to European pedagogy was that they did not have hunting territories, at least in any widespread and well developed form, before Europeans started to actively promote the practice as part of their advice about how to facilitate the recovery of beaver numbers depleted during competitive fur trading (Krech, 1999: 206, 187). Elsewhere I have responded to Krech's arguments, showing that his claims that Europeans taught conservation to Northern Algonquians are deeply flawed; that they are biased, treating Indigenous peoples' knowledge and practices in ways that are systematically different than how he approaches the knowledge and practices of Europeans; and that his account is based on the image of conservation as a uniformly benevolent practice, thereby ignoring the roles it has played in the dispossession and subordination of the Indigenous peoples of North America (Feit, In Press). I argue that Krech ignores the complexity of relations between North Americans and Aboriginal Peoples, sometimes deeply conflictual, sometimes truly reciprocal, often subordinating of Aboriginal peoples. In this paper I take the occasion afforded by Krech's intervention to consider the pre-19th century period and to re-examine whether hunting territories pre-date the period of unequivocal European descriptions of their existence.

Starting in 1983, I gave and circulated several conference papers arguing that it was plausible that family hunting territories existed "before contact" by Europeans, under specific conditions (Feit, 1983; see also 1987), and several years later I published references to the conclusions of these analyses (Feit, 1986, 1988, and 1989).[1] In the last major review by Algonquianists of the state of research on hunting territoriality, a 1986 collection of papers (Bishop and Morantz, 1986), two authors presented arguments for pre-contact hunting territories (Scott, 1986: 170; Bishop, 1986: 55-57), three called for more research on the topic (Preston, 1986: 16; Tanner, 1986: 23; and Morantz 1986: 87), and Ed Rogers in his epilogue noted how his own views had changed and that he was then reconsidering the possibility of pre-contact hunting territories (1986: 211; since 1986 see also Feit, 1991b; and, Bishop, 1998). One of the aims of this paper is to review, synthesize and develop the arguments for the existence of Algonquian hunting territories not only in the "pre-contact" period, but also in the early centuries of the fur trade, prior to the time when clear reports of their existence become available, in the mid-18th or early 19th centuries.[2]

a. The Recent Arguments for a European Origin of Hunting Territories

In response to my views on the possible early existence of hunting territories Krech argues that I am wrong to claim that hunting territories have existed for "several centuries," that is, back to the 1600s, and to claim they may "plausibl[y]" have existed "before contact with Europeans" (Krech, 1999: 200; citing Feit, 1988, 1989). On the question of the history of hunting territories and game conservation Krech argues that anthropologists such as myself have been wrong to say that hunting territories, game management, and conservation extend back before the 18th or 19th centuries (Krech, 1999: 200, 204). He claims that "the historical evidence is lacking for conservation until long after the arrival of Europeans, and it is quite equivocal and mixed for a family territorial system" (1999: 200; for a discussion of his main evidence for these claims see below).

One of the puzzling features of Krech's argument against the existence of hunting territories and conservation in the 17th century, and their equivocal presence in the 18th century, is that Krech himself suggests that Europeans may have taught hunting territories to Northern Algonquian hunters in the 17th century, and influenced Algonquian practices by the 18th century. Based on the research of Toby Morantz of fur trade records from the east coast of James Bay from the late 17th through the 19th centuries, Krech acknowledges that there are contemporaneous ethnohistorical records of some kind of Northern Algonquian hunting territory practices starting in the middle of the 18th century in this region, that the reports become recurrent during the latter half of that century, and that there are unequivocal reports of hunting territories in the first second and/or third decades of the 19th century (Krech, 1999: 183, 190-91; Morantz , 1978, 1983, 1986).

To demonstrate the possibility that both hunting territories and conservation practices of the Northern Algonquian only began, or became common and widespread, after Europeans promoted them among the Northern Algonquian hunters, Krech cites an early 1600s record that he treats as a key example of European pedagogy about hunting tenure and game management. Krech's thesis is that Jesuit Paul Le Jeune in the 1630s "proposed 'locating' specific families so that each would take 'its own territory for hunting without following in the tracks of its neighbors'" (Krech, 1999: 182). Le Jeune also "thought of 'counseling' them 'not to kill any but the males and of those only such as are large'" (1999: 182). Krech says of this advice that "[t]his not only represents one of the earliest recorded European designs to promote conservation and family-manages hunting territories in North America but implies that both were novel ideas" (1999: 182).

I think that Krech fails to adequately distinguish Le Jeune's concept of hunting territories from that of the Algonquians. Krech extracts his quotes from a longer statement by Le Jeune:

> "It would be a great blessing for their bodies, for their souls, and for the traffic of these Gentlemen, if those Tribes were stationary, and if they became docile to our direction, which they will do, I hope, in the course of time. If they are sedentary, and if they cultivate the land, they will not die of hunger, as often happens to them in their wanderings; we shall be able to instruct them easily, and Beavers will greatly multiply. . . . when the Savages find a lodge of them, they kill all, great and small, male and female. There is a danger that they will finally exterminate the species in this Region, as has happened among the Hurons, who have not a single Beaver, going elsewhere to buy the skins they bring to the storehouse of these Gentlemen. Now it will be so arranged that, in the course of time, each family of our Montagnais, if they become located, will take its own territory for hunting, without following in the tracks of its neighbors; besides, we will counsel them not to kill any but the males, and of those only such as are large. If they act upon this advice, they will have Beaver meat and skins in the greatest abundance" (Thwaites, 1896-1901, Vol. 8: 57, 59).

With the full context of the quotes we see that Le Jeune was not trying to promote a form of Algonquian hunting territories as they have been described by HBC traders from the mid-18th century or as they have been described by anthropologists in the 20th century. Le Jeune was trying to get Montagnais to "locate" not on family hunting territories but alongside European settlements. Le Jeune was talking mainly about the virtues of permanent settlement, because taking up agriculture was a more reliable basis for subsistence than hunting and trapping. In addition, conversion to Catholicism would be aided by settlement which would facilitate extended tutelage. Having their own territories for hunting and the fur trade was to supplement their agricultural subsistence, not to be their homes or the base of their primary subsistence

activities. Having territories would also, in Le Jeune's view, assuage the powerful "Gentlemen" in the European colony whom he knew were opposed to settling the Montagnais, for fear that settling them would reduce their fur pelt harvests. We must presume that when Le Jeune spoke to Montagnais about his hopes for their future, any discussion of taking up family territories would have been linked to taking up a European life style, with residence at European settlements, agricultural plots of land, and religious conversion.

Both ethnographers and ethohistorians of Algonquian hunting territoriality have shown repeatedly that Algonquian ideas and practices of tenure and hunting groups are not rooted in a nexus of European land tenure or settlement ideas, or in abandonment of Algonquian religious practices (see discussions of Tanner and Scott below). Krech fails to distinguish between Le Jeune's plan and Algonquian hunting territory ideas and practices. This failure allows him to erroneously suggest that Le Jeune's advice may have had widespread and lasting influence on Algonquian hunting territories over the next centuries.

Krech cites no other records of possible European tutelage about hunting territoriality until the HBC policies of 1821, nearly two centuries after Le Jeune. Therefore the 18th century territorial and conservation practices of the Algonquians, or Cree, living east of James Bay that Morantz found in the HBC records are an anomaly for his argument that European tutelage was vital to their development. Krech says in response to these records that, "[p]erhaps family hunting territories emerged where people wished to repel trespassers and manage their own beaver lodges to produce renewable commodities, perhaps outsiders like Le Jeune had some sway over conservation attitudes . . . " (Krech, 1999: 194). Thus, suggests that the 18th century traders' reports either indicate an Algonquian invention of hunting territories, or that they followed Le Jeune's advice of a century before in another region.

It is difficult to understand why Krech finds the historical evidence is "quite equivocal and mixed" for the possibility of hunting territories and "lacking" for conservation in the 1600s, as I had claimed, given his own assertions that Le Jeune was encouraging Montagnais to adopt hunting territories and conservation in the 1630s. Nor is it clear why Krech can say that Algonquian invention of hunting territories may have occurred in the 17th century, but he denies that possibility could have occurred a century earlier. These appear to be inconsistent and contradictory versions of the same events, aimed at making European influence important while reducing Algonquian influence.

These are not convincing arguments that hunting territories and conservation did not predate European tutelage or mid-18th and early 19th century reports of their existence by fur traders. However, Krech does offer other evidence against the early existence of hunting territories and conservation, the ethnohistorical reports of recurrent and widespread game depletions throughout the fur trade period, and these will be addressed below.

b. Ethnographic Evidence against Hunting Territories as Private Property – Reconciling Ethnography and History

The possibility of rethinking Algonquian hunting territoriality developed in the 1970s and 1980s from more detailed ethnographic studies which made it clear that hunting territories were not forms of private property, commodification, or assimilation, but that they were both expressions and means of reproduction of Algonquian social relations, symbolic meanings, and environmental linkages, ie. they are integral to social reproduction broadly construed (see Tanner, 1973, 1979, 1986; Scott, 1979, 1983, 1986, 1988; Feit, 1971, 1973, 1978, 1982, 1991b, 1994; Craik, 1986; and, Preston, 1986 for ethnographies; and, Francis and Morantz, 1983; Morantz, 1978, 1983, 1986; and, Bishop, 1970, 1974, 1986, 1998 for ethnohistories. I do not discuss the arguments presented by Bishop (1986, 1998) in this paper in detail because it seems to me that they more clearly apply to the region south of the James Bay area).

Hunting territories were also both shaped by the history of the fur trade and by being means of resistance to competing claims to land and resources, as well as resistance to pressures for unwelcomed social changes (see Feit, 1991b for a brief review). These ethnographic analyses opened new ways of re-examining both the diversity of Algonquian territoriality, and its reproduction and transformation, because they broke with the earlier histories of hunting territories derived from both Frank G. Speck (1915a, b, c; on Speck see Deschenes, 1979, 1981; and Feit, 1991a) and Eleanor Leacock (1954, 1969, 1971, 1982; and, Murphy and Stewart, 1956).

Adrian Tanner's study of the Mistissini Cree is probably the most widely read of these ethnographic studies of the eastern sub-arctic (Tanner, 1979, 1973). In this paper I highlight those aspects of his work that are relevant to the re-conceptualization of territoriality, and I summarize them in a form that responds to the then prevailing analysis of Leacock and of Murphy and Stewart that respectively saw Algonquians as becoming producers in a market-dominated fur trade and being assimilated into a class position within the wider capitalist mode of production.

Tanner starts by observing that some accommodations had occurred during the fur trade between Indians and fur trade merchants, but that there was not a simple assimilation by Cree to market conditions. He shows the continued existence of a complex religious system, "with a systematic ideology, which is not part of the non-Indian pattern," and this suggests considerable cultural autonomy and continuity existed among the Mistissini (1979: 10). In economic relations he shows that the economy does not exhibit a tendency to individualization, and he argues that present conditions must be understood "as a social form in its own right, not as a group in conflict between traditional and modern elements" (1979: 10). Relationships among hunting group members are not competitive, even with respect to fur and fur production (1979: 67). Thus even though the Cree hunter has a subordinate position vis a vis the capitalist mode of production in external exchange, there is still a relative autonomy, and market production is kept subordinate to subsistence production.

This is explained in part by the social and economic formation of fur trading which, Tanner argues, is not a full capitalist system of production where an enterprise controls production, but a mercantile "putting out" system of production, in which the merchant advanced supplies required by producers, who work in groups of families, and Cree turned back products to merchants (1979: 63-65). Furthermore, the debt system of "putting out" results in production to fulfill specific needs in order to repay a debt known in advance, rather than for theoretically limitless exchange. Tanner argues there is therefore no sharp separation between trapping and hunting, or between production for use and production for exchange, among Mistissini Cree, contrary to what Leacock and Murphy and Stewart had argued. The multi-family hunting group remains the critical productive unit, not the nuclear family.

With respect to land tenure, Tanner argues that ownership of land is not based on attachment to land as such. Rather, a contradiction exists, in statements and actions, between the practical necessity of hunting groups having virtually exclusive access to an area relative to neighbors, and an ideology of hospitality that complements the necessity of all hunters to have access to resources sufficient to their support. The hunting territory system is based on a right to enjoy access to adequate resources in areas around camp sites, free from competition; and on the on-going relationship of old men, who are potential hunting group leaders, to the animals of territories they repeatedly use. Hunters discuss plans so as not to overlap, and hunting group formation and coordination is the critical task of leaders (1979).

This occurs even in Nichicun, an area that Tanner describes as “a frontier zone” by comparison to the Mistissini band as a whole because there are relatively few hunters relative to the number and size of territories, a consequence of the distance from the trading post and settlement and the costs of trasport. The annual patterns of formation of hunting groups assure the co-residence of at least two hunters, to enhance security. But changes in hunting groups and locations over the years enable owners to use territories regularly enough to retain control of them (1973: 105). Their leadership roles in group formation are represented in religious and jural terms as a power over land and animals. The bounded territory is an epiphenomenon, relationships to animals and people are the key. Yet a concept of inherited 'title' exists (1979).

In another article, Tanner analyses historically what happened during a period of multiple game declines in the first half of the 20th century, in response to which some groups of Algonquian hunters essentially abandoned the hunting territory system, temporarily (1978). Groups broke up so individuals could search more widely for resources, but the hunting territory system was re-established as game returned.

The territorial system is thus not based on European notions of fixed tracts of land, but it has elements of the hunting territory systems described in the earlier anthropological literature. The producers have significant control of means of production, including land (1979: 3-4); their own ideology and religious ideas, although most are Christians; and a specific social structure, the hunting groups (1979: 65). Tanner argues that this social and ideological structure is distinct from pre-contact Agonquian society, but also from

the society of Quebec and Canada. The system Tanner thus presents cannot be accounted for as either purely Cree, nor solely as the adoption of practices or ideologies drawn from capitalist economy, fur traders, or the conditions of trade (also see Tanner, 1986).

Once it was clear that Cree hunting territories are not forms of private property the implications of these analyses were to fully reopen the question of whether hunting territories may have existed, albeit in variant forms, before the fur trade, or in diverse forms during different periods of the fur trade.

B. ARGUMENTS FOR THE POSSIBILITY OF HUNTING TERRITORIES BEFORE 1750

a. Analyses of Hunting, Conservation and Ethnoecology

More or less parallel with Tanner's Mistissini research, I showed that hunting territories among the neighboring Waswanipi Cree were used to hunt game resources in ways that could limit the impacts of the hunters on game populations, and in some cases conserve the game populations (Feit, 1971, 1973, 1978). I showed the ways that distinctive Waswanipi hunting rituals, cosmologies, and "ethnoecologies" were in some instances not only central to the processes of hunting but also of game management. The Waswanipi case was, in contrast to that at Nichicun, one where there was a more intensively used set of hunting territories, and therefore one that was somewhat more formalized. But while the description of the system was thus closer to the "classical" formal descriptions of the earlier debates, I emphasized that making an intensive use of hunting territories work in practice required diverse ways of putting ideas and "recipes for action" into practice (1978).

The argument was initially focused on recent work by Rolf Knight because he both argued for the formal rigidity of hunting territories and offered ecological arguments against the historical possibility of hunting territories before the middle of the 20th century. Knight argued that hunting territories were areas to which specific and well-defined groups had exclusive and sole access. Therefore, hunters were unable to respond to the ecological variability of the game populations while adhering to hunting territories. People regularly had to leave their hunting territories to have secure hunts. Hunting territories were therefore unworkable until alternative sources of subsistence were provided by the developing welfare state in the mid-20th century (Knight, 1965, 1968). Thus hunting territories demonstrated the impossibility of game conservation (Knight, 1968: 11; 1965). Without explanation Knight ignored evidence of the existence of hunting territories in the first half of the 20th century and at the end of the 19th century (see Feit, 1978).

I argued that it was precisely the ability of hunters to see signs of game declines that led them to seek exchanges of access to hunting territories. Rather than being failures, these movements were one of the key means of actively using hunting territories to organize hunting in response to the conditions of game (Feit, 1978: 1146-1149). Hunters continually offered invitations to other hunters to join them on their lands when game was abundant. While there were many reasons for invitations, and the social reciprocity was valued in and for itself, the processes of responding to invitations to join others redistributed people regularly on the land, partly in relation to the abundance of game (1978: 1147). I also showed that Knight's explanation could not distinguish between cases where trapping out occurred unintentionally, and those where hunters consciously planned a rotational use of their hunting territories, and therefore intentionally hunted out an area knowing they would not use it for several years and that game numbers would have time to recover (1978: 1147). I argued, in the idioms of the time, that ignoring culture and beliefs made the analysis of action impossible. I insisted that ecological research needed to include symbolic meanings and knowledge and we needed a full ethnoecology not a solely materialist ecology.

In the 1980s I carried the analysis into a specific argument in favour of pre-contact hunting territories.[3] After completing my doctoral dissertation on contemporary Waswanipi hunting I developed analyses in favor of pre-contact hunting territories which I presented and circulated in conference papers and manuscript drafts (1983, 1987). The present paper seeks to both synthesize and move beyond those formulations. As these ideas are part of the histories of the debates, in this section of this paper I present a summary of the case I made some twenty years ago. I retain some, but not all, of the idioms of the period, and update them where necessary.

Based on the Waswanipi research I said that contemporary hunting territory practices were related to an environment, and to ways of hunting, decision-making, and cosmologies that could plausibly have existed in similar forms before the fur trade. Hunting and hunting territory practices were informed by an ontology and epistemology that, following Hallowell (1955), extended social relations throughout the cosmos and in which both humans and animals are like persons with wills and knowledge (Feit, 1971, 1973: 116; 1978). For Waswanipi hunters human-animal relationships were organized around a general reciprocity in which animals give themselves to hunters and allow themselves to be caught when they are respected and hunted properly (Feit, 1973: 116-18). The decisions of hunting territory "bosses" or leaders included whether a hunting territory should be hunted in a given year or season, some aspects of who should use it, and where they should hunt and what animals and how much game they should seek to harvest (Feit, 1978: 1139; 1983: 49-50). The leaders made, explained and legitimated decisions in relation to the signs animals have given of their willingness to be hunted, and their anticipations of whether harvests of key species could be increased or should be decreased.

The hunters often did adjust their hunting to the effects their previous hunts had on the game. This was expressed through the signs they saw of changes in animal abundance or ease of encounters, which indicate the willingness of animals to be captured (1973: 115-18; 1983: 40, 44). There was a coincidence between some of the signs the Cree hunters described as indicators of animal conditions and those indicators identified by biologists (1973: 117-18; 1978; 1987: 20). Hunting territory leaders' strategies were often effective in limiting harvests of intensively used game, especially beaver and moose (1973; 1978; 1983: 40). This was not surprising because if and when they did over hunt these species they would see the effects in their future hunts. But not everyone reported knowing how to do this, and some reported that circumstances prevented them from hunting the way they thought would have been best. Furthermore, this management was not possible for all species. But the knowledge required was available to any hunter who was carefully observant while hunting species such as moose and beaver intensively for long periods in the same region (1983: 45, 47). Thus diverse forms of socially structured knowledge, cosmologies, hunting techniques, patterns of leadership, and social reciprocity were all linked to everyday practices of subsistence hunting and of hunting territories.

I argued that it was reasonable to generalize that most hunters in the past could have recognized the effects of their hunting on animals. Having identified changes in the conditions of game they would have been able to seek means of adjusting their harvests to those conditions, just as most were doing at Waswanipi in the present. I concluded that it was therefore plausible and likely that systems like Algonquian hunting territories would be adopted, whether in pre- or post-contact times. Hunting territories facilitated hunters staying on or returning to the same lands. Territories also facilitated building up long-term socially-distributed knowledge of changes in game conditions, which resulted in part from previous hunts. Hunting territories provided means of putting that knowledge to use through the acknowledged role of a leader to socially coordinate the hunting efforts of a group of hunters in ways that could lead to better hunts for all in the group. Leadership was legitimated through the leader's personal ties to animals that used a given tract of land, and the spiritual power he could receive through those relationships. This encouraged others to respect his decisions about the use of the territory and to reduce trespass and conflict (1983: 47).

The actual motivations for adopting the use of hunting territories might therefore be quite diverse. They could be adopted in order to make hunting more efficient, or in order to increase the reliability of subsistence, they might be used to increase subsistence harvests in a time of scarcity, they might be the way to maintain reciprocity and relationships with particular people or with animals (1983: 36, 58; 1978). They could also be adopted to conserve the wildlife, or they might be a way to make leadership claims. Hunters mentioned all of these (1973: 120-24; 1983: 36, 37-43). I thought that hunting territories were a plausible development in pre-contact times because of the various ways they "fit" the logics of hunting, human-animal reciprocity, and social leadership.

But I also recognized that each of these motivations were themselves probably influenced by the fur trade, albeit in ways that it was rarely possible to adequately document or sometimes even clearly identify. Indeed, the debates over the histories of hunting territories were precisely over what the effects of the fur trade were on hunting, human-animal relationships, and leadership. Therefore, to argue that this plurality of

factors made the adoption of hunting territories under pre-contact conditions plausible was, to some degree, to pre-empt the unanswered issues in debate.

In order to move partly beyond, or around, these contested histories, I developed a second argument that focused on the issue of subsistence as the possible area of broadest agreement. That subsistence was not outside of culture or meaning or history encouraged me to think subsistence was a focus on which a broad consensus could emerge. I therefore stressed that hunting territories could be a means that would facilitate subsistence harvests in times of relative "shortages," or what might today better be called risks, and I asked whether conditions of relatively heightened subsistence risk would have occurred in pre-contact times. I argued that if they did then these were plausible conditions to think that hunting territories could have existed then too. I went on to show that such conditions would have been expected in pre-contact times as a result of forest fires (I outline this material below). In addition to the more general arguments that I set out above, I therefore argued that there was also a very specific and narrowly focused, but potentially broadly acceptable, basis for thinking it plausible that hunting territory practices could have been developed and adopted in pre-contact times. Hunting territories made intensified subsistence hunting possible during recurrent periods of increased risks to subsistence (1983.: 58-59). This conclusion was compatible with the European fur trade having changed hunting territory practices and ideas in various ways as it proceeded.

b. Analyses of Modes of Production and the Semiotics of Property

Colin Scott developed another set of arguments for pre-contact hunting territories. He showed that diverse relations of tenure and leadership characterize hunting practices at the James Bay Cree community of Wemindji. Summer fishing is organized by households. Winter hunting and trapping involves three to four households living together on a hunting territory, with individuals or groups of two hunters working at hunting, but all under the leadership of a "hunting boss" (Scott, 1986: 165). The boss has a responsibility to promote the productive success of others using the territory. If he fails that responsibility his decisions will be ignored and his control of the territory will decline. Yet another system of territoriality and leadership applies at spring goose hunting territories along the coast during the goose migration seasons. Here "shooting bosses" more actively lead and coordinate the six or seven hunters who utilize a series of bays and adjacent lands (there may be several such areas along the coast of a hunting territory).

Scott's ethnography of goose hunting areas and bosses shows how and why hunter coordination by shooting bosses and goose territories is widely accepted, and the general characteristics of contemporary Cree social organization that express and sustain this relationship (Scott, 1986: 169; see also 1983). The goose hunting effort at Wemindji is organized by a hunting boss in ways intended to enhance the hunt by avoiding or limiting practices that lead to fewer geese staying in the area, or geese staying for shorter periods than would otherwise be the case. The benefits of leadership are widely agreed upon, as are the responsibilities of the "shooting boss" to help other hunters.

Scott says that explaining these different territorial arrangements at different seasons depends on several elements characteristic of a domestic mode of production: respect for knowledgeable leadership, cooperative groupings based on kinship and friendship, and the value of a relative autonomy of households (1986: 166). He elaborates these as legitimating principles in the Cree system of property (1988). A social tension exists between the interests of the household and those of the larger society (Scott, 1988: 37). A household has initial rights in relation to products of its own labour, linked to the value of a relative autonomy of households in a society which practices generalized reciprocity. The balancing principle is the rights of the collectivity to not have the interests of others prejudiced by the use, restriction or accumulation of resources or products by specific households. A corollary is that households cooperate in productive contexts where collective benefits are possible (1988: 38). A third principle is that rights in the land and other ungarnered resources cannot be permanently alienated for private benefit (1988: 38). As a result of these ideas and practices, rights apply to technical and political relations of managing and sharing resources, but there is no basis in Cree property ideas for anyone to maintain exclusive or absolute rights (1988: 40), and Cree repeatedly affirm that "no one" can own the land.

Scott argues that: "There is nothing in the nature of the fur trade or the wage and welfare economy to have produced this specific configuration of relations" (Scott, 1979: 26). Since most of the features described are commonly recognized elsewhere as having characterized societies of hunters, he hypothesizes

a considerable degree “of autonomy and continuity of production in a distinctly Cree mode" (Scott 1979:26). Thus the cultural system of property and the several hunting territory practices that articulate it in practice form a Cree mode that would in the absence of contrary evidence have continuity with the pre-contact period, and hunting territories should be expected in pre- and post-contact times.

C. ETHNOHISTORIES OF GAME DEPLETION AND HUNTING TERRITORIALITY

These arguments put forward in favor of the likelihood of the existence of hunting territories among the Algonquian in pre-contact times are and continue to be persuasive arguments in my view. The enduring benefits of organizing hunting, conserving game, and meeting urgent subsistence needs by using hunting territories over a course of years to reduce risks, the broad social benefits of organizing hunting in inter-linked territorial and leadership arrangements, and the coherence and continuing distinctiveness of Cree culture-practices today are all still compelling reasons to consider that hunting territories could have existed throughout the fur trade and in pre-fur trade times. The question however remains whether the ethnohistorical evidence from the fur trade period is consistent with such conclusions from the contemporary ethnographies.

The ethnohistorical records show considerable continuities in Northern Algonquian cosmologies, religious practices, social organization and hunting practices (See Krech [1999: 204] on cosmologies and religious practices; Morantz [1983, and below] on social organization; Feit [In Press] on hunting practices).

However, the frequency of reports of game depletions throughout the fur trade has been taken as evidence against early hunting territories (Krech, 1999: 175-78). Krech thus argues that hunting territories and conservation were not widely practiced until Europeans promoted them, most clearly in the 19th Century. He is not alone in this conclusion (see, Ray, 1975). However, I think the ethnohistorical records of game depletions tell a richer and more complex story than these authors reconstruct from them.

Krech gives a brief but useful summary of recurrent reasons why game depletions are reported to have occurred at various times and places during the fur trade.[4] In the course of his review he cites six documented cases of game depletions and quotes seven statements that explain these depletions (Krech, 1999: 183, 184-85, 186-87, 189-90, 190-91). Two explanations of the declines in game are repeated frequently. The presence of “intrusions” or “trespass” by trappers are given as reasons in six instances (86 percent of the cases), and “competition” is given in five cases. One or the other of these two explanations is mentioned in every report citing reasons for depletions. This is significant because competition was often a factor in organizing or inviting outside trappers to enter an area, and therefore a cause of intrusions or trespass. The terms “intrusions” and “trespass” are probably used so loosely as to be synonymous. We cannot therefore clearly distinguish between trespass by a neighbor and that by non-local itinerant trappers. The actual over-trapping may have been mainly the result of the intruders or trespassers, who were sometimes non-Natives and other times Aboriginal people, or the result of the local hunters trapping intensively to pre-emptively over-hunt before the furs were taken by trespassers and intruders.[5] Thus despite the diversity of detailed histories of game depletion listed above, there is a very common cause of depletion of beaver populations, trespass, or intrusion by trappers not previously using the area in question, although this may sometimes work in combination with other factors and in complex ways.

When a trader or observer notes that depletion has been caused by these events, there is an implication that before the trespass or intrusion game was not depleted. That is, we can infer that most of these reports are also implicit statements by the observer that there was a previous period when observers thought that there were “normal” game numbers. Krech recognizes the pervasiveness of intrusions (1999: 187), but not their significance. We may not presume from these reports of game depletions why or how trapping was not negatively affecting game in the period before the depletions. But the unspoken, implicit counterpart of the frequent reports of depletions is that game was also being hunted but surviving in reasonable numbers in many periods throughout the fur trade.

Because depletions usually occurred as a result of trespass and intrusions one cannot conclude that trappers did not know how to trap without depleting game. This is so even though it may well be that in many of these cases the over-trapping was done by local hunters in response to the presence of the trespassers, as well as by the intruders themselves. Thus the main inference which Krech draws from these records, that Northern Algonquian did not know how to conserve game, is not supported by these statements.

It is possible to draw other implications from the specific cases discussed by Krech. The ethnohistorical records show that game depletions were reported to have occurred several times in the same areas, sometimes only a few decades apart, as was the case to the east and south of James Bay in the 18th and 19th centuries (Krech, 1999: 183; on another recurrent but different case at Osnaburgh House in the 19th century see 1999: 190-94). Krech indicates that there was hunting out to the southeast of James Bay in the 1730s and again in the 1760s (see Francis and Morantz, 1983: 55, Figure 2). Furthermore, Rogers indicates that the "foreign trappers" were back in the area in the early 1800s (1963: 18), and Krech reports intruders were there again in the 1840s (1999: 191).

This not only confirms that reported periods of depletions alternated with periods in which trapping was pursued without game depletions, it tells us more about the trappers' skills. If game recovered such that they were sufficiently numerous to later be attractive to a new wave of trespassers and intruders, then there is an implication that the trappers who stayed in the area were trapping in such a way that game recovered after trespass ceased. That is, that the hunters knew how to avoid game depletion when conditions permitted.

An even more detailed picture of one of these processes is documented in the 18th century beaver returns from Eastmain House from 1730 to 1780. These cover a wide area of trade on the east coast of James Bay, but they show that beaver pelt purchases dropped sharply in a matter of three or five years in the 1730s, and then rose almost to their former level in approximately eight years in the 1740s. While we do not have enough information to reconstruct precisely how game populations declined and recovered, the increase in beaver pelt purchases were re-established to former levels suggests that the beaver populations recovered. To put this event into perspective, it took eight years for 20th century beaver reserves to recover from depletions under a co-management regime involving Cree hunters, the HBC and the Quebec and federal governments in part of the Rupert's House region east of James Bay, adjacent to the region where the 1740s recovery occurred (see Feit, In Press). This involved efforts at keeping beaver trapping much reduced through the use of social assistance and the availability of imported food supplies, neither available in the 18th century, although it must be noted that hunter densities were likely higher in the early 20th century. The 1740s recovery is therefore likely to have been the result of trappers' efforts, not just of the capacity of beaver to recover. This is confirmed in 1745, in the middle of the recovery period, when the first of a series of reports of some form of Cree hunting territoriality by HBC traders in the region occurs. In the following decades there are repeated reports of territorial practices among Cree (see Morantz: 1978, 1983, 1986; Krech, 1999: 183). The coincidence of beaver recoveries with reports of a form of hunting territoriality suggests the possible mechanisms by which the rapid recovery was aided or accomplished by the hunters.

Can these findings be reasonably extended back into the 17th century and earlier? We know beaver depletions occurred during the 17th century, and that like those of later centuries, they occurred on a "background" of relative game abundance, and were eventually followed by game recoveries. The fact that the 1740s recovery was so accomplished suggests that conservation skills predated the mid-18th century, and all this makes it plausible to think that tenure practices linked to conservation may have existed for some time. However, it is important to take into account that the 18th and 17th century reports are very limited in number, they come from but few areas. These reports are relatively inconsistent about what Northern Algonquian hunters' territorial and conservation practices may have existed, if any, at the earlier periods and in other regions outside the eastern coasts of James Bay. The generality of these inferences for earlier periods and for areas beyond the lands east of James Bay therefore remain unclear from the ethnohistorical record.

D. THE LIKELIHOOD OF HUNTING TERRITORIES BEFORE 1750 - ENVIRONMENTAL AND SOCIAL MODELS

The challenge that remains is therefore to consider what we can know about the conditions that would have prevailed more generally in pre-contact times in the sub-arctic region. One way to address the question of the pre-contact period is to return to the idea that serious game depletions, or increased risks, are a condition in which territoriality and conservation would be likely to be developed or adopted. Krech, for example, argues that the widespread depletion of game by fur trade competition was a key factor in the widespread adoption of hunting territories in the 19th century (1999: 186-87, 194). Did conditions of significant depletions occur in earlier times? In answering this question I review what is known of boreal

forest ecology to show that these types of conditions would have occurred repeatedly, although not continually, under pre-contact conditions.[6]

a. Sub-Arctic Ecosystem Dynamics - Forests, Fires and Animals

I have previously used elements of what we know about the dynamics of the boreal forest ecosystem to provide useful inferences about some of the socio-economic conditions under which it is likely that pre-contact Algonquians lived in the sub-arctic boreal forest area east of James Bay (1969). Here I will suggest that environmental conditions joined to a set of explicit assumptions about social institutions can clarify some of the subsistence and social conditions that Algonquians faced in pre-contact times. I develop a set of models for the Waswanipi region of Quebec (Feit 1969, 1979, 1983, 1987).

It has been found that most contemporary black spruce forests of northern Quebec, which dominate the sub-arctic Waswanipi region, originated following fire (Gagnon and Morin, 2001: 27). This finding is consistent with the findings of foresters and ecologists that forest fires play an indispensable role in the continuing existence of boreal coniferous forests, and that fire must be incorporated as a key component in the histories and ecosystem models of the dynamics of boreal forests (for reviews see Rowe and Scotter, 1973; H.E. Wright Jr., 1974; Heinselman, 1981; Pothier, 2001; Gauthier, *et al*., 2001). The fires can vary considerably in intensity, extent and frequency, and my interest here will be in the patterns of occurrence of intense and large forest fires and their consequences.[7] Intense fires kill more of the trees, burn deeply through the organic layer on the soil, and leave fewer islands of stands of trees unburned within the perimeter of the burned area. For example, in a study of fires in two successive years in the boreal forests of western Quebec fires burned between one- and two-thirds of the area within the fire perimeter in one of the years studied, but in the other year, which had particularly severe seasonal fire conditions, the fires burned between two-thirds and 94 percent of the area within the fire perimeter (Gauthier *et al.*, 2001: 15).

As there are relatively few barriers to the spread of fires in these regions, intensive fires can sometimes burn very large areas. Ten percent of recent fires burn more than 200 sq. km. (Gauthier *et al.*, 2001: 14; Sirois, 1996: 63-64). But logging, fire protection and other management practices are thought to have reduced the sizes of the areas that burn during the most intensive fires in recent decades, and research suggests that climatic changes in the north-western Quebec region since the 1850s have also been less propitious for large fires (Gauthier, *et al.*, 2001: 12). Thus in the past considerably larger fires have been reported. Few reports by observers exist of the extent of very large and infrequent forest fires, especially for earlier periods. In northern Quebec and adjacent areas of Ontario the best records from pre-fire control and pre-logging or early logging times come from explorers and geologists. J.M. Bell of the Geological Survey of Canada reported a series of fires in the dry summer of 1901 in north-eastern Ontario that destroyed extensive tracts of forest. One fire burned at least 7,700 sq. km., and he reported traversing part of the burn in 1904 while travelling 48 km. "through a wilderness of blackened trees" (quoted by MacMillan and Gutches, 1910: 8-9). He reported that any Indian in the region had to "leave his hunting grounds and go elsewhere, far to the eastward or westward, to seek new spots where the game yet lives. I was in the country during that terrible fire of 1901 and I shall always remember the days we passed in semi-darkness, hourly expecting to have to take to the water to save our lives" (J.M. Bell quoted by MacMillan and Gutches, 1910: 9).

A.P. Low, also from the Survey, reported travelling through second growth vegetation in a burned area for five days while travelling west from Lake Mistissini down the Rupert River, just north of the Waswanipi hunting territories, in 1885. His reports indicated that he traversed 257 km. during those days, but the width of the burn is not known (see Feit, 1969: 82). Jacques Rousseau, a biogeographer who was in that area in the mid-20th century, confirmed the existence of this burn in a discussion with the author in 1968. If this burn area was 25 km. wide on average (ie. about 10 percent as wide as it was long), the perimeter of the burned area would encompass 6,425 sq. km. Low notes that forest fires "often burn throughout the entire summer, destroying thousands of square miles of valuable timber, to the south of the central watershed" of the Quebec-Labrador peninsula (1895: 361). Thus, burns of up to 8,000 square kilometers were reported in the last decades of the 19th century and the first decades of the 20th century, before extensive lumbering and forest fire protection services were introduced.[8]

A report that fires were observed frequently in earlier centuries is indicated for Necouba, to the immediate east of Waswanipi, in 1661 where Jesuit Fathers Drueilletes and Dablon said forest fires "are very

common here for a month or two in the summer . . ." (Thwaites, 1898-1901, 46: 279; quoted in Rogers, 1963: 8). One very early records of extensive fires comes from the Jesuit Father de Crepieul, writing in the area around Lake St. John to the southeast of Waswanipi in 1674. He reported that, "There may also be seen the recent traces which cruel fires have left in these vast forests. The Savages say they have spread over more than two hundred leagues" (Thwaites, 1896-1901, V. 59: 31 cited in Rogers, 1963: 8). This indicates an area burned, probably by several forest fires, which extend roughly 965 to 980 km. long. A burned area of this length, if it had an average width of 10 to 20 km, would cover 9,600 to 19,200 sq. km. The text indicates that this was caused by more than one fire, but it implies that the fires were sufficiently close in time and locations that a contiguous stretch of land could be described as an extent of burned forest that was distinct from adjacent areas. This would be expected to be a very common pattern, with numerous large fires occurring when propitious conditions occurred. In sum, fires as large as 8,000 sq. km. appear to have occurred in past centuries.

The process of regeneration of dominantly black spruce and moss forests, which characterize the Waswanipi and northwestern Quebec areas, following fires are complex. The model I develop here is based on re-colonization by species other than black spruce followed some years later by the reestablishment of a black spruce forest.[9] Following forest fires several species of herbs and shrubs find conditions suitable to re-colonize the burn, starting almost immediately. On well-drained sites the tree sapling growth is often well re-established within a year or a few years of fires, and birch, poplar, jack pine or black spruce can create a forest of mature tree height from 20 or 30 years after a burn. Black spruce is the only one of these trees that grows easily in the shade created by the first trees to grow and it may become a predominant species by about 50 or more years following the fire as it continues to reproduce. By 70 or 100 years the mature black spruce forest is established with approximately similar composition to that which preceded the fires. Later, as the black spruce themselves reach their age limits there is also a change in the density and form of trees in a forest as reproduction may not fully replace trees lost due to age, wind throw, insects, etc. (Sirois, 1996: 62, 65-66). On areas where the forest growth is continuous the period of forest development may be completed and deteriorating conditions may occur again after 100 to 150 years, although various conditions may lead to longer periods of 250 or more years. In the aging forests, the increasing debris build-up on the ground, and the deadwood, increase the likelihood that forest fires will become intense, and spread widely through the extensive stands created by the last intensive fire some 150 or more years before.

During the sequence of development of the vegetation from just after a burn to mature coniferous forest a succession of different wildlife colonize the environment (see Feit, 1969; and Feit 1979, Appendix 9-3 for details and references). Small herbivores and certain fur-bearing primary carnivores are the first animals to permanently re-inhabit the burned area, with the shrubs. At this time the region supports no substantial permanent winter big game mammals, although there are a variety of visitors, mostly in summer. The beaver inhabits the area in numbers with the mature shrubs and early deciduous forest and it is generally thought to be able to maintain its populations throughout succeeding forest stages. The moose visit areas in the shrub and early forest development stages, but permanently reside for the first time in the early years of the development of the mature tree stands, and large populations of moose are limited to these middle years of forest development. The caribou is common only in the later old coniferous forests.[10] Fish would be common throughout the stages, although they may decline briefly after fires if ash contaminates water bodies.

The first implication to draw from this model is that a burned area would not be inhabitable by Algonquian hunters on a year-round basis during the early years following a fire. In the first years following a fire the only subsistence that might be secure within the burned area would based on fish and small game, but fish are harvested in numbers mainly on a seasonal basis and small game are highly variable from year to year. Seasonal use of a burned area would be possible within a very few years, but full year-round occupancy would probably await the re-establishment of big game including both beaver and moose, a process likely to take one to two decades at the minimum.

b. Assumptions about Algonquian Social Organization

To explore the social inferences that can be drawn from the conditions that would follow forest fires I will assume that the social organization of the Algonquian people of this area in pre-contact times is

basically similar to that described from 19th century ethno-historical records studied by Toby Morantz, because these features are consistent with the archaeological findings. Francis and Morantz summarize the archaeological findings from approximately 100 sites in the region up to the 1980s. These give a picture of small mobile hunting groups comprised of several families (two to four) and camp sizes of ten to twenty persons (1983:14). There are some larger sites of up to 300 people that suggest summer meeting places occupied for limited durations (1983: 14). Sites show that people exploited a wide range of wildlife resources, including in the northern areas beaver and caribou (1983: 14), and to the south nearer Waswanipi beaver and moose.

Toby Morantz based her extensive analysis of Cree social organization on the first half of the 19th century HBC fur trade records, a period when the Algonquians of the region had been engaged in the fur trade with Europeans for over 200 years, and it is clear that hunting territories were in use (1983: 58). However, she finds that these data are generally consistent with the information that can be derived from the archaeological record of the pre-contact period. I have therefore assumed that while the general social organizational features Morantz describes also existed in pre-contact times, this is not the case for the specific forms of territoriality. Morantz finds, in keeping with the archaeological record, that multi-family winter co-residential hunting groups were common (1983: 61). Traders listed people by nuclear family, but many casual references in their records make clear that extended families were the norm. Commensal groups did sometimes hunt alone, but "most often the co-residential group consisted of at least two or more commensal units" (Morantz, 1983: 91). Most co-residential groups displayed stability over time although there was a pattern of reorganization as offspring matured (1983: 93), and when resources were scare co-residential groups could break up into commensal groups. The reports suggest that, in general, important relations between individuals and recruitment to groups were based on alliance and productive links as opposed to being genealogically based (1983: 88). Some trade records "indicate that the head or leader of such groups was the more senior man" (1983: 93). Morantz notes that in the 19th century the head of the family controlled the resources of the hunting territory (1983: 93), and that co-residential groups were "obviously associated with specific hunting territories, considered as belonging to one individual" (1983: 93). I do not assume that this was always the case.

People who came from inland to trade at HBC posts on the coast of James Bay often came in groups that traveled and traded together over many years. The records indicate that these larger, multi-co-residential groups, or "local groups," were not normally residing together in winter (1983: 77). Leadership was along family lines (1983: 98).[11] The size of local groups varied from two to nine hunters, and averaged six hunters (1983: 96). From the records Morantz shows that the lands of hunters who comprised a local group "were usually in the same general region if not contiguous" (1983:77). Finally the HBC records also talk of some hunters as a "chief" or "inland chief," but the records are not clear about their roles (1983: 77).[12] Morantz indicates that if a multi-local group, macro-group, existed it was not named, nor was it an economic unit for the fur trade (1983:77). She concludes that large group identity is not well defined, although there may have been a "level of social organization beyond the local group" because of these references by HBC traders to men they saw as higher status "chiefs" (1983: 100-1). The archaeological record, as noted above, does identify some summer sites as places where several hundred people gathered. It remains unclear if this was a group or a following (1983: 103-4), and there are no clear indications that members or followers defined themselves territorially (1983: 102).

Thus for the pre-contact period I assume that extended families were the commensal groups. Two or more commensal groups lived together in co-residential groups that endured over years but that they broke up and were reconfigured as offspring matured and if resource conditions deteriorated. As co-residential groups they tended to use a common area of land, although I initially make no presumptions about the tenure that applies to the area(s) they use together. I also assume that several co-residential groups together formed local groups. These groups may be flexible in composition, capable of incorporating new co-residential groups, based on alliances and production. I assume these groups have a leadership based on competence and general age seniority, or a capacity for such leadership, and that the co-residential groups comprising them tend to hunt and reside on areas more or less contiguous with one another, although without any tenure in common. Local groups are in regular communication through visits throughout the year, and may have places they gather at particular seasons. I make no assumptions about leadership or identities, or territorial

arrangements associated with these gatherings or groups. Now we can return to consider the social conditions following extensive forest fires.

c. Forest Fires, Hunting Areas, Social Groups and Subsistence Scarcities

The potential for human survival in an area of a large and intensive burn would be very limited during the following winter for those who survived the fire. Effectively all inhabitants of the area would have to abandon an intensely burned region where only "islands" of unburned forest and limited wildlife may have survived.

We cannot say with any certainty how many co-residential or local groups would be affected by the forest fires or have to relocate but we can make some estimate of the areas that might have been used by co-residential groups in pre-contact times. Hunters of the 1960s could walk in winter on snowshoes up to about a total of 40 kilometers a day on the hunt (Feit, 1978), and still have the time they need time to check and set traps and return to camp. Activity time was limited by the short period of winter daylight, albeit that hunters often left and returned in the twilight periods. Beyond 20 kilometers to the most distant point, and in practice often at 10 kilometers distance, groups would tend to relocate their camps, or set up temporary camps, rather than hunt further afield from the same camp. In the 17th century the Jesuits reported people "broke camp" when "there was no longer any game within 3 or 4 leagues of us" or 15 to 20 km. (Thwaites, 1896-2001, Vol. 7: 109; cited in Gadacz, 1975: 154). Thus, for a co-residential hunting group, I suggest that its members can generally hunt an area within a 20 kilometer radius of its camp site, or up to a maximum of 1250 sq. km., although in many cases they might actually use a smaller area, up to 10 kilometers distant and a maximum of 310 sq. km. How large an area a group could use during a hunting season, from fall to spring, would be a function of the number of camp moves it made. It is clear from stories about the early 20th century periods of hardship that under duress groups can move almost continually in search of subsistence (see Tanner, 1978). However, I assume that were it possible to limit the number of moves made, groups would choose to do so, making only two moves at seasonal breaks when different wildlife resources become available, at freeze-up and the thaw (with each co-residential group therefore using from 930 to 3750 sq. km. at a maximum).[13] Thus, I conclude that an extensive forest fire would cover an area larger than that typically being used by just one co-residential group, and that it might cover an area that was typically equivalent to that used by one to four local groups comprised of two or three co-residential groups.

Members of the local groups who survived an intensive fire would find themselves having to abandon their lands for a decade or possibly more. If a small part of the lands a local group used were burned they might be able to make adjustments. But for those groups where the burned area coincided substantially with lands they hunted there would be a need to access adjacent unburned lands. Several co-residential groups would almost certainly have to relocate. They would first have to try to find lands where they could survive the coming winter, and then where they could stay for most of the following decade or two. From their experiences of smaller fires and the regeneration of those burned areas they would be aware that they faced a multi-year period until they or others would have an opportunity to live year-round on the lands that had just burned.

It is most likely that they would not find unclaimed lands and that they would have to relocate to occupied lands. Areas of unclaimed and unused lands might exist for various periods, especially if human population densities were low in relation to game abundance. But one could reasonably assume that large unused areas would be uncommon because lands not hunted for several years would have had abundant game and would have been attractive areas for those nearby to hunt. Thus unused lands would tend to be regularly incorporated into patterns of use by hunters from adjacent lands, and not left completely unused for any length of time. When human population densities were higher in relation to game abundance there would not be large tracts of land unused any significant length of time.

The pre-fire intensity of human use of lands adjacent to the area that burned could be quite variable. Nevertheless, this sudden relocation of several commensal groups onto adjacent lands implies a significant rise in human residents on those lands. This would create a significant rise in the demands on subsistence wildlife on those adjacent lands, and subsistence risk, whether the lands could support the intensified use or not. Where local conditions were not promising it seems likely that some groups would relocate to lands more distant from the burned areas, spreading more widely the processes of social change.

Thus, I think that on the basis of these models one could conclude that local periods of resource intensification, and increased subsistence risk or scarcity would occur. These would be created by the increased demands for subsistence on the areas adjacent to a large forest fire that would occur when co-residential groups from a burned area had to relocate to already occupied lands. The rapid increase in subsistence demands on adjacent areas and risk would extend for one or two decades. Such large fires and group relocations would be a periodic feature of boreal forest regions. It would not necessarily be the case that resources would always be scarce when relocation happened, but as the fires and relocations would be recurrent during pre-contact times there would be an expectation that in some of these instances there would be cases of a scarcity of wildlife resources or an increase in subsistence risk, as well as just an intensification of wildlife resource use.

I would therefore argue on the basis of these models of ecological and social conditions that hunting territories were plausible, and likely, during pre-contact times, as well as during the fur trade and the contemporary era. This is consistent with the ethnological and ethnohistorical findings, and it suggests that hunting territories would be plausible throughout the sub-arctic boreal forest region and over the long period before they were described by Europeans.

E. A HUNTING TERRITORY "STORY"

As a final step in this journey through diverse types of evidence and argument, I propose to draw on some of the insights gained from the ethnographic, ethnohistorical and socio-ecological arguments and to build a more social and personalized "story" of how hunting territories might have come to be created, and more commonly, re-adopted and re-discovered as Northern Algonquians dealt with the periodic aftermaths of forest fires in pre-contact times in a region like Waswanipi. For this synthesis I offer a story that goes beyond the evidence, although it is consistent with it.

a. Responding to Fires

As people escaped from the burned area, once it was safe to travel, and as they searched for other survivors and for unburned areas, they would start to assess who had been lost, and which lands had been burned. One of the challenges would be to quickly re-form commensal and family groups that had been fragmented or that had lost members. This process would operate on principles of establishing viable, potentially autonomous commensal groups by bringing isolated individuals and family fragments into new or existing commensal groups that included, at minimum, members who could meet both male and female associated active adult roles, which are considered essential for the long-term viability.

Because of the values of social reciprocity and respect for autonomy, as well as the need for information about the lands to which groups were relocating, it would be likely that commensal groups moving onto lands adjacent to the burned area would, where possible, seek to activate ties to adjacent groups in order to establish ongoing relations and aid. This would not necessarily always work out. Nevertheless, the formation or re-organization of co-residential groups would occur, as two or more commensal groups sought to maintain or establish the preferred form of co-residence with one or more other groups.

Each co-residential group would likely seek to coordinate its decisions with some others by forming local groups. Here new local group formation would be a response to the trauma and problems of sudden relocation. Local group networks would both facilitate visits among co-residential groups throughout the year and serve as wider communications and security linkages, sharing as groups readjusted to new social neighborhoods, and establishing networks of cooperation and difference *vis á vis* new neighbors. Whether the relocated co-residential groups were incorporated by groups already resident in the adjacent areas or only joined with other relocated groups probably would vary from area to area. In either case a set of social decisions and the redistributions of groups on the land would be effected, whether by coordination, or happenstance in the disorganization, or by competition for land and wildlife.

During this period we could therefore infer that local and co-residential groups would face important decisions about how to: meet immediate needs; re-organize groups and incorporate new members; establish new relations between existing groups now in closer proximity; reallocate use of lands and wildlife among groups or readjust to competing users; substantially increase wildlife harvests in an area; hunt so as to

provide as reliable a subsistence as was possible in what must be assumed to have been challenging and more risky conditions for all.

b. Knowledge, Leadership and Tenure after a Fire

The very complexity and urgency of the many decisions people faced would tend over time, and as initial crisis and ad hoc responses succeeded, to lead to some general considerations of social ideas and practices. This would call into awareness questions of how best to live and survive in dramatically changing circumstances, not necessarily because people intended to reconsider their social arrangements, but by the very process of having to decide so many things in such a short time. Groups could find answers themselves, or as they saw that decisions of others "made sense" they could adopt them. Thus the process would "open the way" for changing social practices and norms as not only current practices were tried, but also those known to have existed before, or known through stories, or known to be used by other groups, or imagined, or modified in the current circumstances were tried by one group or another. That is, it would be a period in which widespread changes in socio-cultural practices were likely to develop, despite the urgent tasks facing each group and the desired relative autonomy of groups.

In this context there would also be a clear need to reach decisions within each local group, and maybe among local groups, about where co-residential groups would use lands and wildlife, so that they were not unnecessarily crossing each others' paths, or moving into areas that had already been hunted by others. These decisions would be part and parcel of the decisions that would be reshaping social groups, and the composition of co-residential groups especially would be profoundly tied to and shaped by decisions about where people would be living on the land and hunting. The two decisions would often be inseparable, to invite people into a co-residential group is to invite them to use the same land. The process of social organizational changes would thus come to be embedded in considerations of the forms of allocations of access to lands and wildlife that would be appropriate to the new circumstances of the groups. Under these conditions, and in the midst of these processes, various forms of tenure and hunting coordination from allotment to various kinds of hunting territory practices would be tried. For some time many arrangements would be of necessity *ad hoc*, but various forms of co-ordination among those groups that were not in direct competition would develop.

Most of the relocated commensal or co-residential groups would be new to the areas in which they would reside, or at least not regular occupants of them. Among collaborating groups there would be a perceived need to plan or coordinate decisions and activities about where and when to hunt specific game, both to avoid overlaps, and because game is unevenly distributed in space and time, and those with the best knowledge of the land could reduce the hunting uncertainties for others. This would put considerable value on knowledge of the land and the wildlife and their distributions and abundance. Thus many of those relocated commensal or co-residential groups who could make arrangements to live with those who knew an area well, or who could get detailed advice from them, would likely find it advantageous and comforting. This would require that hunters knowledgeable about the area to be hunted would take some form of leadership role~~s~~ in exchanging knowledge, organizing the travels and distribution of groups over the land, and organizing hunting activities. It would help existing residents of an area to coordinate the newcomers' activities with their own. Forms of leadership would be both informally asserted, and presented as a benefit to others. And so forms of leadership that were based on knowledgeable performance and sharing would likely be recognized as beneficial by many of those who were not as informed about local conditions, or not very sure what to do in the complex circumstances.

Such leadership, in so far as it involved allocation of groups onto the land, might be organized in a variety of ways, including through either annual allotment systems, or though the recognition of multi-year leadership of groups repeatedly using the same areas that gained social recognition as distinct areas used by this group over a course of years, i.e. hunting territories, or seasonally used territories used for specific resource harvesting activities (like the goose-hunting activities of contemporary Cree). Thus both allotment and varieties of hunting territory practices would be likely to emerge as practices in some groups in these circumstances.

Given the awareness that the increased number of people occupying an area would likely need to stay for a decade or more, it could also be likely to be seen as "making sense" to be able to organize the hunt

so as to intensify the harvesting of wildlife in ways that would not lead to their being rapidly depleted, where this was a possibility, especially for some big game species and waterfowl.[14] That is, some form of multi-year planning of wildlife hunting use would likely be a goal that would develop after the initial crisis; whether or not this took the form we would today call conservation or management. Putting knowledgeable leadership into practice implies that co-residential and local groups develop some continuity over time and that there be a means by which they are allocated access to lands.

An allotment system would be an effective means that would emerge during this period, if it were not already present. It would provide a relatively egalitarian setting in which general knowledge about lands and wildlife distributions could be recognized and could have a decisive role in a more or less collective agreement about which groups should go where. Hunting territories would provide similar advantages, although they would require the acceptance of somewhat more enduring leadership, and maybe inequality. But they would also emerge, if they were not already practiced. For groups that had been resident on the lands to which others were relocating they would be a means of asserting the authority to take leadership roles, and to have a priority in fulfilling those roles. For those who were current or emerging leaders, hunting territories would be ways of being recognized as leaders whose status would extend over the course of years. Hunting territories permit a more intensive harvest, and returning to the same areas repeatedly would also make it more feasible to manage the present harvests in ways that did not unnecessarily deplete future opportunities. Hunting territories could reduce conflicts among groups now in closer proximity to one another, at least once the allocation of hunting territories themselves was established, although they might initially provoke or enhance disagreements if they were not already present.

The conditions in which these leadership and territorial patterns were most likely to have occurred were not continuous. The conditions described above following intensive forest fires would have occurred every century or few centuries and would have existed for about a generation. It is impossible to know if hunting territory practices would change or be maintained as conditions changed over the decades. Thus hunting territories would be very likely to emerge, and they would likely be preferable to annual allotments for some groups. They could be actively adopted and preferred by those in emerging leadership roles, by those seeking to live well in social groups that had been recently and dramatically reorganized, and by those seeking to meet their immediate needs in what were perceived as difficult circumstances that would continue over a number of years.

F. CONCLUSIONS

One effect of the detailed ethnographies of the 1970s and early 1980s was to show how Cree hunting territory and conservation practices and ideas were interrelated with logics and conditions that did not tie them to the specific features of the fur trade or the conditions that it created. The ethnographic studies showed how the tenure practices, hunting patterns, human-animal relations, conservation practices, leadership, social relations, religious practices and cosmologies reproduced in contemporary Cree communities are interconnected. Once it was clear from these studies that hunting territories were not forms of private property but that they were embedded in these wider patterns of Algonquian social reproduction, several sets of discussions developed in support of the possibility that hunting territories existed before the time of European arrival, and during the early period of the fur trade prior to their description by fur traders and missionaries. One of these discussions focused on the socio-ecological interconnections between a religious ethnoecology, hunting leaders' knowledge of the condition of game in an area they hunted regularly, the social organization of hunting leadership, and the use of hunting territories that facilitated returning to the same lands over a period of years so that game harvests could respond to the observable trends and the understandings of the conditions of wildlife populations. Hunters themselves discussed how they found subsistence hunting, social reciprocity, conservation and social leadership all were enhanced by hunting territory practices. Therefore, it was suggested, hunters in the past would have been likely to regularly adopt such practices for any one or more of these reasons during the periods of the fur trade and before, when conditions permitted. It was therefore not certain, but it was plausible that hunting territories existed throughout the period before they were "discovered," or more accurately, understood by Europeans.

Another set of arguments sought a broader base of consensus by focusing on the reproduction of hunting practices in a set of environmental conditions that would have created increased subsistence risk or

periodic subsistence shortages. These would have made hunting territories a likely means to improved subsistence under such conditions that recur as a result of the large forest fires that periodically occur throughout the sub-arctic boreal forests.

Another key insight was that Cree had reproduced, although not without transformations, a pattern of relationships, ideas and practices of social and semiotic relations that had considerable autonomy from the fur trade and dominant European practices and knowledge. The distinctiveness of these practices spoke to their likely continuities throughout the fur trade. This view tended to be supported by ethnohistorical records which showed that core features of Algonquian cosmologies, social organization, some forms of leadership and a variety of tenure practices were reproduced through the fur trade period from the 17th century on. The view that hunting territories probably existed before European contact and through the fur trade, even in periods when they were not recognized or reported by missionaries and traders, thus gained acceptance among some, but not all, Algonquianists in the 1980s.

More recently it has been argued by Shepard Krech (and before him by Arthur J. Ray) that hunting territories did not exist, or were not in widespread use, until Europeans taught Northern Algonquians about family hunting territories and how to conserve wildlife. The ethnohistorical records of Northern Algonquian tenure practices and conservation of game populations begin in the mid-18th century, some seventy years before the initiation of the explicit HBC practices in the 1820s, thus making the attribution of hunting territories and conservation practices to a dominant European influence unconvincing (see Feit, In Press). The main evidence for denying hunting territories existed widely before the 19th century HBC policies of "conservation" are the repeated reports of missionaries and fur traders of game depletions throughout the fur trade period. In this paper I suggest that the recurrence of hunting without game depletion is actually supported by the ethnohistorical evidence of periodic game depletion, because such depletions are almost always attributed to trespass or intrusions, implying that the trapping practiced by local hunters before the trespass or intrusion was not depleting the game. This challenges the conclusion that depletions show Algonquians did not know how to hunt without reducing game populations. The reports which indicate that there were recurrent trespass and depletions, just a few decades apart, show that game recovery was repeated, sometimes rapid, and that sometimes recovery was clearly aided by trappers' own practices. The ethnohistorical evidence of game depletions and recoveries reported throughout the fur trade period therefore provide additional evidence that game conservation and some forms of hunting territoriality occurred throughout the fur trade period as well.

In order to examine more directly the context of hunting in the period before the fur trade, I elaborated on the earlier analysis based on models of pre-contact ecological and social conditions. I show that increases in subsistence risk or game shortages would have occurred in pre-contact conditions as a result of the periodic recurrences of large scale forest fires in boreal forests. These fires would force the displacement of one or more local groups, comprised of several co-residential hunting groups, onto the lands of adjacent groups. While this might sometimes have been easily accommodated, this would not always have been the case, and sometimes intensified demands on game resources, increased subsistence risks, and game scarcities would have occurred that many Algonquianists acknowledge could have been conditions for the development or adoption of hunting territories. The pre-contact period ecological and social modeling therefore supports similar conclusions to those drawn from the ethnological and ethnohistorical analyses.

In the final part of this essay I create a story that is consistent with, but that goes beyond, the evidence about how pre-contact Algonquian hunters might have responded to the disruptions caused by large-scale forest fires. Hunting territories were likely to have been one of the practices adopted or developed as groups tried to quickly cope with the reorganization required as groups displaced by the fire sought to resettle on lands used by adjacent groups of hunters and their families. Hunting territories would probably have co-existed with other tenure arrangements. Thus, in the pre-contact period conditions would have recurred in which hunting territory practices would be likely to be adopted. Tenure practices would very likely have varied over the decades, thus an intermittent use of various hunting territories, along with other tenure practices, is the most plausible conclusion with respect to Algonquian territoriality before the arrival of Europeans and the fur trade. This pattern could have continued through much of the fur trade, albeit in modified forms. The evidence of recent ethnographies, ethnohistorical records, and pre-contact

ecological and social patterns all point in this direction. Hunting territories probably have a long, but discontinuous history in the Algonquian region.

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NOTES

[1] I will use the terms "before contact," "pre-contact," "pre-fur trade," "pre-European fur trade," and "pre-European" and their variations synonymously, unless otherwise indicated. Although some of these terms might be differentiated when used in other contexts, here I will use them to refer to the period prior to the arrival in north-eastern North America of European fishermen and later explorers, fur traders and missionaries, starting in the late 15th century and more importantly during the latter half of the 16th and the 17th centuries. When speaking of the people of the region to the east of James Bay during the early fur trade and pre-contact periods I use the terms Cree or sometimes East Main Cree to differentiate them within the wider groups of Northern Algonquian and Algonquian. This is for the sake of convenience, as the term "Cree" only came into use in the 19th century (Morantz, 1983: 12). As Morantz notes, all the evidence indicates that the Cree people of today are the direct descendents of the people in the area in pre-contact times (1983: 14). In addition, I use the term "Innu" for the groups called "Montagnais" in the hintorical literature. Finally, in this article the term "hunter" is inclusive of both genders.

[2] In this paper I will use the term "hunting territories" rather than the more traditional term "family hunting territories." I do so in order to encompass a variety of multi-year tenure practices, that include both more and less formal forms of family hunting territories, and also practices like seasonal goose hunting territories, or potentially sea tenure arrangements. I distinguish "hunting territories" from tenure arrangements of access to lands where the use of an area does not clearly endure over a course of years, such as systems of annual allotment of hunting lands. All of these hunting band-level tenure arrangements should be distinguished from any tribal or macro-band territories which were larger areas used by macro-groups or groupings of local groups. The term "hunting territories before 1750" refers to the period in which there are no direct descriptions of the existence of hunting territories, including both the pre-mid-18th century fur trade and the pre-contact period.

[3] My initial work on the issue of hunting territories dates to my library-based MA Thesis (1969). In it I questioned whether hunting territories could have existed under pre-contact conditions by learning what I could of long-term ecological cycles in the sub-arctic boreal forest ecosystem (a relatively new concept in anthropology at the time). I specifically examined the patterns of forest fires in the boreal forests around Mistassini and concluded that hunting territory systems were precluded by environmental conditions before the European fur trade, because forest fires would have made continuing use of an area impossible for a several-decade long period after each fire, every 150 to 350 years. Richard Salisbury was the reader who evaluated my thesis and he commented that while it was a good thesis, I had "reached the wrong conclusion." I was stunned. He suggested that much of my evidence on forest fires, and resulting forest and wildlife dynamics, would support the plausibility of hunting territories having existed prior to the fur trade, if I would consider how hunters would respond to those conditions and not simply argue that the ecological conditions precluded these social institutions (a comment that influenced the shape of my later

response to Knight cited above). I was thoroughly convinced of Salisbury's suggestion during my doctoral field research from 1968 to 1970, where I came to understand contemporary Waswanipi Cree cultural knowledge, hunting decisions, and territorial practices.

[4] He mentions that Northern Algonquians actively participated in trade, and acquisitiveness appears to explain some depletions (Krech, 1999: 176, 181), but in other cases game were not depleted during extensive periods of trading, sometimes to the surprise of European traders (1999: 185). Where depletion began groups sometimes became trade middlemen, or political allies, to groups further removed from European trading sites with more abundant resources, and sometimes they trespassed on others lands or warred to control the resources or trade of others (1999: 176). Sometimes these responses were accompanied by further depletion of game in the initial area, sometimes they allowed game to recover because those lands were not hunted (1999: 176). Sometimes trading companies or Canadian traders promoted trespass by outside and mobile trappers to deplete game that would otherwise go to competitors (1999: 187). Sometimes the groups whose lands were being trespassed on "trapped out" their lands in advance of wave of outside trappers (see 1999: 193). Steel traps and new techniques made more intensive trapping possible (1999: 177). Sometimes Northern Algonquians were desultory trappers, some for religious reasons (1999: 176). The lands of such groups often became targets of trespass, although they were sometimes defended so it took organized intrusions (1999: 176).

[5] In addition to these two factors, five other explanations were mentioned, once each: faunal population cycles, disease among the animals, trapper demand, new technologies, and a scorched earth policy promoted by the HBC to pre-empt other fur traders.

[6] One "line of evidence" I do not systematically explore here are the archaeological findings. The archaeological evidence, while useful for establishing subsistence sources and social group sizes as I note below, is according to the colleagues I have asked unable at present to indicate the general pattern of social and territorial organization, given the size of the region and the comparatively low density of occupation. The model I present here for forests at Waswanipi that are part of an area covered by glacial deposits created by massive glacial lakes is different in important respects from that I developed for the adjacent but not clay bed forests of the Mistissini region in my MA Thesis (see Feit, 1969). However, the conclusions I would draw from each about patterns of hunting territoriality would be parallel. It would be of interest to continue to develop other such models, using archaeological records, for example, to locate areas where caribou occurred without moose, or vice versa, or to consider the effects of access to marine resources.

[7] Thus, recent studies of forests in the Abitibi region of northwestern Quebec, including those at Waswanipi, indicate that they have burned at least once in the last 150 years (Gauthier *et al.*, 2001: 12; see also Sirois, 1996: 61), but many areas have burned more than once in that period. Large and intense forest fires have particular implications for human occupants of the region and social and economic conditions they must respond to. It is important to note that the durations I speak of between very large and intensive fires in mature forests are different from those that foresters have adopted for their concept of "fire cycles," which refer to the number of years required for all of an area of interest, for example an ecological region, to be burned at least once (Gauthier, *et al.*, 2001: 12). Intense fires can occur under various conditions, but they are especially likely in very dry weather conditions and in older forest stands. Because of the accumulation of vegetal debris on the forest floor of older stands they can provide fuel for intensifying the fires as well as support smoldering fires during days and weeks, so that a fire can recur after a rain shower or a series of changes in wind conditions.

[8] While aboriginal peoples' activities have proved to be increasingly important for understanding the extent and effect of forest fires on the vegetation of a number of North American ecosystems, e.g. the prairies, the southern pine forests and the eastern deciduous forests (Pyne 1982), in the boreal forest natural causes, namely the seasonally frequent thunder storms and the specific characteristics of several of the coniferous tree species, provide an adequate explanation for the frequency of forest fires started by lightening, although humans may also play a role (Lewis 1982).

[9] Fires can lead both to conditions that directly or via an intermediary stage recreate a forest very similar to the black spruce dominated forest which burned, or to conditions in which the changed tree species composition that initially re-colonize a burned area will be maintained and the original forest composition

will not be recreated (Gagnon and Morin, 2001; Gauthier, *et al.*, 2001). The model I describe is reasonable for my purposes because while other sequences are possible, the regeneration would be generally similar in the earliest years of re-colonization by herbs, shrubs and tree saplings in each of the possible forest regeneration sequences, and it is the early period which I focus on here because it is the time of greatest social readjustment for human groups.

[10] Small mammal herbivores, particularly hare, are associated with young deciduous species of shrubs or young tree species, although voles and mice return as well. The primary carnivores which are dependent on the small rodents or hare for food, particularly the fur-bearing species (only a few of which are regularly eaten by Cree today), and the lynx, become abundant with the middle and later shrub stage. Many of these species may also decline in the mature coniferous forests. The unique feature of beaver populations, as others have noted, is their potential for relative stability during several periods after development of a forest. The winter food of the beaver is the bark and twigs of most hardwoods, and beaver utilize deciduous forests only within a few hundred feet of the stream or lake shore. Spring break-up of the ice, accompanied by flooding, can periodically thin out old stands and open the way for renewed deciduous growth in these areas. The water habitat too is relatively stable because the beaver's ability to construct and maintain dams gives it control of the water levels and makes it comparatively immune from annual variations in water supply. Moose will generally stay in an area only when forests are mature enough to provide shelter as well as food. The woodland caribou are animals of the mature coniferous forests. During the winter they feed heavily on slow-growing arboreal and terrestrial lichens which generally become abundant in the coniferous forest 50 to 120 years after fire.

[11] The core members of these groups were patrilaterally related men, although they were not exclusively composed of patrilaterally related kin (Morantz, 1983: 95). These groups were "almost certainly exogamous" (1983: 89). They were sometimes listed together in the trade records, and traders sometimes spoke of a "principal man" in the "tribe" or "band" (Morantz, 1983: 77) or the "head of family" (1983: 94). Partly because the HBC references to these leaders seem more casual than deliberate Morantz suggests that these were leaders acknowledged by the other hunters for personal abilities, and that "they were not leaders that served the HBC" (1983: 96-7). The patterns of leadership of both local groups and these macro-groups or followings were likely influenced by the formal trading captain system which both the HBC and French traders introduced in the 18th century, but which had been abandoned by the time of these 19th century records of Algonquian social organization (see Morantz, 1983: 129-156). What their exact influence was is unclear. In contrast to the adjacent areas to the south and west where "big men" emerged, the trading captains recognized and supported by the fur traders did not achieve such an elevated status as, for example, their counterparts to the west of the bay who became middlemen in the fur trade between the HBC posts on the coasts of James Bay and the hunting peoples further in the interior (Morantz, 1983: 164; 134-5, 155). Nevertheless, I concur with Morantz (1983:151, 152-3) and Bishop (1986, 1998) that we should not accept overly "simple" egalitarian models of Algonquian social organization (see, Feit, 1991b).

[12] Interestingly, Morantz notes than unlike the areas to the north, east, south and southwest of the lands draining into the east side of James Bay, the fur trade records do not refer to named groups or consciousness of group identities corresponding to macro bands within the region (1983: 12, 100), except for the Mistissini. The Mistissini are mentioned by Jesuits starting in 1643-44 as group who gathered seasonally on the large lake of that name along one of the early trade routes between the St. Lawrence Valley and the coast of James Bay (Morantz, 1983: 12). During the 19th century the traders talked about two groups trading at the post at Mistassini Lake, that appear to be geographically based macro-groups, each with a chief or powerful man (1983:78).

[13] For comparison, I note that at Waswanipi a hunting territory in 2000 averaged 620 sq. km. (Hayeur, 2001: 76). However, the areas of hunting territories are larger at other Cree communities, and they appear to get bigger as one moves north (see Hayeur, 2001: 76), ranging in the inland closed-crown forested zone from 1033 sq. km. at Nemiscau to 1,618 sq. km. at Mistassini whose northernmost hunting territories extend into open forests.

[14] The increased harvests of wildlife on the lands adjacent to the burned areas would also make it a challenge for hunters to meet their needs. It would be advantageous to be able to use hunting techniques that were

particularly reliable, and to have access to knowledge or direction about how to organize the hunt in the area being used – in relation to wildlife migratory routes, in relation to concentration sites for spawning, feeding or birthing, in relation to the geographic features likely to be habitation sites of particular species such as uplands where moose might congregate in winter, or lichen-bearing forests might attract woodland caribou, etc. – and to know the timing and techniques appropriate to each setting. Meeting subsistence needs, and achieving such security as was possible under what would be expected to be generally very insecure or uncertain conditions would therefore be another key concern and challenge.

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