

The Draper Site: Historical Accounts of Vegetation in Pickering and Markham Townships With Special Reference to the Significance of a Large, Even-aged Stand Adjacent to the Site

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Introduction

The area in which the Draper site is located has changed considerably in the five hundred years that have passed since it was inhabited by late prehistoric Iroquoians. Most of this change has, understandably, taken place since the early 1800's when lumber companies and settlers became established. If we are to attempt to reconstruct the environment in which these people existed, data from archaeological remains and present biological surveys will have to be supplemented with information from the diaries of early missionaries, surveyors and settlers who recorded something of its original state.

The most detailed descriptions of vegetation patterns for this area are to be found in the records of early surveyors who were required to make notes on the soil, timber and water resources in each lot. Where complete records have been preserved, as in Markham Township, it has been possible to reconstruct the maple-beech climax forest almost exactly as it was before European settlers left their imprint. In Pickering, detailed records exist only for the southeastern quarter of the township.¹ The Draper site is in the northwestern quarter. The only information on vegetation in this part of the township which appears to have survived is found in a document concerning white pine masting reserved for the Royal Navy which indicates the past existence of a vast, even-aged pine stand situated

immediately to the west of the Draper site. Smaller stands were located in other areas of the township. The processes of succession can result in distinctive vegetation patterns in areas where natural or human disturbances have taken place. The late prehistoric Iroquoian agriculturalists would most certainly have disturbed their environment in clearing and burning enough land to produce maize, the most important item in their diet. As has previously been indicated, the late eighteenth century report on pine masting has indeed indicated the occurrence of a striking vegetation pattern in the immediate vicinity of the site. The possibility that the large, even-aged pine stand adjacent to the Draper site represents a stage in the recolonization of the abandoned maize fields of the last prehistoric Iroquoians will be examined.

Physiography and Climate

The habitation area of the Draper site is located on a tract of relatively infertile sandy loam overlying calcareous parent material (clay till) at the top of a stream valley through which runs West Duffin Creek. These soils are part of the Brighton series and are developed from coarse textured outwash sands and gravels which are low in organic matter (Olding, Wicklund and Richards, 1950: 36–38). To the east and northeast, on the opposite side of the creek, are the very fertile clay loam soils of the Peel series which are developed from lacustrine deposits overlying a clay till. To the west and northwest are the fertile, loamy, imperfectly drained limestone and sandstone derived tills

¹Additional research might uncover more information on pre-settlement vegetation in other areas of Pickering Township.

of the Milliken series (Olding, Wicklund and Richards, 1950: 34). All of the above series are in the Grey-Brown Podzolic Great Soil Group, and all have a neutral surface reaction. This is important since "podzols tend to be slightly too acidic especially in the upper horizons" for maize growing (Heidenreich, 1970: 268).

Of the three soil series, Milliken loam and Peel clay loam are at present rated as good for the growing of ensilage corn. Brighton sandy loams are rated as fair. Thus, two large areas of fertile soils suitable for maize growing existed in close proximity to the Draper site. The soils of the Milliken series would have been lighter and more easily worked with respect to late prehistoric Iroquoian maize growing techniques than would the heavier clay loams of the Peel series. Brighton sandy loams, while rating as only fair cropland, would also have been light and easy to cultivate. Soils of the Brighton and Milliken series share the advantage of warming earlier in the spring than soils having a high clay content. This is important since maize "is one of the few annual crops that uses the full frost-free period [135 days in the South Slopes region] to complete its life cycle . . ." (Brown, McKay and Chapman, 1968: 29). Finally, these two soil types were more accessible to the village inhabitants who dwelt on the same side of the creek and to whom protection of field workers against Iroquois attacks was probably a matter of concern. Evidence from soil data, therefore, would seem to point to the area of Milliken loams as being most favorable in all respects for late prehistoric Iroquoian agriculture. Not only were these soils fertile, but they would also have been easy to cultivate and easily accessible to the village inhabitants who worked in the fields (see Figure 1).

The importance of a long growing season for maize has already been discussed with respect to the capacities of different soil types to warm in spring. The growing season of southern Ontario as a whole is at present favorable for the growth of corn which is one of the major field crops. In those areas where climate is moderated by proximity to the Great Lakes, the autumn growing season is extended. The climate of southern Ontario, and therefore the length of the growing season, is probably much the same today as it was at the time of occupation of the Draper site, five hundred years ago. In fact, the present climate is probably more like the climate of five hundred years ago than that of the period which intervened. Ladurie (1971: 225) noted that in other areas of the world "a multiseular phase of glacial expansion . . . was in full force from 1590 and did not end, in the Alps, until after 1850." This climatic deterioration is known as the "Little Ice Age" and may have had some influence on the climate of southern Ontario. Thus the climate as well as the soils of the area in which the Draper site is situated was favorable for the cultivation of maize.

Problems in Reconstructing Vegetation

The floral and faunal composition of the north Pickering area in which the Draper site is situated has changed considerably in the one hundred and eighty years following European settlement.² The lumber industry, which was responsible for most of the initial changes, began its operations in the early 1800's with the cutting of white pine masting for the Royal Navy. It was followed by the square timber trade and later by sawmilling which catered to the needs of settlers. After 1880 the total yearly output of pine lumber in Ontario County began to decline rapidly — an indication that the large stands were disappearing (R.D.H.P., 1956: III, 6). The destruction of the forest by the lumber industry was completed by settlers, who in clearing their land left only an occasional woodlot as a reminder of what once had been.

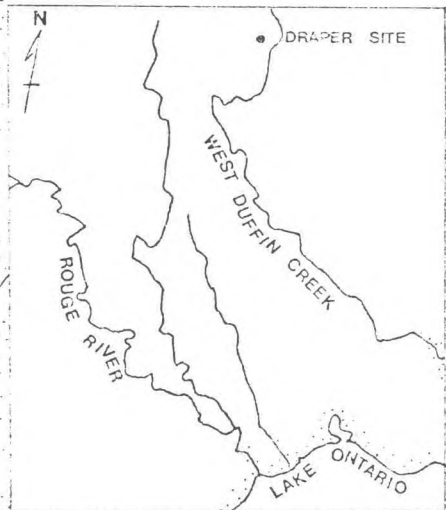
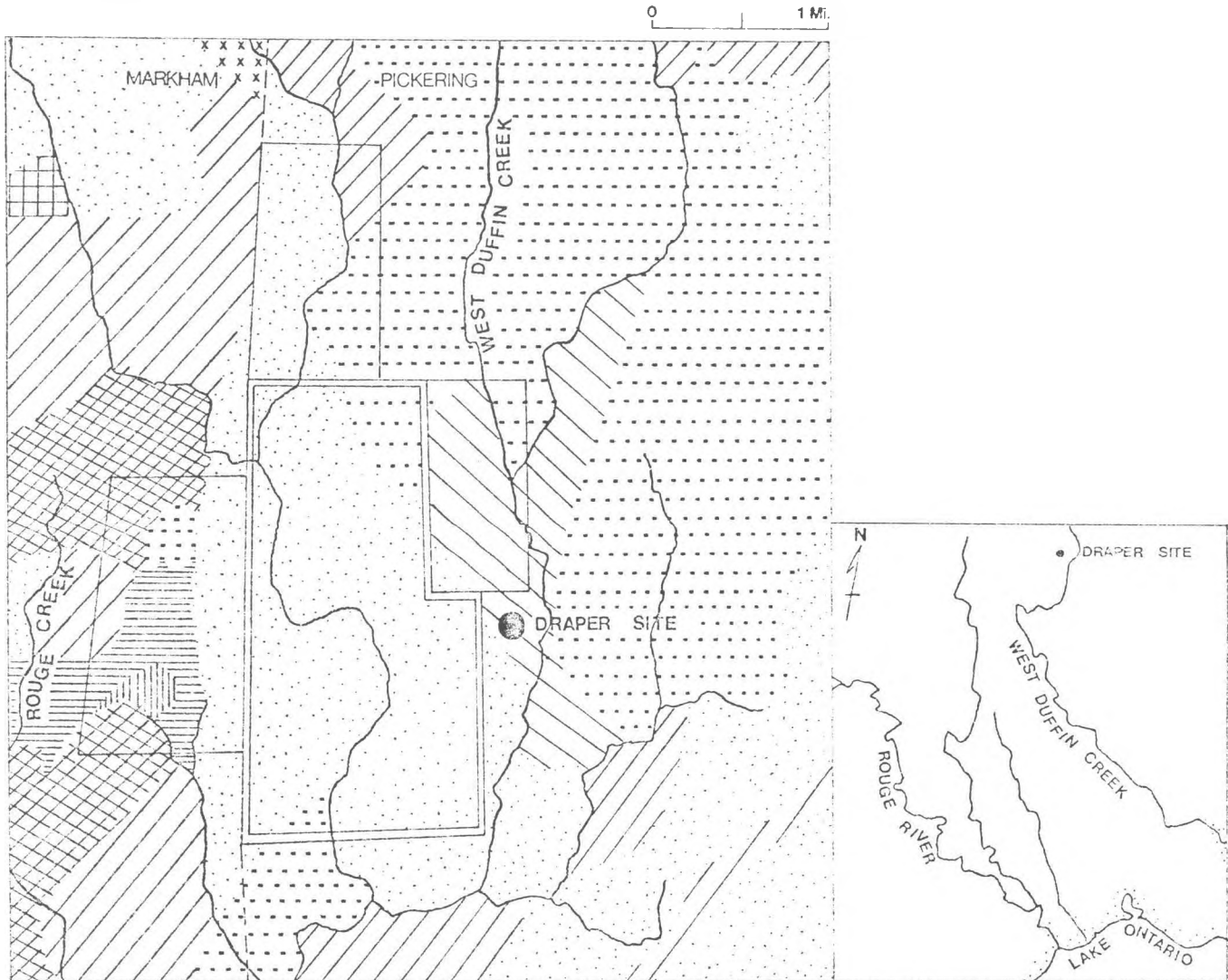
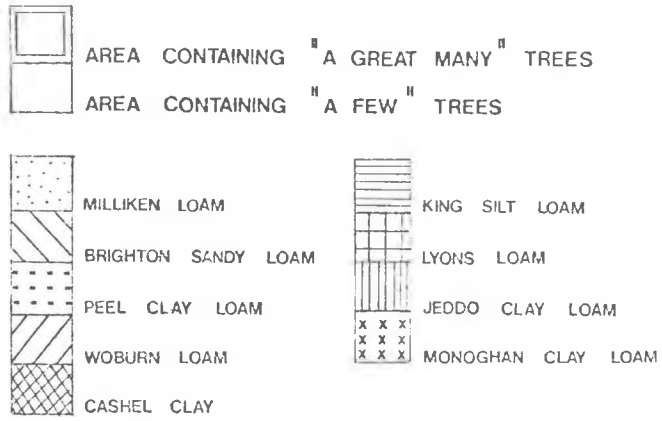
It is obvious from the above summary that in attempting to reconstruct vegetation on the basis of historical accounts, only those records which date from pre-logging and pre-settlement times will be of use. If inferences about still earlier time periods (i.e. the period during which the site was occupied) are to be drawn from this material, it must be remembered that climatic change and the activities of the inhabitants of the village themselves would have influenced the vegetation trends of the centuries which followed. Thus, the forests described by surveyors in the 1790's would not necessarily have been identical to the forests existing at the time the Draper site was occupied.

For more specific information on vegetation existing at the time of village occupation, we can look to fossil pollen analysis. Unfortunately, the sandy soils (Brighton sandy loams) of the Draper site are unsuitable for such studies because of the very poor conditions for preservation of pollen grains. However, the results of studies performed on the varved sediments of Lake Ontario and Crawford Lake by Dr. J.H. McAndrews and M. Boyko are pertinent to this discussion. Fossil maize pollen, which is not common in lake sediments, is present in Crawford Lake sediments for the interval 1290–1610 A.D. with the greatest concentration occurring from 1370–1480 A.D. (Boyko, 1973:12). The presence of maize is thought to represent Indian agriculture in the vicinity of the lake over a period of three centuries. Cultivation of maize ". . . implies forest clearance and tree percentages do drop a little during the Indian period (Dr. McAndrews)." (Boyko, 1973: 12). Pollen cores taken from Lake Ontario have shown that ". . . the age of the pine rise is 300 to 400 B.P." (McAndrews 1971: 226), and a re-examination of Crawford Lake data has pushed this date back to 500 B.P. (Mc-

²See Appendixes I and II.

Figure 1.

SOIL MAP OF DRAPER SITE VICINITY SHOWING LOCATION OF PINE STAND



Andrews, personal communication). These dates coincide roughly with the period of climatic deterioration (although the date of 500 B.P. given for the invasion of pine around Crawford Lake precedes the onset of glacial expansion in the Alps by about one hundred years) and also with the approximate time period during which the stand of white pine adjacent to the Draper site colonized. Thus, an increase in pine pollen follows the disappearance of maize in the Crawford Lake sediments.

It seems unlikely that white pine, which is normally found scattered "... throughout a large part of its geographical range ... not in pure stands but in varying admixtures with hemlock and hardwoods" would have been able to colonize on a large scale without some catastrophe having first removed the maple-beech climax forest which predominates in undisturbed areas in the vicinity of the site at present, and which probably predominated at the time of late prehistoric Iroquoian occupation (Nichols, 1935:410). Studies by Lutz (1930) on an even-aged eastern white pine forest in Pennsylvania, and Huberman (1935) on western white pine succession in northern Idaho have borne out the conclusion that in these areas white pine is able to colonize on a large scale only in the early stages of succession. Once the forest canopy has closed over, the young pine growth "... is unable to endure the conditions ... and dies out after reaching a height of less than one foot ..." (Lutz, 1930: 16).

The fossil pollen record for Crawford Lake and Lake Ontario indicates that three centuries of maize growing during the "Indian period" were followed by a rise in pine. In deciding which agency was responsible for this rise, it seems obvious that the clearing of land for agriculture created open areas which once abandoned were colonized by pine. If we attempt to explain this phenomenon through other agencies such as climatic change, problems arise. Presumably any climatic change drastic enough to have destroyed large areas of the maple-beech forest would also have destroyed white pine. A drier climate would have favored the growth of pine, but would not have been sufficiently catastrophic to have allowed widespread invasion. Although pollen analysis has not been possible for the Draper site, historical accounts of large pine stands may allow us to make similar inferences about late prehistoric Iroquoian agriculture. It is in this area of investigation that the early descriptions have proved useful in determining the location of the pine.

ACCOUNTS OF MISSIONARIES AND SURVEYORS

François de Salignac-Fénélon, a Sulpician missionary, was one of the first white men to record his impressions of the vegetation of the Lake Ontario region. In a memoir attributed to him dated 1670 he noted that "... the lands

which surround her and which are not covered with prairie, are covered with very beautiful and very large trees, but those which one finds the most of are pine and oak." (Yon, 1970: 152).

It is unfortunate that he was not more specific. Nevertheless, surveyors' descriptions of a century later in Pickering and Markham Townships (and elsewhere) have indicated the location of pine stands occurring within the maple-beech forest. Perhaps the large numbers of pine trees which Fénélon observed were in truth stands such as these.³

The descriptions by early surveyors of the forests of Pickering and Markham Townships have permitted a partial reconstruction of the area before logging and settlement. The records of Abraham Iredall (1794) and another unknown surveyor (1801) indicate that the original forest of Markham Township was dominated by maple and beech on good land with associated species of basswood, elm, ash, hemlock and some pine. In low, sometimes swampy areas cedar and ash were found.

Gibson, surveying in Markham in 1827, mentions black ash, basswood and some hickory on low ground that is wet in spring and fall (R.D.H.P., 1956: III, 1).

The surviving records for the southeastern quarter of Pickering Township are very detailed and the particular associations of tree species occurring on certain types of soil have been noted. The report and field notes of Augustus Jones (1791) of the First Concession and Broken Front, and the field notes of William Hambly (1793) from a survey of Major Smith's Land in the southeast corner of Pickering, have been very useful in distinguishing some of these associations which included the following: maple, beech, black oak, basswood, elm and birch on deep, rich soil; oak, pine and maple on loose, good soil pine and hemlock on loose, sandy soil; hemlock on stoney soil; cedar on low swampy ground; spruce and tamarack on low, swampy ground; and ash on low, wet ground.

The Historical Evidence for Pine Stands Occurring in Pickering Township

Perhaps the most interesting information on the pre-logging and pre-settlement vegetation of Pickering Township is found in a document entitled *Report of Mastings and other Timber fit for the Use of the Royal Navy, In the Township of Pickering*, signed by Augustus Jones, Deputy

³ Fénélon's purpose in writing his *Memoire* was to paint a picture of Canada that would encourage French involvement. In listing the "advantages" to be found, he may have exaggerated to achieve this end. "All kinds of good woods" would have been advantageous for "the sea industry ... construction and (for the development of) ... a useful trading business ..." (Yon, 1970:182).

Surveyor, on the sixth of December, 1797. This report describes the girth at breast height, apparent height and relative abundance of pine on a lot by lot basis. Although the species of pine is not stated, it is evident that the trees were eastern white pine (*Pinus strobus* L.). White pine is the only eastern conifer attaining the heights described by Jones. It was also favored for masting timber because of the long clean shafts of trees grown in closed stands. By plotting out the areas heavily timbered with pine on a county map showing lots and concessions, it has been possible to determine the exact location of these great stands of pine (see Figure 2).

In preparing this paper I have made the assumption that all large white pine trees in Pickering Township were reserved for the Crown, and were therefore recorded in Jones' *Report*. I have based this assumption on information from several sources which indicates the concern shown by the British Government over the protection of its masting timber. In a letter dated October 8th, 1795, Acting Surveyor General S.W. Smith instructed Abraham Iredall that:

... certain individuals have an intent of subverting the Bounty of Government in the Grants of the Waste Lands of the Crown, which have been solely and expressly intended for the purposes of Husbandry, and ... employ themselves in the Lumber Trade ... and thereby commit considerable waste of the White Pine, which is generally reserved.

(Maps and Survey Records,
Letters Written No. 4:1052-54)

In New England, where exploitation of the white pine had begun in the early 1600's, the Crown attempted to discourage settlers from cutting and wasting (or selling) these enormous trees. In a strongly worded decree dated 1761 the royal governor was instructed to insure the inclusion in all future land grants of a clause that would:

reserve all white or other Sort of Pine Trees fit for Masts, of the growth of 24 Inches Diameter and upwards at 12 inches from the Earth, to Us our Heirs and Successors, for the Masting of our Royal Navy, and that no such Trees shall be cut — without our Licence — on Penalty of the Forfeiture of such Grant, and of the Land so granted reverting to the Crown; and all other Pains and Penalties as are or shall be enjoined or inflicted by any Act or Acts of Parliament passed in the Kingdom of Great Britain (Peattie, 1948:52).

Augustus Jones unknowingly left us a means of estimating the age of the Pickering stands when he recorded the heights of the trees. Although his height estimates were probably not totally accurate, when describing the apparent heights of trees on different lots and concessions, he was sufficiently thorough as to distinguish between trees 140, 150 or 160 feet tall (or higher). The age of the stand immediately to the west and northwest of the Draper site is of particular interest. The site itself occupies

parts of Lots 29 and 30, Concession VII in Pickering Township. Jones recorded that the area immediately to the west of the site, Lot numbers 31 through 35, Concession VII, contained "a great many" trees having an apparent height of 140 feet. In addition, to the northwest of the site, Lots 32 through 35 of Concession VIII were covered with "a great many trees" having apparent heights ranging from 140 to 160 feet. "A few trees" of this description were recorded on Lots 30 and 31 of Concession VIII, and Lots 33 and 34 of Concession IX. Another surveyor, whose name remains unknown, working in Markham Township on the nineteenth of July, 1801, recorded a few pine growing on Lots 21 through 26 of Concession X. These lots abut against the timbered lots in Concessions VII and VIII, Pickering Township. The heights of these trees were not recorded. The total acreage represented consists of 1,800 acres containing "a great many" trees and about 2,000 acres containing "a few trees."

It is clear from these records that the central portion of the stand was heavily timbered while its perimeters, except in the vicinity of the site, were sparsely timbered with pine. Beyond the perimeters of the stand, forest growth dominated by maple and beech was described in Markham. No records for Pickering appear to have survived for the higher concessions, i.e. those concessions distant from the lake, but it is clear from descriptions of adjacent Markham Township that the maple-beech forest was unbroken.

The trees of this stand and others in the vicinity were removed with no attempts having been made to determine age. Yet if we compare their heights with the heights of pines from stands for which age estimates have been made, we can assign them an approximate age. Spalding, in 1899, compiled a Table of Measurements of white pine grown under similar conditions, grouped in age classes for averaging. One group of trees studied by him in Michigan from "a two-roof grove, (with an) upper roof formed of White Pine, (and an) under roof of Beech, Maple, Fire, and occasionally White Birch and Hemlock. . ." had attained an average height of 141 feet when growing on brown, loamy, moderately loose sand (Spalding, 1899:92). These trees were found to have an average age of 258 years. If we assign an approximate age of 250 years to the stand of 140 foot trees discovered to the west of the Draper site in 1797, it follows that the stand began its growth in approximately 1550. Some of the trees to the northwest of the site had attained heights of 160 feet, according to Jones. Again, records from a late nineteenth century white pine stand in Michigan indicate an average age of 446 years for a "moderately dense grove of White Pine intermixed with hardwoods and Hemlock, with occasional Norway Pine, (growing on) brown loamy sand, medium fine grain(ed) . . . loose, very deep, (and) well drained . . ." (Spalding, 1899:92). The average height of the white pine in this stand was 157 feet. Perhaps the taller (160 foot)

trees to the northwest of the Draper site were older than the 140 foot trees to the west of the site. If Jones' height estimates were correct and if the ages of these trees are comparable to the ages of trees of the same height from nineteenth century Michigan pine stands, the 160 foot trees may have begun their growth as early as 1350.

It is also possible that differences in the composition of the forest understory contributed to height differences in the Pickering stands.

The height development of White Pine seems to progress more rapidly when it grows mixed with other species (such as Norway pine).

(This effect depends) . . . upon the capacity of the associated species to grow in height as well as upon the time when the associated species are either introduced among the pine or received by it under their shelter (Spalding, 1899:32)

Since Jones left no record of the associated tree species found in the stands, it is impossible to come to any definite conclusions on this matter. It seems unlikely, however, that this factor alone would have resulted in a height difference of 20 feet between the 140 and the 160 foot trees.

It is true that locality influences the height growth of white pine through variation in climate, soil and shade features. Spalding was able to measure differences in the height growth of trees from Pennsylvania, Maine, Wisconsin and Michigan resulting from environmental influences. The Pennsylvania trees ". . . started at a lower rate than those in all other localities, but after the twentieth to the twenty-fifth year they surpass(ed) all others." (Spalding, 1899:33). This was attributed to early growth of the trees in mixture with hemlock. The retarded growth of Maine and Wisconsin trees (compared with Michigan trees) between the eightieth and ninetieth year was attributed to poor soil and the effect of winds respectively. However, the trees grown in Michigan ". . . with its tempered lake climate present . . . a most regular and persistent height curve, coming nearest to the average of all locations." (Spalding, 1899:33).

The age estimates for the Pickering pine stands have been based upon height comparisons with nineteenth century Michigan trees for which age determinations were made. The available evidence suggests the validity of such a comparison on the basis of similar climate and soil features. Both the Pickering and Michigan pine stands were within the sphere of influence of the Great Lakes where white pine makes its best growth. The soils which supported the Michigan trees were described as brown, loamy, loose sands, while the Pickering trees were found on Milliken loam which has a ". . . fine crumb structure . . ." (Olding, Wicklund and Richards, 1950:35). While the lack of detailed evidence in Jones' *Report* makes error inevitable in this type of comparison, the general growth curve followed by white pine makes it unlikely that this will be

serious enough to affect the arguments presented here.

SIGNIFICANCE OF THE PINE STANDS

Large, even-aged stands of white pine are not a normal element of the maple-beech climax vegetation of southern Ontario. It has already been established that young pine are not able to colonize on a large scale under the heavy canopy which exists in this type of climax forest. The prerequisite for a large, even-aged stand in an area where white pine normally plays only a minor role, therefore, would appear to be fire, or some other major disturbance likely to have exposed a large area of land surface for colonization. Studies of large, even-aged stands of *Pinus strobus* L. by Lutz (1930) and of *Pinus monticola* Dougl. by Huberman (1935) have revealed evidence of fires from examinations of fire scars on the annual rings of the trees themselves, and from information found in early diaries of fires set by the Indians "to facilitate hunting . . . to encourage new growth of grass" or to cause certain species of plants used for food to "renew themselves and yield further crops." (Lutz, 1930:18). Cooper (1961:150) also states that the American Indians "often . . . burned intentionally — to drive game in hunting, as an offensive or defensive measure in warfare, or merely to keep the forest open to travel."

In addition to eastern and western white pine, other species of conifers whose seedlings have high light requirements are able to colonize burnt over areas. Douglas-firs, for example, are found in pure, even-aged stands only where forest fires have "arrest(ed) the succession by creating openings in the forest into which the light, winged seeds of Douglas-firs can fly from adjacent stands." As the old fir trees die, shade tolerant cedars and hemlocks come in to fill the gaps and in this way the climax vegetation of the region is restored (Cooper 1961:151).

Historical records of the area to the west and northwest of the Draper site at the time of its colonization by pine are nonexistent, and the pine trees themselves have long since disappeared. It is only possible to speculate on the type of disturbance which might have resulted in large scale colonization by pine. It seems reasonable that this large, even-aged pine stand might represent an early stage of succession occurring on the abandoned maize fields of the late prehistoric Iroquoian agriculturalists who inhabited the adjacent village. This hypothesis is supported by the fact that the time period during which the pine growth to the west of the site began (c.1550) coincides roughly with the time of abandonment of the village in the late fifteenth or early sixteenth century. Jones' records also indicated that taller, and possibly older trees were found growing to the northwest of the site along with trees of the same height (140 feet) as those to the west of the Draper site. It is

impossible to tell whether these trees, which had attained heights of 160 feet, were intermixed with the shorter trees, or whether, as seems more likely, they represented a separate, older stand. If this is the case, an older maize field and perhaps another site might have existed to the northwest of the Draper site. Another possibility is that the Draper site experienced an earlier occupation (Donald MacLeod, personal communication).

Additional support for the hypothesis that the pine stand adjacent to the Draper site represents the area once occupied by maize fields comes from soil data. The greatest concentration of pine trees occurred in exactly that area to the west and northwest of the site which is characterized by Milliken loams (Fig. 1). These soils, as described previously, are good for the growing of ensilage corn, and because of their loose texture would have been more suited to late prehistoric Iroquoian agricultural techniques than would the heavy clay loams of the Peel series. White pine also makes its best growth on fertile, loamy soils such as those found in the Milliken series, but the occurrence of a large stand is somewhat unusual since "the more tolerant species, particularly hardwoods, generally crowd out the pines on richer soils" (Bedell and Horton, 1960:50). The above information increases the likelihood that large scale colonization by pine in this location came about as a result of the abandonment of maize fields by the inhabitants of the nearby village.

Another interesting feature regarding the pine stand adjacent to the Draper site is the area of land that it occupied. The stand stretched approximately one and one-half miles to the west of the site and about two miles to the northwest. Heidenreich, in his calculation of the size of the maize fields of the largest villages of Huronia — Cahiague, Ossossane and Teanaustaye — has surmised "that the Hurons did not wish to cultivate fields that were more than about one and one half miles from their village." (Heidenreich, 1970:322). He reasons that by that time the nearest field would have become exhausted, and the protection of workers in the far fields would have become a problem (Heidenreich, 1970:323). Thus, the area represented by the pine stand corresponds closely with Heidenreich's estimate of the maximum size of a field practical for agriculture. However, despite general agreement on the large size of the Draper site (6 to 10 acres), it will not be possible to estimate village maize requirements until further excavations of longhouses allow some kind of population estimate to be made. It is interesting to note here that the White site, which to date has yielded no evidence of any kind of structures, lies within the boundaries of the area once occupied by the pine stand on parts of Lot 33, Concession VII. Perhaps it was used as a maize husking station by women and children working in the fields.

The above information takes on even more meaning in view of the existence of other large, even-aged pine stands

in Pickering Township to the south and southwest of the Draper site. These stands, some of which appear to have been older (ca. 1300–1350 and 1450 A.D. according to height estimates) than the stand adjacent to the Draper site, were located in an area dotted with other late prehistoric village sites. The correspondence between the location of some of the pine stands and village sites is remarkable. (See Figure 2.)

Perhaps when the cultural affiliations of sites discovered in the vicinity during the summer of 1973 (Konrad and Ross: in press) are better known, the location and ages of these pine stands might be useful in rounding out our picture of agricultural activity in the area. The possibility also exists that some of these areas were exposed by natural or Indian generated forest fires, but this cannot be determined without further studies.

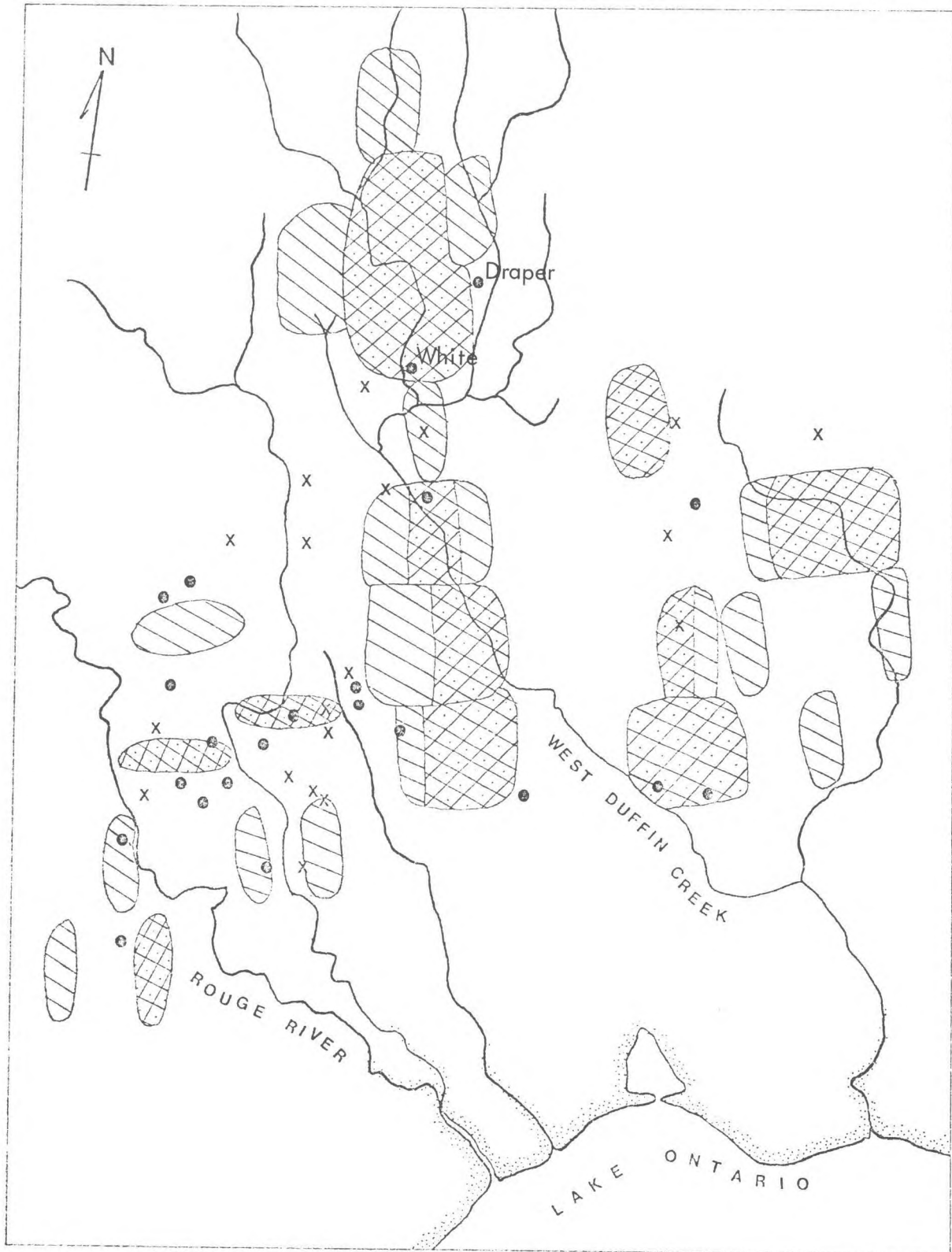
Summary

The data which have been presented to support the hypothesis that the pine stand to the west and northwest of the Draper site represents the area once covered by late prehistoric Iroquoian maize fields may be summarized as follows:

- 1) Large, even-aged stands of white pine are not a normal element of the maple-beech climax vegetation of the region.
- 2) The even-aged character of the trees (250 years) as determined by height estimates made in 1797 indicates that the stand began its growth in approximately 1550. This is the approximate time period following site abandonment in the late fifteenth or early sixteenth century during which large scale colonization by pine could have taken place.
- 3) The abandoned maize fields of the late prehistoric Iroquoians would have satisfied the light requirements of white pine seedlings which otherwise die out quickly under the canopy of a maple-beech climax forest.
- 4) Fossil pollen analysis on the sediments of Lake Ontario and Crawford indicates a pine rise dating from 300 to 400 years before the present.
- 5) The soils which supported the greatest number of pine are at present rated as good for the growing of ensilage corn. Their loose, loamy nature would have been within the limits of late prehistoric Iroquoian agricultural techniques, unlike the heavy clay soils to the east and northeast of the site.
- 6) The area of land occupied by the pine stand corresponds roughly with Heidenreich's estimates of agriculture land requirements for some of the larger villages in Huronia.

Figure 2. LOCATION OF PINE STANDS IN RELATION TO ARCHAEOLOGICAL SITES

	AREA CONTAINING "A GREAT MANY" TREES	CULTURAL AFFILIATION OF SITES
	AREA CONTAINING "A FEW" TREES	● LATE PREHISTORIC IROQUOIAN X UNKNOWN



Appendix I

EARLY SETTLEMENT OF THE SITE LOCALITY

The specific location of the Draper site is on parts of Lots 29 and 30, Concession VII, Pickering Township. These two lots were first settled in 1799 by Mary Ann Fleming and passed through several ownerships until the 1840's when Lot 29 was settled by Adam Spears, a native of Scotland. He "established a sawmill on the stream running through the farm. Large quantities of lumber were teamed

from here to be shipped at Frenchman's Bay." (Wood, 1911:295). Later, in 1859, Lots 39 and 31 of the same concession were settled by William H. Burk, who came from Markham to Pickering. He too built a sawmill on West Duffin Creek (Wood, 1911:228). It is evident that the site locality experienced many changes in the first fifty years following settlement alone.

Appendix II

EFFECTS OF ENVIRONMENTAL DETERIORATION
ON NATIVE FAUNA

Large scale land clearing operations cannot help but affect other aspects of the environment. Logging removes the natural habitats of mammals and birds, thereby reducing their numbers. In addition, the removal of timber affects stream life by increasing erosion and by lowering the water table through increased evaporation from exposed land surfaces. In 1911, William R. Wood commented that "... with the deforestation of the country the streams have dwindled, and lake salmon come to Whitevale tables [on West Duffin Creek] only by way of the canning factory." In the 1800's, the same species had been recorded "as far as the fifth concession . . . in Pickering Township. . ." during the spawning season (Wood 1911:202-203).

Erosion has undesirable consequences for stream life in areas where a marginal strip of streamside vegetation has not been left to prevent overland runoff from increasing sedimentation within the stream. In the case of Duffin Creek, once known for its spectacular salmon runs which earned it the French name of Rivière au Saumon,⁴ increased sedimentation from logging and clearing operations may have been one of the factors resulting in the disappearance of the lake salmon. Heavy silting buries fish eggs and

reduces the amount of oxygen available to the developing embryos, thus causing increased mortality. It reduces the number of food organisms and also the occurrence of habitats required by both trout and salmon for spawning (James, 1956:43; Burns, 1970:7-8).

In addition to man's activities, natural agencies (which can wreak more devastating effects *because of* man's activities) have also acted in changing the character of the streams of the area. After Hurricane Hazel, sections of the Rouge River, Highland Creek and parts of Duffin Creek "which were (formerly) listed as silted or slow-flowing may now be riffles and rapids; other sections which were rapids are now turned into pools . . . Bank erosion was very greatly accelerated." (R. D. H. P., 1956:V, 17).

Thus, the native fauna of the forests and streams in the vicinity of the Draper site have been as much obscured by lumbering, settlement and natural events as have the forests themselves. Once again, it is necessary to look to historical records for information.

Historical Accounts of Fishing

Perhaps the most interesting description of fishing on Duffin Creek and surrounding area comes from the Journal of Wing Rogers.

And when but a youth and up to manhood, and the early part of my days, we caught hundreds and

⁴This name appears on a map drawn by Pierre Boucher de la Broquerie in 1757 (RDHP, 1956:I, 11). The earlier, Indian name of Sin qua trik di qui ock meaning Pine wood along side — is cited by Augustus Jones in a document entitled Names of Places, dated July 4, 1790.

thousands of Salmon in Duffinses Creek, that ran through my fathers farm on the which we built a sawmill and grist mill, and also they were caught in all the cricks and streams on the north side of Lake Ontario that was large enough. But as the fishermen increased, and the country became cleared up, the mildams built, which prevented them from growing up to spawn, besides all that nets and seins, and the increase of navigation, on those waters (where 60 or 80 years before there was not a white man to be seen) – doubtless this is the reason why they faled; and also all kinds that had to spawn in the running waters the salmon trout whitefish sturgeon herin pike and pickerell – and many more kinds live in the great water, the mullets and suckers the beautiful little speckle trout and Eals run up the Creeks and also, men contrive schemes and plans even to draw them out of deep waters, and the poor fish, like the Natives of Aboregines, are fast diminishing, for which I sorrowe (McKay, no date:183-195).

LaRocheffault-Liancourt, in an earlier description of fishing dating from 1795, mentions “. . . the vast quantities of fish with which the lakes abound, and especially of sturgeons in Lake Ontario . . .” (Fraser, 1916:31-32). In an account of a fishing expedition in the vicinity of the Niagara River and Lake, he recounts that: . . .

Upwards of five hundred fish were caught, among which were about twenty-eight or thirty sturgeons, small pikes, whittings, rock-fish, sun-fish, herring, a sort of carp, . . . salmon-trouts, in short all the fish was of a tolerable size. Middle sized fish are easily caught by anglers on the banks both of the river and the lake, they frequently catch more than their families can consume in several days.

Historical Accounts of Game

In 1911, William Wood noted that “In the earliest quarter of the nineteenth century wolves were to be met with and on into the middle years bears were often seen.” (Wood, 1911:202). In 1882 an anonymous writer for Picturesque Canada described a portage route that had once led up from the Whitby shore “through a famous deer park . . . (and on to) the bass fishing on Lakes Scugog and Simcoe . . .⁵” (Pict. Can., 1882: Vol. II, 624). Earlier still, in 1687,

Count Denonville gave the following description of a feast given for him at Ganatsekwyagon, Seneca village on the north shore of Lake Ontario at Frenchman’s Bay, after his flotilla returned from burning Iroquois villages of unbelievers on the south shore of the lake.

. . . we . . . arrived at a place (Gatsekwyagon) . . . We found them with two hundred deer they had killed, a good share of which they gave to our army, that thus profited by this fortunate chase (Robinson, 1965:56).

Finally, Fénélon, in his *Memoire* of 1670, left us with the following description of the lands around the St. Lawrence River in the vicinity of the Kente Mission on the Bay of Quinte.

The river is very abundant in fish and the lands which surrounds her farther on are very fertile, and they are still all covered in moose, stags, deer, bear, beavers et. (Yon, 1970 152).

The above descriptions indicate that plentiful game was available at the time of European contact. However, in attempting to draw inferences about the distribution of fauna at the time of site occupation, the same problems as those encountered in reconstructing vegetation present themselves. The clearing of forest for agriculture by the late prehistoric Iroquoians would have destroyed the habitats and reduced the numbers of many species. The abundance of these species would presumably have increased after agricultural activity in the area ceased, and after forest succession created new habitats. Deer, on the other hand, would have benefitted from land clearing, which in creating new areas for pasture would have contributed to an increase in the population of this species. The re-establishment of the climax forest on land once used for agriculture would have reduced their numbers. Thus, depending on the type of forest cover at the time of contact, early European accounts of wildlife may or may not be representative of the faunal composition of the general area during the period of its occupation by late prehistoric Iroquoians. Fortunately, preserved bone material from the sites themselves provides a more complete record of the animal species used for game.

⁵ Another Indian path “probably led northwards up Duffin’s Creek (R.D.H.P., 1956:1, 54).”

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