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3. National Capital Region – Physical and Biological Environment

The story of human settlement in the NCR is intimately linked to events that marked the evolution of the physical and biological environment and the later disappearance of the Wisconsinian ice cap. A brief review of these events will help to reconstruct the major features of the various landscapes found in the NCR throughout the ages and to identify the pace and peaks of the environmental changes confronting human populations.

3.1 Land of Ice and Water

Approximately 20,000 years ago, general climatic improvement prompted the thawing of the Wisconsinian ice cap that entirely covered Quebec and Ontario. This glacial retreat, punctuated by pauses and readvances, continued for several thousand years.

Circa 13,000 BP (before the present), the Quebec's southern Appalachian region became ice free, while the glacial fringe extended to the Great Lakes region of Ontario (Prest, 1970). The St. Lawrence River Valley, the lower and middle Ottawa River valleys and southern Ontario emerged from their icy cover circa 12,000 BP; with the Laurentian shelf and the edge of the Laurentian Mountains emerging circa 11,000 BP (Parent and al., 1985).

At that time, the glacier paused briefly, and perhaps even advanced slightly, resulting in the formation of the Saint Narcissus Moraine, in the Ottawa Valley north of Aux Allumettes Island and extending along the Laurentians to the Charlevoix region (Karrow, 1984; Parent and al, 1985).

The glacier's retreat from the Quebec region opened up a strait through which salt water flooded the St. Lawrence lowlands, at the time below sea level because of the pressure exerted on the earth's crust for thousands of years by the glacier.

At the foot of the glacier, the Champlain Sea submerged all of south-eastern Ontario and flooded the Ottawa Valley as far as Pembroke (Karrow, 1984), and perhaps even Deep River (Catto, 1982), more than 150 kilometres upstream from the National Capital Region.

Thus, only the regions south of the sea were conducive to settlement. Shortly before 11,000 BP, however, the sea retreated from the glacier, receding progressively by a few dozen metres per year, opening up new settlement areas on the northern slope.

Marine sediment has been identified in the Gatineau and Ottawa river valleys to an altitude of 198 meters; glacio-isostatic warping between the northern and southern basins of the sea caused the sea to settle at between 167 and 168 meters in the southern parts of the Ottawa Valley during maximum flooding, circa 12,000 BP (Parent and al., 1985).

Nearly all of the NCR lands were flooded at the time. Only the highest peaks of Gatineau Park pierced the surface of the water. The sea cut deeply into the Gatineau Valley, completely flooding the La Pêche River Valley north of the Park, and submerging the lowlands around La Pêche Lake to the west, even crossing the Eardley Escarpment to the south to reach the Ottawa Valley via the saddle of the bay and tiny Fairburn Lake.

The central portion of Gatineau Park was not left unscathed. At its height, the sea penetrated the Chelsea Creek Valley before flowing into the Meech, Harrington and Philippe lake chain through a deep fault in the Laurentian massive. Flood plain deposits have been identified around Meech and Harrington lakes (Richard, 1972, 1973). The De la Prairie Creek Valley, northwest of Lac Philippe, may have been flooded, permitting the sea to reach the La Pêche River Valley via the fault containing Meech, Harrington and Philippe lake fault.

Flood plain deposits have also been identified on the eastern flank of the Laurentian Escarpment, in the Tenaga region of Meech Creek, and Brown and Carman lakes. Located below the Champlain Sea high-water mark, these deposits indicate the location of the littoral at various stages as the waters receded.

Between 12,000 and 11,000 BP, sea level dropped by several dozen meters as a result of isostatic rebound. Romanelli (1976) estimated sea level in the Gatineau River basin circa 11,000 BP at about 110 meters. According to Richard (1978) and Parent and al. (1985), an altitude of 140 meters would seem to be more realistic for the northern basin of the Champlain Sea.

In the Gatineau River Valley, the sea then receded from the La Pêche River Valley and the Meech, Harrington and Philippe lake chain to rest on the Gatineau River lowlands below Farrelton. On the southern edge of Gatineau Park, the littoral has hardly moved, with sea level reaching the foot of the Eardley Escarpment. On the other hand, to the west, the marine shoreline retreated from the Laurentian Hills to a point several kilometres farther south, giving free rein to the Quyon River to entrench itself into the clay sediment of the sea bed. East of the Gatineau Valley, the banks of the sea reached as far as the Laurentian foothills, deeply penetrating certain gaps in the Canadian Shield, particularly the Blanche and Du Lièvre river valleys.

There is no existing data for the southern basin during this timeframe. Given the much lower relief, however, a drop in water level of several dozen meters would necessarily have resulted in the rapid migration of the southern basin littòral toward the Ottawa River Valley over several dozens of kilometres over approximately a thousand years, i.e. several dozen meters per year. The sea was likely no more than about ten kilometres wide in the NCR circa 11,000 BP and, at low tide, the upper plateaux of the sedimentary rock in the Kanata sector, Nepean and the southern part of Gloucester likely emerged from the marine surface.

From 11,000 to 10,000 BP, the Champlain Sea retreat continued at an accelerated pace. The watery expanse, whose salt content was falling rapidly with the massive influx of glacial meltwater, no longer penetrated the Gatineau River Valley beyond

Chelsea. The Ottawa River estuary was probably located only a few kilometres upstream from the NCR. On the south shore, the Rideau River had practically adjusted to its present-day route, flowing toward the sea somewhere between the current boundaries of Gloucester and Nepean.

Extreme weather conditions prevailed in the NCR circa 12,000 BP. Romanelli (1976) estimated average winter and summer temperatures of the sea near the glacier at between 2 and 8 degrees Celsius.

At that time, grassy tundra and shrubby vegetation, mixed with isolated populations of spruce, poplar, birch and juniper, covered the southern border of the sea (Anderson, 1987). With the glacial retreat, this arctic and sub-arctic vegetation invaded the islands prior to reaching the north shore of the sea, where it persisted until about 10,000 BP.

Shortly after 12,000 BP, in more southerly regions, spruce and poplar forests began to replace the tundra. In the Ottawa Valley region near the sea, poplar forests dominated. Circa 11,000 BP, spruce finally became master of the more southerly regions and began its progression northward, generally supplanting poplar in the Ottawa Valley circa 10,000 BP, and slightly later in the southern Laurentian area. The falling temperatures that prompted a glacial advance, or at least stabilized the glacier circa 11,000 BP, no doubt helped to halt the proliferation of spruce.

Although it is difficult to assess the impact on the biomass of a much shorter period of summer sun and winters longer in the Ottawa Valley than in Arctic regions, there is reason to believe that the animal species inhabiting the NCR region at the time were comparable to those found today on the tundra and taiga of northern Quebec and Ontario, for example, in the Hudson Bay region.

We can therefore infer the presence of approximately 45 mammal species (Macpherson, 1968; Banfield, 1975) of which nearly half were small in size (shrew, mole, vole, mouse, lemming, squirrel, etc.), about fifteen were of medium size (hare, marmot, skunk, beaver, porcupine, fox, martin, stoat, mink, otter, wolf, lynx, wolverine) and only a few were large (black bear, polar bear, moose, caribou and, possibly, musk ox). The most plentiful and gregarious species, caribou, likely dominated the NCR landscape from 12,000 to 10,000 BP. In contrast to most of the other species, however, caribou left the region during the winter to seek refuge and nourishment in the wooded areas south of the Champlain Sea.

Besides mammals, during the short summer season, the newly ice-free lands of the NCR likely hosted more than sixty bird species, attracted by the bounty of the sea and the rich coastal resources of fish, aquatic plants, grasses and insects of all sorts (Cooch, 1968). Swan, geese, duck, loon, falcon, buzzard, owl, crow, tern, seagull, waders, passerines, ptarmigan, and other species more attractive to humans no doubt flowed into the region to nest and raise their young before most of them headed south at the first signs of the coming winter.

During this time, aquatic wildlife was also especially plentiful and diverse in the NCR, particularly due to the presence of the marine ecosystem. We estimate approximately 70 potentially available species, including some thirty marine species and about forty freshwater or anadromous species currently found in the northern regions of Quebec and Ontario (Hunter, 1968). To this number, one must add several species that are currently present in the Atlantic Ocean and St. Lawrence River and which likely extended their reproductive and subsistence territory to the Ottawa Valley during the Champlain Sea episode. Of these, salmon is a possible candidate.

Many of these species could grow to a respectable size, indicating that prehistoric communities equipped with basic technology may have caught them. This is particularly true of sturgeon, pike, pickerel, catfish, lake trout, salmon trout, whitefish, and eventually, salmon, as well as the main freshwater and anadromous species. These resources were more easily accessible during the summer, particularly during spawning, which occurred after spring thaw or before freezing for most species.

The short spring thaw also gave many marine mammal species, such as seal and walrus, an opportunity to frolic freely and bask in the sun on the islets and beaches of the seashore. As evidenced by skeletal remains found in the marine sediment, whales, probably including the beluga and other coldwater species, also ventured within the confines of the seascape at the time, when ice and water dominated the landscape of the NCR, keeping pace with the long desert-like winter and short spawning season, benefiting from the effervescence and abundance of the arctic summer.

3.2 Winter's End

Circa 10,000 BP, the Champlain Sea episode came to a close. The sea extended about 95 meters on the north shore, near Deschênes (Richard, 1978) and 80 metres into the lower Ottawa Valley and onto the northern slope of the St. Lawrence River Valley (Parent and al., 1985). In the NCR, since the seascape was better resorbed, the effects of glacio-isostatic warping were almost non-existent between the southern and northern shores of the Ottawa Valley. Sea level circa 10,000 BP has been estimated at about 90 meters. Radioactive carbon dating of 10,420 ± 150 BP, taken from the whale bones found in the marine sand deposits at altitude 91 metres in the Uplands sector, south of Ottawa, confirm this estimate (Richard, 1973, 1975, 1976).

The sizeable volumes of glacial meltwater, drained by the Ottawa River and its major tributaries, such as the Gatineau River, caused a significant decrease in the salinity of the western basin of the Sea as of 10,300 BP (Rodrigues and Richard, 1983). Several centuries later, circa 9,800 BP, a huge freshwater table, Lampsilis Lake, replaced the Champlain Sea in the Ottawa Valley and throughout the St. Lawrence lowlands (Parent and al., 1985).

There are no data available regarding Lampsilis Lake water level in the central Ottawa Valley, but Parent and al. (1985) estimated the altitude of the freshwater table at roughly 61 meters in the Saint Laurence Valley circa 9,500 BP. Glacio-isostatic

warping in the north-westerly direction was about 0.2m/km in the St. Lawrence lowlands during this period. Given that the westerly warping toward the upstream portion of the Ottawa River was somewhat less (approximately 0.1 m/km), we estimate the level of Lampsilis Lake in the central Ottawa Valley and NCR to have been roughly 70 meters.

At its peak, Lampsilis Lake probably penetrated the Ottawa River bed as far as Des Chats Rapids. With the isostatic rebound, the Deschênes, Little Chaudière and Chaudière rapids in turn all delimited the western boundary of the lake. To the south, the Rideau River likely had already found its final course by the time the fresh water of Lampsilis Lake replaced the salt water of the Champlain Sea.

The southern shore of the lake must have hugged the foot of the rocky escarpment bordering the City of Ottawa. Only the lower portions of the riverside towns (Orléans, Vanier, Ottawa, Nepean and Kanata) and the vast swampy expanse of the Mer Bleue bog, east of Gloucester, were likely still submerged.

North of the Ottawa River, the maximum level of the lake surface likely reached the highlands encircling the City of Hull to the west and north and crossing the northern portion of the City of Gatineau. A series of lower terraces bear witness to the decrease in lacustral level and gradual entrenchment of the Ottawa River.

The presence of such a vast expanse of fresh water in the lower and middle Ottawa River Valley persisted for only a brief time, however. Isostatic rebound quickly pushed back the edges of Lampsilis Lake downstream, leaving the fields open for the Ottawa River, which extended its bed across the marine and lacustral sediment clogging the valley.

The Lampsilis Lake episode ended circa 8,000 BP with the return of salt water to the St. Lawrence Valley. Parent and al. (1985) estimated the altitude of the Ottawa River at Carillon Rapids to be about 30 metres at the time.

The end of the Lampsilis Lake episode in the Ottawa region was marked by a major geological event. Circa 8,000 BP, the Barlow-Ojibway proglacial lakes, which until that time had emptied into the Ottawa River, flowed north following the displacement of the divide between the St. Lawrence and Hudson Bay watersheds (Vincent and Hardy, 1977). This phenomenon prompted a sizeable decrease in river flow, which Catto (1982) estimated to be nearly 50% in the upper Ottawa Valley Deep River sector.

Although Ottawa River flow remained far greater than it is today, it was doubtless after this event that the river adopted its current general outline, carving around the last terrace that mark the alluvial plain at an altitude of approximately 50 metres in the NCR.

This period of hydrographic stabilization coincided with definite climatic improvement circa 10,500 BP, which prompted average winter and summer temperatures of the sea to rise from 4 to 15 degrees (Romanelli, 1976).

The milder temperatures led to a new northward migration of plant species (Anderson, 1987). After the dominance of spruce, which had lasted many centuries, white birch and pine invaded the Ottawa Valley region in large numbers. Birch was king circa 10,000 BP, followed by jack pine circa 9,400 BP and eastern white pine after 9,000 BP.

The change from an arctic climate to a sub-arctic one did not affect landscape alone. It also prompted a total restructuring of the animal kingdom and a general redistribution of the species inhabiting the NCR.

The relatively sudden collapse of the marine ecosystem and the disappearance of most of the fish and mammalian species associated with this system doubtless caused the most significant change. Only marine bird species likely continued to frequent the region on a seasonal basis during spring and fall migrations.

Of the animals that did not depend upon the marine ecosystem, species adapted to an arctic environment left the region, following the glacier in its northerly retreat. The populations of other species better adapted to a sub-arctic environment and a coniferous forest setting increased considerably. New species appeared, finding seasonal habitat in the spruce forest, an alternative in the event of destroyed habitat (epidemics or forest fires) or peak population growth.

Among the mammals, species such as polar bear, musk ox, arctic hare, arctic fox, arctic squirrel and several species of lemming joined the non-resident species. For its part, the caribou, which had been a visitor during the brief arctic summer, became a regular visitor to the NCR, spending the long winter period in the forests of the region and migrating north in summer. Several small caribou herds likely remained in the area year round.

The populations of moose, black bear and most small and medium-sized mammals already present in the region certainly increased sharply.

Among the new arrivals, the smaller species were especially well represented (shrew, mole, vole, mouse, bat, squirrel, fisher, weasel). White-tailed deer was likely the only large mammal to appear, and this to a limited extent only, since the coniferous forest marked the northern boundary of this animal's range.

Among the birds, the change from spruce to pine forest probably more than doubled the number of species found in the NCR from about 60 to more than 140 (Cooch, 1968; Godfrey, 1972). The newly emerging species included, particularly, small seed-eaters and insect-eaters such as vireo, warbler, chickadee, passerine, waders, woodpecker and several larger aquatic or predatory species, such as duck, teal, goldeneye, bluebill, buzzard, owl, falcon, and hawk.

Except for the disappearance for marine species, it is difficult to determine the composition of NCR ichthyofauna from 10,000 BP to 8,000 BP. We can assume that most, if not all, of the freshwater species seeded by the glacial meltwater throughout

the NCR survived the difficult period of decreasing habitats that gave way to the current hydrographic network. We can even suppose that the general improvement of the land-based biomass typical of this era helped to increase not so much the overall size, but the density of the populations in the lakes and waterways as opposed to the preceding period.

3.3 The Ottawa Valley Yesterday and Today

Beginning around 8,000 BP, the Ottawa Valley displayed the variety of landscapes that we see today. The few changes that have occurred since that time have mainly affected the alluvial plain and the estuary formed by the Ottawa River tributaries. These changes are the result of minor fluctuations in river flow due to episodic variations in climatic conditions or rainfall and a major geological event, which no doubt gave the alluvial plain its definitive profile.

This event occurred circa 5,000 BP, and corresponded with the appearance of the outflow at Sarnia and of drainage axes for lakes Superior and Huron toward lakes Erie and Ontario and the St. Lawrence River Valley. Prior to this time, Lake Superior and Lake Huron flowed northward toward Lake Nipissing and the Ottawa River via the Mattawa River (Karrow, 1980, 1984; Karrow and Warner, 1990). This change, circa 5,000 BP, caused a new, relatively sudden drop in Ottawa River flow – approximately 80% (Catto 1980).

As a result of the considerable decline in the rate of isostatic rebound since that time and seasonal variations in the Ottawa River water level, traces of the final significant decrease in flow have been erased throughout the Ottawa Valley alluvial plain, except, perhaps, in the area of the estuary of several larger tributaries. Thus, a low terrace is still perceptible in several areas of the Gatineau River delta at an altitude of roughly 45 meters. The type of alluvial deposit and the configuration of the delta at several spots along this ancient shoreline suggest that it was carved out during the last significant drop in Ottawa River volume.

Over the millennia, the rivers and streams deepened and broadened their beds with spring runoff and the tributary delta continued to stretch until the construction of the Carillon dam finally halted expansion during the late 1950s, raising the Ottawa River level and maintaining it at 1.25 m above average summer levels in the National Capital Region (Ethnoscop Inc., 1993).

Between 8,000 and 6,000 BP, the persistent favourable climatic conditions and the disappearance of the glacier in the northern regions of Quebec led to the gradual development of the forest stands that now cover the Ottawa Valley region.

Between 8,000 and 7,500 BP, the jack pine forests were initially displaced toward the north and established along the Laurentian Mountains, yielding to many new species, such as maple and birch, but primarily to fir. Fir trees dominated the regional forest landscape until roughly 4,800 BP. The fir population then declined dramatically, possible as a result of an epidemic (Anderson, 1987). Its disappearance encouraged

the expansion of numerous hardwood species, particularly beech, maple and oak, which have dominated the Ottawa Valley forest landscape since that time.

In the animal kingdom, the general portrait has changed little over past millennia, especially for fish and mammals, with the possible exception of larger mammals. With the arrival of the deciduous forest, approximately 5,000 years ago, the white-tailed deer was likely the most common large species in the NCR, outnumbering the caribou, which had probably been found only sporadically in the region for some time previously. Like several other small and medium-sized species, caribou developed more easily in the mountainous regions of the Laurentians where the coniferous forest was temporarily located before moving farther north.

With the arrival of the deciduous forest, wapiti may also have appeared in the NCR, although in much smaller numbers than white-tailed deer. Other species, such as racoon, bobcat, long-tailed weasel, coyote and, possibly, cougar, also came to the more southerly regions.

Among the birds, several dozen new species appeared, while only a few followed the coniferous forest in its northerly migration. Again, it was the smaller species that no doubt made the greatest contribution to diversification of the animal kingdom in the NCR. Among the larger species, the Great Blue Heron and several duck species were probably among the species most noticed by the most versatile and cunning predator known to the region: humankind.

4. Sociocultural Landscapes of the NCR during Prehistory and Time of Contact

For the purposes of our study, the dawn of prehistory has been set at circa 11,000 BP (before present), the time at which conditions were favourable in the NCR for the arrival of the first inhabitants. The prehistorical period ended with the permanent settlement of Europeans in New France, during the early 17th century. Next came the Time of Contact, a period of cultural conflict that led to profound transformations in the traditional lifestyles of First Nations peoples, ending in the NCR at the turn of the 18th and 19th centuries with the arrival of Philemon Wright, the forefather of colonization in the Ottawa River Valley.

The prehistorical period has been divided into three main moments or periods highlighting distinct populations or cultural groups: the Paleo-Indian period, the Archaic period and the Woodland period. Each period has also been sub-divided into episodes or sub-periods coinciding with the appearance of specific traditions or phases in the evolution of cultural groups.

4.1 Paleo-Indian Period (11,000-8,000 BP)

The Paleo-Indian period is the least well-documented in Ottawa Valley prehistory, particularly the *Early Paleo-Indian* period, for which we have not yet uncovered any meaningful signs anywhere in Quebec. However, material evidence has been collected from Ontario to the Maritimes, through northern New England (Chapdelaine, 1985).

Although the current portrait of archaeological discoveries in the Ottawa Valley itself indicates relatively late settlement, hardly more than 6,000 years (Chapdelaine, 1997), there is every reason to believe that groups ventured into the NCR much earlier, even when the sea flooded the newly exposed land with glacial runoff. In Ontario alone, more than fifty sites have been indexed, including many east of the Great Lakes (Ellis and Deller, 1990). Fluted projectile heads typical of the Early Paleo-Indian period have also been reported as far as the Rideau Lakes region, barely 80 kilometres south of the Ottawa River (Watson, 1982). Furthermore, the vast majority of Early Paleo-Indian sites in Ontario are located near the shores of the Champlain Sea. This is especially true in the Rideau Lakes area (Watson, 1982) and along the strand lines of Algonquin Lake, a large post-glacial lake (Ellis and Deller, 1990), which flooded central and eastern Ontario before emptying into the Ottawa River and the Champlain Sea circa 10,500 BP.

The fluted spear points, the main indicators of the Early Paleo-Indian period, did not persist beyond this date. They were replaced during the *Late Paleo-Indian* period by new varieties of points announcing new arrivals or indicating technological evolution of the groups inhabiting the strand lines of the Champlain Sea.

Ellis and Deller (1990) suggest that this tradition lasted about 1,000 years (10,500-9,500 BP) and, still based on the shape of the points, featured certain regional

variants. Lanceolate points were used especially by populations in central and eastern Ontario, regions that were, at the time, contiguous with the Ottawa River basin.

A variety of lanceolate points, which we associate with Plano traditions, also appears to be found uniquely on the narrow band running from eastern Ontario to the Maritimes via New England. Points of this specific type have been collected on Thompson Island, near Cornwall in the upper St. Lawrence River Valley and at numerous sites on the Gaspé Peninsula in eastern Quebec (Ritchie,1980; Benmouyal, 1987). Watson (1990) also reported points showing Planoid features in surface collections in the Rideau Lakes region.

Although the Plano appear to have arrived in Ontario from the west at the tail end of the Paleo-Indian period, it would be quite astonishing if the NCR and central Ottawa Valley, pocketed between the Champlain Sea and the ranges of these two groups, had escaped settlement.

Most of the Late Paleo-Indian sites of the Gaspé Peninsula are located along the strand of the sea (Goldthwait Sea) where they have often been associated with ancient estuaries (Dumais and Rousseau, 1985). Ontario sites are concentrated on the ancient strand lines of post-glacial Algonquin Lake (Ellis and Deller, 1990) or the shores of the Champlain Sea (Watson, 1990).

In both locations, great expanses of water evidently attracted these populations and the aquatic resources apparently furnished a significant part of their diet. Very few animal resources have been identified at Paleo-Indian sites, due to the poor condition of skeletal remains. In the few instances in which identification was possible, caribou is generally present. This, given the paleo-environment and certain technological evidence, has prompted a goodly number of archaeologists to postulate that caribou was particularly important in the subsistence economy of Paleo-Indian populations.

Paleo-Indian sites are usually small in surface area, with no trace of major construction or development. Under the archaeologist's trowel, these sites often resemble simple clusters of shaped stone objects, scattered over a surface area of less than 200 square metres. Several sites contain numerous clusters and cover much larger surface areas of up to approximately twenty hectares (Ellis and Deller, 1990; Benmouyal, 1987).

The smaller sites no doubt represent campsites of hunters or small family groups and the larger sites correspond to gathering areas for several groups. It appears that such gatherings took place to exploit resources concentrated at specific geographical features or ecological niches, such as the caribou trail, fish spawning grounds or seal or walrus grounds.

Early and Late Paleo-Indian populations were hunter-gatherers who broke camp and moved regularly to take advantage of peak densities of various resources. Group size varied according to the nature and quantity of the resources available at various times of year, with groups coming together and separating several times during the yearly cycle.

Their lifestyle compares on a whole with that of modern sub-arctic populations, having a basic, flexible socio-economic structure that allowed them to adapt to low environmental productivity and widely scattered food sources, while adjusting to the inconveniences caused at the time by changing climatic conditions and a constantly transforming hydrographic network.

Accumulating few provisions at each stopping point, these peoples had to cover an extremely vast territory to subsist. This lifestyle assumes extremely low demographic density, for example, about 100 to 200 individuals over an area as vast as southern Ontario (Ellis and Deller (1990). Such a low concentration of individuals, however, poses several difficulties, especially in recruiting partners or spouses and ensuring renewal of the group. We can assume that the group played an active role in an even wider cultural sphere, whose existence is evidenced in Ontario by the use of lithic raw materials from Ohio and Michigan (Ellis and Deller, 1990), while, during its yearly subsistence cycle, the group had access to local sources of materials.

The archaeological data do not enable us to uncover significant change between the episodes of the Early and Late Paleo-Indian periods in terms of settlement and subsistence patterns, except perhaps for a reduction, observed in Ontario, in the distance separating camps and sources of lithic materials. According to Ellis and Deller, this change may result in a slight decrease in the size of the subsistence territories, together with a notable increase in the number of sites at which the ad hoc discovery of objects of the Late Paleo-Indian implies slight population growth. Such adaptive changes are quite conceivable, given the generally increased productivity of the environment between 10,500 and 8,000 BP; this despite the disappearance of the vast reservoir of resources that was the Champlain Sea.

4.2 Archaic Period (9,500-3,000 BP)

The Archaic period lasted more than six millennia in the western Quebec and eastern Ontario regions. It is divided into three main episodes: the Early Archaic (9,500-8,000 BP), Middle Archaic (8,000-6,000 BP) and Late Archaic (6,000-3,000 BP) periods.

4.2.1 Early Archaic Period (9,500-8,000 BP)

This is another poorly understood period in Ottawa Valley prehistory. Very few diagnostic sites have been indexed in the eastern and southern regions of Ontario and none has been reported on the Quebec side of the valley.

We do know, however, that this period partially overlapped the Late Paleo-Indian period, since Plano bands came into contact for several centuries with groups having certain technologies and cultural features attributed to the Archaic period. Two spear points combining Planoid and Archaic features have also been collected in the Rideau

Lakes region (Watson, 1990), confirming the presence of humans in the Ottawa Valley basin at the time.

Major changes influenced the environment during the Early Archaic period. The innumerable expanses of water created by the melting glacier were resorbed and previously churning rivers dried up or became mere streams. This realignment of the hydrographic network coincided with the gradual increase in forest cover and the appearance of new species, such as pine and hardwood strains, which altered the landscape considerably. Animal species that had been plentiful in the past, such as caribou, found refuge in more northerly regions, giving way to species frequenting quite different habitats and exhibiting quite different behaviours, such as the squirrel.

The Plano bands did not likely resist these changes. They only came into contact a few times with groups from the south, who were better adapted to this new environment. Equipped with polished stone implements more suited to the new forest strains, and armed with hunting weapons and techniques for the exploitation of more diversified wildlife, the Early Archaic bands gradually supplanted the Plano bands in number and monopolized the now-vacant areas.

We know little of the lifestyle of the new arrivals, except perhaps that they exploited a wider variety of resources than did their predecessors. The use of a greater number of locally available lithic raw materials suggests that they exploited broader regions in a more comprehensive manner (Ellis, Kenyon and Spence, 1990).

4.2.2 Middle Archaic Period (8,000-6,000 BP)

This was a period of stabilization of the natural ecosystems during which time the principal landscapes featured in the Ottawa Valley for the remainder of prehistory developed.

Once again, material evidence from this period is notable in its rarity in the eastern Ontario and western Quebec regions. Low population density may, in part, explain this rarity. However, we must also keep in mind that the Middle Archaic period occurred during a time of warmer climate (than current-day) and water levels in lakes and waterways were below current levels. No doubt, a goodly number of the sites from this time period were flooded (Ellis, Kenyon and Spence, 1990).

The only known sign of the presence of Middle Archaic bands in the Ottawa Valley basin comes, again, from the Rideau Lakes area. A spear point typical of this period was uncovered at the Wyght site (Watson, 1990). Although this object was collected in a disturbed portion of the site, other lithic archaeological features discovered only a few meters further away have been dated to circa 7,500 BP.

In Ontario and across the American north-west in general, the period between 8,000 and 6,000 BP marks the emergence of classical Archaic characteristics. Diversification of shaped, polished stone implements, the appearance of new

projectile point shapes, and growing use of raw materials from secondary sources show evidence of increasingly generalized exploitation of environmental resources.

4.2.3 Late Archaic Period (6,000-3,000 BP)

This corresponds to a period of ecological equilibrium, during which Archaic bands became firmly implanted in the southern part of Quebec and Ontario. It is characterized by the arrival of two traditions: Laurentian Archaic, appearing between 6,000 and 4,000 BP and Post-Laurentian Archaic, which emerged shortly before the disappearance of the Laurentians and continued until the Woodland period.

Laurentian Archaic tradition reached its peak between 6,000 and 4,000 BP. It extended across the St. Lawrence lowlands and the foothills of the Appalachians from south-eastern Ontario to Vermont via north-eastern New York State.

The Laurentian Archaic bands are also represented in the Ottawa River Valley, to which they must have jealously guarded the entrance. At the time, the Ottawa River was the main access route for copper from Lake Superior. The Laurentians used a considerable amount of this substance to produce a multitude of objects and implements and for trade with neighbouring bands.

No doubt, the Laurentian Archaic bands also controlled the "copper route" for many generations. Approximately 5,000 BP, however, they became victims of fate, as a major portion of the Ottawa River tributary supply turned toward lakes Erie and Ontario and the hydrographic link to Lake Superior was broken. During the centuries that followed, Ottawa River traffic probably became increasing uncomfortable, slowing weakening the Laurentian stronghold on the copper trade. Material traces of this tradition finally decreased, ending completely circa 4,000 BP.

The settlement patterns of Laurentian Archaic bands are better known. They subsisted essentially on hunting and fishing, filled out by the trapping of a variety of animals. They also certainly gathered plants, but less intensively than in more southerly regions (Ellis, Kenyon and Spence, 1990; Cossette, 1987; Ritchie, 1980).

On the whole, we can identify their settlement and subsistence patterns as a cyclical nomadic lifestyle marked by seasonal pauses in strategic areas to take advantage of the peak period of availability of certain resources (Ethnoscop, n.a.). During the spring and summer, the bands gathered at the most productive fishing grounds, usually near large lakes or by waterfalls or rapids in large rivers. During the winter, the bands headed inland and relied on hunting and trapping for food supply. Since the animal species were less diversified and abundant during that season, and there is no evidence of widespread storage at the archaeological sites, we assume that the bands broke off into small units, the size of the extended family, for the major part of the year (Ellis, Kenyon and Spence, 1990).

Besides fish and several large birds, whose species are difficult to identify at the archaeological sites, the animals most often hunted by the Laurentians were deer, beaver, moose, bear, hare and racoon. They also hunted other species, such as otter, squirrel, marmot, mink and turtle, although on a less regular basis.

The relatively large number of Laurentian Archaic sites implies a significant increase in population over earlier periods. A decrease in the extent of subsistence territories and greater stability of settlement patterns are also implied through the increased use of local raw materials.

As another indication that the annual cycle of activities or of exploitation of the land was firmly established, at certain larger sites we find collective burial sites containing the complete remains of the deceased at, or in the immediate vicinity of, the main campsites, and incomplete or disjointed remains of people carried from camps further away (Ellis, Kenyon and Spence, 1990).

The decrease in mobility and reduction in the size of the subsistence territory resulting from a cyclical nomadic lifestyle supposes the strengthening of relationships or economic ties with neighbours to guarantee access to or supply of rare resources that were not locally available. Among the Laurentian Archaic bands, native copper was certainly one of the most highly-valued. With their strategic position, the inhabitants of the Ottawa Valley were doubtless called to play a major role in controlling the *copper route* and trade in copper implements and objects for which the Laurentian were famous.

The Laurentian Archaic tradition is also well-represented in eastern Ontario and western Quebec. In the St. Lawrence Valley, sites at Côteaux-du-Lac (Marois, 1987) and Pointe-du-Buisson (Clermont and Chapdelaine, 1982; Plourde, 1987) are located at the mouth of the Ottawa River, on major fishing grounds that no doubt also served as summer gathering grounds. Numerous diagnostic articles of the Laurentians have also been reported in the Rideau Lakes collections (Watson, 1990).

In the Ottawa Valley itself, the presence of Laurentians has been confirmed in Oka (Chapdelaine, 1990), in Papineauville (Laforte, 1987), at Leamy Lake (Laliberté, 1995) and, in especially eloquent fashion, at the Morisson Island and Aux Allumettes Island sites (Kennedy, 1970). Objects typical of the Laurentian Archaic period have also been noted at the Dumoine River (Laliberté, 1993), in the upper Ottawa Valley, in Abitibi-Temiscamingue (Côté, 1993) and in Haute-Mauricie (Ribes and Klimov, 1974).

Imposing collections of polished stone and copper implements, as well as burial grounds and various signs of intense fishing from Morisson and Aux Allumettes islands are representative of a summer gathering ground, doubtless combined with an important trading post or copper market control point.

A parallel has often been establish with respect to the presence on Aux Allumettes Island during the 18th century of an Algonquin band, under the leadership of Tessouat

the Borgne, which controlled the Ottawa River fur trade (Ethnoscop, n.a.). Many archaeologists also support the theory that the Laurentian Archaic bands were genetically related to the Algonquin nations inhabiting Quebec and Ontario when Europeans arrived (Chapdelaine, 1993).

The *Post-Laurentian Archaic tradition* appears circa 4,000 BP, a time at which traces of the Laurentian Archaic faded dramatically. The latter's disappearance from the Laurentian plain was so rapid that some archaeologists postulate a migration of populations from the south (Ethnoscop, n.a.). Others see in this an adaptation by the Archaic populations to the deciduous forest that provided new sources of food and provided substantial caloric benefit to the people (Snow, 1980).

These bands, which we associate through its new type of projectile points with the Vergenne phase of Post-Laurentian tradition, conquered or took over nearly all of the territory previously inhabited by the Laurentians. We find evidence of this from the New York State lowlands to the Niagara Peninsula of southern Ontario, and in the St. Lawrence lowlands west of Trois-Rivières (Ethnoscop, n.a.). The bands are present at several of the larger Laurentian sites, especially Pointe-du-Buisson (Clermont and Chapdelaine, 1982; Plourde 1987), Oka (Chapdelaine, 1990) and in the Rideau Lakes region (Watson, 1990). No sites of the Vergenne phase have yet been officially identified in the NCR or middle Ottawa River Valley.

Circa 3,700 BP, new technological influences made their mark, particularly in the form of new varieties of projectile points. These mark the beginning of the Susquehanna phase of the Post-Laurentian traditions. This time, the changes originated in the American south-west and do not appear to involve population movement, since the new point varieties were simply integrated into existing hunting and gathering technologies (Ellis, Kenyon and Spence, 1990).

Diagnostic objects from the Susquehanna phase have been collected at all of the sites mentioned above for the Vergenne phase. Note that there were an especially high number of Susquehanna points among the Rideau Lakes collections (Watson, 1990).

We know less about the economic policies and behaviours of Post-Laurentian populations than about those of their predecessors. However, we do know that they continued the generalized and opportunistic exploitation of the resources of their environment, perhaps placing more emphasis on the gathering of plant and nuts (Ellis, Kenyon and Spence, 1990). Compared to the camps of the Laurentian bands, their sites were primarily grouped by the shores of larger rivers, near sources of water, which did not prevent them from settling on the shores of the lakes.

Deer, bear, racoon, squirrel and turtle are the main animal resources identified at Post-Laurentian sites. Fish is poorly represented, but this is likely due to poor conservation of skeletal remains. The tendency to settle near the rivers rather suggests that fish was an important food source. Gathering of plants, berries, nuts and acorns rounded out their diet.

4.3 Woodland Period (3000-400 BP)

The Woodland period covers the end of Prehistory between 3,000 and 400 BP. It closes with the Europeans' permanent settlement in New France at the beginning of the 17th century. For the NCR region, the year 1613, the date of Champlain's first voyage into the Ottawa Valley, is an important chronological marker.

A trend towards the regionalization of cultures throughout northeastern America characterized this period. Geographically scattered groups, evolving in diverse environments and adaptive systems, were influenced by cultural patterns having a homogenizing effect across vast territories (Clermont, 1990, Ethnoscop, n.a.).

On the basis of certain aspects of technology and human socio-economic organization that characterized these important cultural patterns, the Woodland Period can be divided into three major sub-periods: Early Woodland (3000-2400 BP), Middle Woodland (2400-1000 BP) and Late Woodland (1100-400 BP).

4.3.1 Early Woodland Period (3,000-2,400 BP)

This period is fairly well documented in terms of archaeological sites in northeastern America. It corresponds to a period of concentrated occupation of southern Ontario and of the St. Lawrence lowlands by groups identified with the Meadowood culture.

On the NCR outskirts, material evidence of Meadowood occupation has been found at Pointe-du-Buisson, in Oka, in the Rideau Lakes region and in Deep River (Clermont and Chapdelaine, 1982; Chapdelaine, 1990; Watson, 1990 and Mitchell and al., 1966). Less evident traces, no doubt related to the simple distribution of Meadowood goods, have been detected around the Thirty-One Mile Lake, in upper Laurentian (Ethnoscop, n.a.), in Haute-Mauricie (Ribes and Klimov, 1974) and up to the Abitibi-Temiscamingue (Côté, 1993) region.

Meadowood culture was a fairly sudden and contagious phenomenon that spread throughout the Post-Laurentian Archaic groups (Clermont 1990). It stands out from earlier and neighbouring cultures because of its burial ritual, common usage of a single lithic material (Onondaga Chert), unusual method of producing shaped stone tools, distinctive polished rock and copper implements, and the advent of ceramics. This last event is held by archaeologists to be the major chronological marker of the Late Woodland Period.

The speed and ease with which Meadowood attributes spread over a very large territory are quite incredible. For example, the Meadowood peoples' preferential use of the Onondaga Chert indicates an enormous challenge in terms of supply. This material originates in New York State and southern Ontario, regions where Meadowood influence especially flourished (Ritchie, 1980; Spence, Pihl and Murphy, 1990). Even so, it is found throughout the regions frequented by Meadowood peoples, sometimes on sites located several hundred kilometres from the main source.

In the case of Onondaga Chert, note that, at the same time, the Meadowood culture used a very unique method of lithic tool production that allowed Onondaga Chert users to visit territories far from the supply source without fear of a shortage. Preforms or biface caches were made and kept; and could be transformed at will into several kinds of implements, such as projectile points, knives, scrapers, awls, etc. This extensive and rapid distribution of Meadowood attributes suggests huge acceptance from local groups, and at the same time, an extremely well organized distribution and trade network.

Clermont (1990) places the emergence of the transfer and trading network a few centuries earlier, having identified a responsiveness towards technological and cultural advances among the Post-Laurentian Archaic populations that is similar to that of the Early Woodland populations. Regarding this network, at the Early Woodland sites of Ontario, Spence and al. (1990) noted a decline in popularity of certain exotic objects, notably of copper, from far-off regions. They attribute this decline to a redefinition of the trade network near the end of the Archaic period, in response to increasing demand among the populations from more southern regions, notably southern Ohio. There is also every reason to believe that this redefinition of trade fits into the global process of readjustment of economic forces, resulting from the declining dominance of the Ottawa Valley inhabitants over the network during the preceding centuries.

Since the distribution range of cultural attributes of both Post-Laurentian and Meadowood peoples is similar to and coincides with the Iroquois territory at time of contact, many archaeologists believe that the Iroquois cultural tradition originates in both these cultures. (Clermont, 1990; Ethnoscop, n.a.)

Unlike their descendants, the people from the Meadowood cultural sphere did not understand agriculture. They lived off hunting and fishing, supplemented by gathering. The first two provision methods were more important however, and, although there is little archaeological documentation, it seems that hunting was considerably less diversified than among their Post-Laurentian predecessors. On the Ontario side, the majority of sites without burial grounds correspond to small autumn campsites for deer hunting and nut gathering (Spence, Pihl and Murphy, 1990). Larger sites, with which burial places are often associated, are generally identified as fishing camps during the spring or early summer.

In short, Meadowood populations engaged in a nomadic lifestyle that was becoming more and more curtailed, relying more on the rigorous search for geographically concentrated resources to feed the community. No doubt, they also stored larger quantities of food, especially fish, deer meat and nuts. Within a more limited territory, they could in this way satisfy the needs of the group throughout the winter as group size increased steadily – though it remained fairly small in comparison to later centuries.

4.3.2 Middle Woodland (2,400-1,100 BP)

This Prehistory period is the best documented with archaeological sites and artefacts in the regions of western Quebec and eastern Ontario. It is usually divided into two sub-periods which are a continuation of the Early Woodland period, and identify evolutionary phases of the cultural tradition that later gave rise to the major Iroquois tribes.

The *Middlesex Culture (2,400-1,800 BP)* appeared as a new cultural pattern with homogenizing characteristics that spread in rapidly throughout emerging Iroquois society. In contrast to the Meadowood period, the Middlesex pattern seems to appear only in funeral practices, campsites being apparently absent.

The rituals and offerings associated with these funeral sites reveal the influence of the Adena culture which had spread into southern Ohio, Indiana and neighbouring regions between 2,500 and 2,200 BP (Spence, Pihl and Murphy, 1990).

Burial mounds, simpler burial places and offerings or objects typical of the Middlesex period have been identified as far away as Sillery, near Quebec City, Tadoussac and Mingan, on the St Lawrence North Shore, as well as in New Brunswick and Vermont (Clermont, 1990). There are also several known sites in New York State (Ritchie, 1980) and in Ontario, for example, the See Mound and Long Sault Island sites in the St. Lawrence River Valley (Spence, Pihl and Murphy, 1990).

Closer to home, objects typical of the Middlesex have been identified in the Rideau Lakes collection (Watson, 1990) and a funeral site has been excavated on Morisson Island, in the upper Ottawa Valley (Clermont, 1990). This site has been dated to 2,040 BP.

Several archaeologists consider the Middlesex phenomenon to be a particularly visible, but not exclusive, component of a developing cultural tradition which left its mark throughout the Middle Woodland period (Clermont, 1990; Spence, Pihl and Murphy, 1990). Besides a new, and more elaborate, funeral complex, Clermont (1990) selected as distinctive features of this emerging tradition: abandonment of the Onondaga Chert as its main, formerly exclusive, lithic material; use of pottery decorated with wavy impressions, finer than the pottery in use among the Meadowood; and replacement of the tool kit so unique to the Meadowood by new tool models fulfilling the same functions.

Most of these attributes are found among the Point Peninsulas inhabiting southern and eastern Ontario, southern Quebec, western and northern New York State, and northwestern Vermont between 2,200 and 1,100 BP.

Based on the stylistic and technological features of the ceramic industry, we can distinguish a fairly clear boundary in Ontario, near Lake Nipissing and the French and Mattawa rivers, between the Point Peninsula population settled in the south and east and the Laurel population living further north at the time. Towards the west, the boundary with the Saugeen and Couture populations, close cousins of the Point

Peninsulas, is less evident but seems to be positioned somewhere between the Lake Erie and Lake Ontario watershed areas.

Towards the south, pottery typical of the Point Peninsulas have been found in New York State but are not as common and do not show as great a homogeneity as in the Laurentian Plain area of Quebec and Ontario (Spence, Pihl and Murphy, 1990). In this last region, the distribution margin of the Point Peninsulas is also difficult to establish, since few Middle Woodland sites have been registered and, more importantly, excavated east of Montreal. In the upper St. Lawrence Valley, the Ault Park site, near Long Sault Rapids, and the Pointe-du-Buisson and Oka sites (Clermont and Chapdelaine, 1982; Chapdelaine, 1990) have however yielded vases decorated with wavy impressions which fits in well with the Point Peninsula collection.

In the Ottawa River Valley and basin, Point-Peninsula pottery is widely represented. In addition to the Oka site, located at the river mouth in Deux Montagnes Lake, it can be found in the Plaisance sector and at the mouths of Petite Nation (Laforte, 1987) and Gatineau rivers (Laliberté, 1994, 1996), at the Rideau River source (Watson, 1982), in the Constance Bay area a few kilometres upstream from Ottawa (Watson, 1972), on the lower Coulonge River (Pintal, 1993, 1996), and in the Bonnechere and Petawawa river basins (Emerson, 1955; Mitchell and al., 1966), which flow into the upper Ottawa River.

Many of these sites have not been excavated, but, with data collected at some of the previously excavated Point Peninsula sites, notably in Ontario, we have a fairly accurate portrait of the settlement-subsistence patterns of these populations, who were evidently in the throes of a fairly significant demographic expansion (Spence, Pihl and Murphy, 1990).

During the spring, the Point Peninsulas assembled in macro-bands, bringing together several hundred people on the shores of large lakes or at the mouths of major rivers. They sometimes idled in these areas until autumn.

In terms of subsistence, the accent was on fishing and gathering shellfish in the spring, and on harvesting wild rice and nuts, as well as deer hunting, in the fall. In summer, they were no doubt occupied with the same activities but to a lesser extent. As summer advanced, they spent more and more time gathering and storing surplus food in anticipation of the difficult winter months.

By the end of autumn, the macro-band camp had been completely deserted. The peoples broke off into micro-bands that headed inland for the winter, eating food reserves stored up during the fall and an occasional deer or small game.

Funeral mounds constructed near the major encampments indicate that the populations made considerable use of the same area for several generations. The presence of in the mounds of partial and disjointed skeletons, often cremated, indicates that the remains of people who died during the winter were temporarily buried, and sometimes preserved for several years, before being taken back to the spring meeting grounds, another sign that the land-use cycle was firmly established.

The presence of marine shells, copper and silver, and other exotic objects in the burial mounds also testifies to the fact that the Point Peninsulas continued to trade with their neighbours and with the inhabitants of more distant regions, from both north and south.

4.3.3 Late Woodland Period (1,100–400 BP)

This is a period of socio-economic change, population growth and significant political unrest among the Iroquois populations in the southern regions of Quebec and Ontario.

Three evolutionary phases of the Iroquois tradition can be distinguished: the Early Late Woodland Period (1,100-700 BP), the Middle Late Woodland period (700–600 BP) and the Late Late Woodland period (600–400 BP).

During the *Early Late Woodland period,* two groups, the Glen Meyers and Pickering shared the southern Ontario regions, (Wright, 1973). They were distinct in several aspects from the Middle Woodland populations who had occupied the same regions, but do nevertheless shared several features supporting their connection to an emerging Iroquois tradition: the Pre-Iroquois.

Archaeologists are at variance about the Glen Meyer and Pickering territorial boundaries but agree that bands of the Glen Meyer branch moved about in southwestern Ontario, and the Pickering branch in the southeast. Pickering territory did not extend beyond Lake Nipissing to the north.

Until quite recently, little was known about this prehistoric episode, from 1,100 to 700 BP, in Quebec, especially in the western areas of the province. However, research conducted during the past few years at the banks of the Coulonge River (Pintal, 1993, 1996), especially in the Gatineau River delta (Laliberté, 1995, 1996; Laliberté and al., 1997), has provided significant details. Based on the pottery found and traces of domestic settlements, digs at two of the Leamy Lake archaeological complex sites have confirmed that the central Ottawa Valley was included in the territory exploited by the Pre-Iroquois of Ontario.

Apart from a few general variations in the material culture, there are few distinguishing features of the Ontario Pre-Iroquois, therefore, for the present, it is not crucial to identify the exact traditional branch with which the Ottawa Valley inhabitants were linked. However, because the Ottawa Valley is also contiguous with the geographical area attributed to Pickering populations, we will occasionally refer to certain particularities observed for these groups in terms of settlement and subsistence patterns as probable behaviours of the NCR inhabitants.

According to Williamson (1990), we observe a tendency among the Pre-Iroquois to increase the size of their dwellings over time. These structures, small and elliptical at the beginning of the Early Late Woodland period, more closely resembled the Iroquois longhouses in form and dimension towards the end of the period.

The first villages appeared during this period. Usually built on sandy soil, the villages were at first of a limited size, less than a hectare. Several houses were grouped together, loosely distributed and often overlapping the remains of previous habitations. Some archaeologists see this apparent disorganization as a sign of an informal government, without clans and having a scarcely developed matriarchal system, which goes hand in hand with low population density. The frequent presence of palisades around the villages also indicates conflicting relationships with neighbouring communities.

Among the Pickering in particular, the number of houses tended to increase in the villages over time. Pits and other garbage disposal structures began to appear. Defensive earthworks or palisades were erected around the villages only towards the end of the period.

The Pre-Iroquois did not farm, although they were aware of all the cultigens (corn, squash, bean, sunflower and tobacco), later used by the Iroquois nations of Quebec and Ontario. They remained largely dependent upon environmentally available resources for as long as the population groups in the villages remained small and environmental productivity sufficient to ensure the survival of the community. A mixed economy combining horticulture, fishing, hunting and gathering provided all necessary security until certain socio-political factors significantly altered the situation towards the end of the 12th century (700 BP).

As for settlement pattern, the Pre-Iroquois were semi-nomadic populations who, during the course of the year, occupied three different types of encampment. In spring, they lived in small camps on the shores of the lakes, rivers and waterways where they fished. In summer, they sowed and cultivated fields on the village outskirts. They also conducted hunting, fishing and gathering expeditions within a radius of a few kilometres of the village. In fall, they turned toward the spring fishing camps or more productive sites; finally, in winter, they returned to the village, where they lived off resources stored up during the fall and game hunted near the village.

Among the Glen Meyer living in southwestern Ontario, we have been able to confirm that these secondary spring and fall camps resembled veritable hamlets, up to 0.5 hectare in size, i.e. nearly a third of the village area. The major resources exploited from these secondary camps were fish in spring and deer in autumn. Racoon, squirrel and several species of river-dwelling mammals, turtle and numerous varieties of plants and nuts were also exploited.

It is estimated that Pre-Iroquois communities could include as many as 200 to 400 individuals. Bands lived in distinct villages, without formal leadership, except perhaps for a chief who's bargaining talents could be put to good use in negotiations with neighbouring villages. It is believed that the first village communities were organized in a flexible socio-political system that left individuals and family groups free to conduct subsistence activities separately, and to decide upon the length of their stay in secondary camps, with some groups even staying throughout the winter.

According to Wright (1973), the two branches of the Pre-Iroquois tradition merged circa 700 BP, following the Pickering conquest of the Glen Meyer. During the next century, two new groups followed – the Uren (700–650 BP) and Middleport (650–600 BP).

Not all archaeologists accept Wright's conquest theory and cultural sub-divisions. Some deny the conquest as the reason for the merger, while others defend the coexistence of the Uren and Middleport populations (Dodd and al., 1990). We will not enter into the debate and will retain only the various proposed interpretations that enjoy greatest unanimity, i.e. the existence of a transitional phase in the evolution of the Iroquois tradition: the Uren-Middleport phase, which coincides with the *Middle Late Woodland period.*

The vast majority of the Uren-Middleport sites are grouped together in the triangle formed by the Great Lakes Huron, Erie and Ontario. No site has yet been identified in the regions of eastern Ontario and southwestern Quebec where cultural divisions remain unclear for several centuries prior to the arrival of the St. Lawrence Iroquois.

Ceramic artefacts typical of the Uren-Middleport phase have been very recently recovered however in a Leamy Lake archaeology complex site (Laliberté, 1996), along with signs of habitation. Although these few elements do not allow definite conclusions to be drawn, for lack of other information, we should consider the likelihood that bands of this tradition were present in the NCR.

Besides new ceramic styles and a few other changes in material culture, the Uren-Middleport cultural phase is especially distinguished by the appearance of some of the most classical Iroquois cultural features.

Among the Uren-Middleport, villages were still preferentially erected on sandy soil but they were considerably larger, extending up to 1.7 hectare on some sites (Dodd and al., 1990). The houses were arranged in a more organized fashion and villages were occupied year round.

The first classic longhouses appeared about 700 years ago. The population expanded rapidly, with houses on average twice as long as the Pre-Iroquois dwellings. Besides the central alignment of firepits, from now on storage pits were henceforth found throughout the house, with storage space for provisions at each end of the dwelling.

Palisades surrounded some, but not all, of the villages. Some were located in natural sites obviously chosen to provide defence, such as hilltops and areas surrounded by marshes; others were located entirely on the plain. Some larger villages seem to have been constructed for defensive purposes, grouping together several smaller communities.

Apart from the villages, we know less about the Uren-Middleport settlements. We do know that they occupied hamlets scattered on village outskirts and that in places they set up outposts, possibly to watch the fields during the harvest season, but few of these sites have been excavated.

It is thought that village life became necessary because of greater dependence on the cultivation of maize. Squash, beans, sunflower and tobacco were also grown. It is thought that villages were occupied throughout the year, especially during the winter months, with many families going to the hamlets in spring and fall for fishing, hunting and gathering. These signs of permanent occupation of a same site ended the practice of building homes on the sites of former homes, as found on Pre-Iroquois sites.

Fish and deer were the principal sources of animal food. Other mammal species most often seen in the sites were: bear, beaver, muskrat, squirrel and dog. The inhabitants also doubtless hunted many other mammals and bird species, as well as some land and water-based reptiles and amphibians found near the village.

During the *Late Late Woodland period* (600–400 BP), Iroquois populations surrounded the Ottawa Valley to the south. Circa 600 BP, the Uren-Middleport population of the Great Lakes region spread, giving rise to a multitude of communities which can be sub-divided into two major cultural groups: Huron-Petun in the north and Middle Erian in the south. During this time a third group, the St. Lawrence Iroquois spread throughout the Laurentian plain.

In the Ottawa Valley, information about this period is scarce and rather confused, especially because of the small number of sites investigated. No traces of the St. Lawrence Iroquois have been detected at the Leamy Lake sites where the more intensive searches have been conducted to date. These sites have produced Huron artefacts, but the archaeological context suggests that some of these objects were acquired in trade with itinerant groups passing through the region or intermittently visiting the central Ottawa Valley. Since the proliferation of northern lithic materials is increasingly greater in the strata of the Late Late Woodland period, we have every reason to conclude that the nomadic groups, who had left the region several centuries earlier to take refuge in the Laurentians and the Canadian Shield highlands, returned to the Ottawa Valley during this period.

These populations – sometimes referred to by the extremely controversial name *Shield Archaic*, or, probably more precisely, *Proto-Algonquin* – in all probability carried on the lifestyle of their Laurentian ancestors, spending the winter hunting in the Laurentians or in more distant northern regions and gathering in small bands during the summer near inland lakes or some Ottawa River locations well stocked with fish. They no doubt took advantage of the summer season to mingle with Iroquois populations settled further south or west with whom they could trade, and even negotiate alliances against a common enemy.

During that time, with Iroquois populations experiencing a lightning population explosion and competition for fast declining animal resources at full tilt, the Proto-Algonquian likely had the upper hand in the regional economic network. The former copper route had become a route for hides and fur trading.

The Iroquois nations of the Huron-Petun, Middle Erian and St. Lawrence Iroquois branches had quite similar lifestyles. They lived in communities of hundreds to thousands of individuals gathered together in villages. These villages were preferably erected on sandy soil near permanent waterways and in locations easily defended from enemy attack, unless, like the small St. Lawrence Iroquois village on the Mandeville site at Quebec's Richelieu River, they were set back from disputed borders or political zones (Ramsden, 1990; Jamieson, 1990; Lennox and Fitzgerald, 1990; Chapdelaine, 1989).

Palisades surrounded most of the villages. The villages consisted of several longhouses which, notably among the Huron, were grouped into two large groups, each having available a larger house for meetings or special ceremonies. Some villages, particularly the Huron villages, were expanded periodically to accommodate demographic growth or welcome refugees from other villages.

Fields of corn and other cultigens (beans, squash, sunflower and tobacco) were located on the village outskirts, and small posts were set up at various locations to provide shelter for the people working the fields. The food supply was supplemented throughout the year with fishing, hunting and gathering, the first two activities occurring especially in spring and fall. The groups assigned to these tasks lived in hamlets scattered throughout the territory, from which they jealously guarded its resources.

From historical sources, we know that the Huron, like most other Iroquois tribes, most likely traded with Algonquin populations living in the outer regions. However, there is little archaeological documentation on this aspect of Iroquois society prior to the arrival of the first European explorers and missionaries. We assume that trade took place quite early between the nomadic populations of the Laurentian line and the populations of the rising Pre-Iroquois cultural sphere. This interaction no doubt increased and gradually became more structured throughout the Woodland period in response to the growing demand for meat, and perhaps more for hide, resulting from the Iroquois population explosion.

Flowing between these two worlds, the Ottawa River probably played a major role in the inter-cultural contact and trade for part of the Late Woodland period (Heidenreich, 1990). In any case, it certainly played a part when Champlain first visited the region in 1613.

4.4 Time of Contact (400-200 BP)

During the time of Jacques Cartier, the two main Iroquois bands in the St. Lawrence River Valley, the Hochelaga in the Montreal region and the Stadacona of the Lac Saint-Pierre area, lived at peace with each other. However, each made war on other populations. Of note, the Hochelaga had skirmishes with the Agojuda (bad guys) arriving from the west via the Ottawa River, and probably with the Huron-Petun living in south central Ontario (Heidenreich, 1990). Wars between Iroquois families were vicious and finally led to the disappearance of the St. Lawrence Iroquois during the second half of the 16th century.

When Champlain arrived in the Ottawa Valley during the early 17th century, he hoped to take advantage of the vast trading network established by the Huron and their Algonquin allies to introduce European goods into the Great Lakes region. His efforts were highly successful and, with the support of the French, the Huron and Algonquin controlled trade from the St. Lawrence River Valley to the Great Lakes for several years.

There was no delay in the reaction of other Iroquois bands settled in southeastern Ontario and New York State. Quarrels escalated and wars began anew. Decimated by the new diseases brought by the Europeans, the Huron were defeated and their Algonquin allies were forced to leave the Ottawa Valley by the mid-17th century.

Historical documents confirm six Algonquin bands in the Ottawa River basin during the early 17th century (Viau, 1993). The Weskarini lived inland, in the Rouge, Petite-Nation and Du-Lièvre river sector. In the same vicinity, but on the Ontario side of the Ottawa River, lived a band whose Algonquin name is unknown, but whom the Hurons referred to as Onontchataronons. The French referred to them as Iroquet, after their chief. The Huron considered these people to be part of the Petite-Nation band.

Also on the Ontario side of the Ottawa River, another band, the Matouweskarini, inhabited the Madawaska River Valley and a quarter of the Muskrat Lake area. The Kichesipirini occupied Aux-Allumettes and Morisson Islands on the Ottawa River, from which, under the direction of Chief Tessouat the Borgne, they exercized strict control over the fur trade, collecting tolls on river traffic.

Further upstream, inland on the Quebec side this time, lived the Koutakoutouemi. It appears that they occupied the land between the Coulonge and Dumoine rivers.

There is no evidence of any band in the Ottawa Valley in the Rideau and Gatineau river sector. Champlain explained the reason for this in a report of his voyage, indicating that the Iroquois from the south used the Rideau River to carry out raids into Algonquin territory. He also noted that Algonquin bands used the Gatineau River, which empties into the Ottawa River only a few hundred metres downstream from Rideau Falls, to reach Trois-Rivières via the Saint Maurice River. This way, the Algonquin could trade with the French, avoiding the St. Lawrence area, which was patrolled by Iroquois marauders.

Like the Dumoine River further upstream, the Gatineau River was a particularly important communications route, permitting the Algonquin to reach friendly populations in the Abitibi-Temiscamingue, James Bay, Lake Mistassini, Lac Saint Jean and Saguenay regions. In Ontario, the Mattawa River was the last segment of the route linking the Ottawa River to Huronia via Lake Nipissing.

Besides trade, which took place only in summer, the Algonquin lived a nomadic lifestyle, travelling throughout the inland forests and lakes during most of the year in quest of varied animal resources. Some bands lived nearer the Hurons, possibly engaging in farming during the summer months. Once autumn arrived, however, they followed in the footsteps of similar peoples and broke into small bands to search for the resources scattered throughout band territory.

Except for the Kichesipirini of Aux-Allumettes Island, and perhaps the Onontchataronon of the South Nation River basin, who were apparently better able to resist enemy attacks, the Algonquin bands gathered near inland fishing lakes, avoiding the insecure shores of the Ottawa River. Only a few small bands engaged in trade and able to outwit their adversaries could surely have ventured near the river.

However, Algonquin control over one of the most strategic, fur-rich trading routes could only have aroused the cupidity of their enemies. Themselves hard hit by the diseases to which they had no natural immunity, the Algonquin in the end could no longer resist repeated assaults against themselves and their Huron allies by Iroquois nations from the south. The Algonquin were chased from the Ottawa River Valley during the 1640s, survivors finding refuge with neighbouring nations to the north, west and east or with the French.

With the return of peace among the Iroquois, in 1701 the French and their allies permitted the gradual reintroduction of trading on the Ottawa River. This time, however, the Europeans held the reins. French and English trading posts were opened at several spots along the Ottawa River. A few Algonquin families, some of whom had taken refuge at the Oka Mission at Deux Montagnes Lake, began anew to use the Ottawa River on a seasonal basis.

At the time, the prestige and influence of Iroquois nations settled north of Lake Ontario diminished considerably in southeastern Ontario (Institute for Heritage Education, 1997). Algonquin bands arriving from the Huron and Superior lake sectors, especially the Mississauga and Saulteaux, moved further south to occupy a major part of Iroquois land on the northern perimeter of Lake Ontario. However, Algonquin expansion does not appear to have been very significant in southeastern Ontario, especially in the Rideau River basin, given that these regions are considered part of Iroquois territory.

Of the Iroquois themselves, only a few families, including some from the Oka Mission, came to hunt and fish in the NCR until the movement toward colonization,

begun in 1800 by Philemon Wright at the mouth of the Rideau and Gatineau rivers, turned the page on a new chapter in the history of the Ottawa River Valley.

Should we consider this a sign of an abundance of Time of Contact sites in the NCR? Probably not, however, it is true that traces of the presence of the First Nations in the NCR during Time of Contact were observed as early as the 19th century. For example, the *Ottawa Daily Free Press* of June 21, 1888, reported the discovery on Kettle Island of what appeared to be an Indian burial mound (human skull and skeletal remains, copper cooking pot, flint, terra cotta pipe and arrowheads). The comments of Island inhabitants reported in the newspaper implied that numerous other burial mounds had also been discovered at an earlier date.

Note that Van Courtland (1852-53), more than 40 years earlier, had reported the discovery of an Indian cemetery, this time from the prehistorical period, by workers building a bridge to Ottawa (known at the time as Bytown). Sowther (1901, 1917), who had scoured the banks of the Ottawa River on both the Ontario and Quebec sides for many years in search of signs of the past, had indexed numerous spots at which artefacts were collected or were visible on the surface. He reported having collected, in various areas, objects such as flints, muskets, musket balls, metal knives, and pipes, intermingled with arrowheads and stone implements, inescapable evidence of the Time of Contact.

Many of the sites indexed by Sowther or stumbled upon since the beginning of the century have no doubt been destroyed by erosion or lost to urbanization. Some have probably survived, however, filtered by the interwoven strands of roads, sewers, buildings, houses, parking lots, etc. that sub-divide the urban space. Whether in a park, a small, undisturbed corner of land at the end of a street, a residential back yard, or other spot, a site or part of a site may subsist in various locations. The Leamy Lake archaeological complex is an excellent example. European-style artefacts, dating to the early 16th century and intermingled with Huron pottery, have been uncovered at two sites in Leamy Lake Park (Laliberté, 1995; Laliberté and al., 1997). The artefacts are *in situ*, in ground holding many layers of occupation extending over 2,000 years. Unfortunately, the park area in which these sites have been discovered has been subjected, since time immemorial, to frequent Ottawa River flooding. In this century, it has also been used for a variety of industrial activities and recreational pursuits.