A history of renewable resource use in the Essex region (Ontario).

Arthur Patterson Pegg
*University of Windsor*

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A HISTORY OF RENEWABLE RESOURCE USE
IN THE ESSEX REGION

by

Arthur P. Pegg B.A.

A Thesis
submitted to the
Faculty of Graduate Studies and Research
through the Department of
History in Partial Fulfillment
of the requirements for the Degree
of Master of Arts at
the University of Windsor

Windsor, Ontario, Canada
1991
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ABSTRACT

THE HISTORY OF RENEWABLE RESOURCE USE

IN THE ESSEX REGION

by

Arthur Patterson Pegg

The use and misuse of resources by humans permits and/or requires the use (or misuse) of new resources. Various methods in exploitation of resources are investigated in this study from prehistory through to the 19th Century. The geographical focus is the Essex, Ontario region. Although the time periods discussed are distinct, their similarity lies in the study of the interaction of human agency with available resources.

Technological, ideological, social and ecological factors are considered in the research. Variables in the above factors and in the approach to the resource base by humans bind the periods together. The archaeological record regarding the prehistoric period provides data on land use, aboriginal settlement and subsistence strategies. The observation of explorers, surveyors, and military personnel supplies information in the resource base and reflects upon attitudes towards it. Land clearing, forest exploitation
and the technology of the 19th Century is studied to illustrate the uses of the resource base during that century.

The latter half of the 19th Century is included to provide a cohesive study of the results of the use and misuse over time of resources. To emphasize the points of study in this thesis for the post railroad era (circa 1954), a select number of reports, government statistics, and media observations are presented. Such reports point out the results of technological innovation on the resource base and what steps were being taken to mitigate the waste of resources.

It is advantageous to clarify the use and misuse of resources and to point out the various strategies by which different cultures approached the exploitation of resources available to them.

It is the intent of this study to contribute toward a platform of research for the conservation of resources in the Essex region.
DEDICATION

I dedicate this study to Barbara, with deepest gratitude for her patience and personal power. I also wish to thank my parents Evelyn and Pete for their continual support as months became years.
ACKNOWLEDGEMENTS

The author is indebted to many persons during the preparation of this thesis. I would like to thank Professor Larry Kulisek for his invaluable guidance and positive suggestions throughout each stage of the work. A special thanks is given to Nancy Northcott for her editorial endeavours and typing. Finally, I wish to express my most sincere appreciation to Barbara for her continual support and patience and to my parents for their encouragement as months became years. Any errors or omissions in the thesis itself, of course, are my own.
Introduction

This paper is a study of renewable resource use in the environs of the Detroit River from prehistory through the 19th century. It maintains that throughout the period covered in this thesis, repeated changes and approaches in renewable resource use occurred and that these approaches consequently resulted in continually variable methods of exploitation through time.

This frame of reference can be justified by illustrating time periods through chronological segments that broadly connect. Although the time periods are distinct, their similarity lies in the study of the interaction of human agency with available resources within a particular geographical region.

Technological, ideological, social and ecological factors are considered in the research as resource use is a product of such factors.

Variables in the above factors and in the approach to the resource base by humans throughout the noted time frame bind the periods together to provide a cohesive format.

Chapter I reviews the prehistory of the area to set the stage for this study and to provide a record of continuity in land use and the resources that were available for exploitation based on recent archaeological research and assumption.
Prior to the 18th Century human agency had little impact on the resource base. Aspects of the fur trade did have however, and a comment on this from a resource use point of view is included.

I have included in Chapter II a study of the observations of explorers in the 17th, 18th and 19th centuries as well as available early 19th century land survey and military records. I have also partially reconstructed a vision of the resource base from that perspective to reiterate the theme of resource exploitation, and to interpret past attitudes towards it and land use.

In Chapter III, land clearing, forest exploitation and the technology of the 19th Century is studied to illustrate the uses of the resource base and effects upon it, reflected through the ideology of the time period.

As a conclusion I discuss the latter half of the 19th Century through the use of 19th Century reports, government statistics, media observations, etc. to provide for a cohesive study of the effects of previous misuse of resources as well as to review the effects of technological innovation introduced during that time period.

The exploitation of the resource base was quite different in each of the chronological periods I discuss in this paper. It is relevant to connect such a broad time frame; it illustrates how resources are exploited in varying
patterns through time. In addition, this study clarifies how the use and misuse of resources permits and/or requires the use (or misuse) of new resources. It also points out new strategies by which different cultures approached the exploitation of the resources available to them.
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CHAPTER I

Aboriginal Resource Use: The Archaeological Record
Within the geographical region covered by this study, human exploitation of the biota was possible once a compatible environment existed. Mastodon and caribou may have provided subsistence for the first inhabitants of the region. As to the use of plant resources there is sparse evidence.

From an archaeological perspective the first stage in the prehistory of the Detroit environs is the Paleo-Indian period (circa 9000 - 7500 B.C.) represented by nomadic hunters of large game. The next broad time period is the Archaic (circa 7500 - 800 B.C.). The people of this period were also nomadic hunters who likely relied partly on plant gathering as well.

The next time period is the Early Woodland (circa 800 - 0 B.C.). The use of pottery distinguishes this period from those preceding it. During the Middle Woodland (circa 0 - A.D. 500) a more elaborate style of pottery appears in the archaeological record, as well as evidence of long distance trade of exotic artifacts, and the appearance of earthen mounds. The late Woodland (circa A.D. 500 - 1600) reflects the beginning of village farming in some areas.

The first four periods are represented by a sparse archaeological record. However, the surface lithics found regionally provide the earliest evidence of resource use by
humans' coexistence with the natural world. Stone artifacts represent the harvesting of fauna resources within an ecologically diverse habitat. The use of lithics and their design provide evidence of hunting activities. This provides limited evidence of a prehistoric way of life from the time that this area became exploitable from a food procurement point of view.

By far the clearest picture available, based upon recent archaeological research, is the Late Woodland Period; represented in southwesternmost Ontario is the Western Basin Tradition.

Western Basin Tradition communities were small, seasonally nomadic groups that had an elementary form of social organization. In terms of settlement, they preferred a well-drained sand location near small creeks. Specific to the area now defined as Essex County, they may have had few settlement options; thus, the preceding locale description was chosen by these groups rather than swampy or heavily forested sections.

The following table lists data from faunal remains excavated from selected archaeological sites. The species listed show Western Basin Tradition people exploited resources for subsistence, clothing, etc. available to them through a land use strategy partly dictated by geography and a "seasonal round" approach, being a movement of peoples
## Animal Species Found at Selected Essex County Western Basin Tradition Sites

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<th>SPECIES</th>
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<th>IIIC1/2</th>
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Figures show the minimum number of individual animals at a site. P shows that the species is present, minimum numbers unknown. Sources: Kenyon, Ferris, and Hagerty, 1985; Reid, 1982

Table 1
because of seasonal change to exploit various habitat abundant areas in spring, summer, fall and winter; for example, shoreline sections in summer and nut gathering areas in fall for harvesting of resources.

Western Basin sites have provided evidence for the use of wild plants, including hickory and butternut, chestnut, walnuts and acorns, as well as species of berries. Domestic plants were also a part of the diet although it is believed they were not a dominant part in this hunter-gatherer form of subsistence.

The environment in which these groups existed provided a varied resource base for subsistence practices. Although the impact that they had on this region was slight due to their low population, the Western Basin people existed in a fixed environment.

Recent research now provides a clearer and more cohesive platform for the interpretation of renewable resource use as it pertains to this study.

Although there is a sparse data base throughout prehistory in this region, it is nevertheless clear that cultural groups exploited the resources available to them with little impact on the resources of the environment.

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1 Peter E. W. Reid, The Late Prehistory of Southwesternmost Ontario, Department of Sociology and Anthropology, University of Windsor, 1989; 21.
The patterns of the Western Basin settlement - subsistence strategy provide an hypothesis for resource use and land use with reliable data. There was an attraction to various landforms seasonally to harvest and exploit available resources. There took place a movement of peoples in order to take advantage of preferred or plentiful resources (fauna, berries, nuts, etc.)\(^2\) in certain ecological "niches". Settlement patterns altered somewhat in the latter part of this period as an emphasis on cultigens emerged; yet a continuation of trends from the first half of the Western Basin Tradition persisted; that is, a diffuse pattern of exploitation remained.

The use of key extraction locales was maintained while base settlements were established for the growing of maize and other cultigens.

Hunting and gathering groups with a fair degree of mobility took advantage of seasonally abundant resources. During warm weather months, the tendency was exploitation along lake-shore oriented areas, with interior sites preferred during the winter. Cultigens remained a supplementary food source without altering greatly the lifeway of these people. An increase in population may have

necessitated expansion of settlement into previously vacant areas.

Larger settlements were located near or at environmentally diverse areas; probably as a result of an increase in cultigen use. This strategy combined traditional subsistence practices with the planting of cultigens in the later phases of the Western Basin Tradition.

For the purposes of this study of resource use, the cultural groups represented under the blanket term Late Woodland and Western Basin Tradition (Rivière au Vase A.D. 500 - 600 and A.D. 800 - 900; Younge Phase to 1200 A.D.; Springwells A.D. 1200 - 1400; Wolf Phase to 1600)³ exploited similar geographic areas for flora and fauna located in rich ecotones and where natural concentrations of food sources would have been established. Identified plant and animal remains from archaeological sites attest to this.

Settlement strategies of this type form a part of this cultural Tradition and in the Younge Phase in particular, remain distinct from settlement patterns of the Early Ontario Iroquoian peoples to the east who were much more dependent on a fixed locale for the growing of cultigens. As a result large central village patterns occurred.⁴

³Murphy and Ferris, Western Basin, 230.
⁴Murphy and Ferris, Western Basin, 244.
The Younge Phase of the Tradition is compared by some archaeologists to the Algonquian speaking Ojibwa peoples who occupied southwestern Ontario during the 18th and 19th Centuries. Successful yet distinct exploitation and food procurement approaches and use of resources occurred through time.

Synopsis

As near as can be judged from a far from complete archaeological record, Southwestern Ontario was abandoned by Indian groups who had previously lived in small seasonal camps within the region now known as Essex County.

The Western Basin Tradition who had occupied the region back to the time of Christ abandoned the area of Essex and moved into what is now the State of Michigan in the 15th and early 16th Century. At roughly the same time, the Iroquois Tradition had established similar semi-permanent camps in the 14th and 15th Century in the region of what is now near the City of Chatham in Kent County. This Tradition, by the 17th Century was congregated to the east around contemporary Brantford and the Hamilton area. Evidence from the archaeological record indicates that from 1400 until 1700 no aboriginal cultural group considered the Essex region as their home, although nomadic groups passed through on occasional hunting, gathering and trapping parties.

* Murphy and Ferris, *Western Basin*, 244 - 245.*
Thus for three centuries there was little resource-land-use in the Essex and Detroit River region.

By the beginning of the 18th Century the situation would change. Europeans began to probe into and discover a wealth of resources in this region. Alliances were being developed between the French and aboriginals and English and aboriginals in the commerce of furs.

To ward off the growing danger of English infiltration in the Great Lakes region, Sieur de Lamothe Cadillac developed the colony known as Le Detroit. The French hoped to hold in check the English and Iroquois and better establish cooperation with Wyandots, Chippewas, Algonquins and Hurons in the pursuit of the lucrative fur trade. Control of the fur trade meant that for the next ninety five years, this settlement at the hub of the Great Lakes system would hopefully dominate the economic and political life of the region north and west of the Ohio River.

With French occupation in 1700 at the ‘paradise’ named Detroit, Wyandot and Chippewas adapted their lifeways and congregated around the fort in order to enter a partnership with the French in the exploitation of the fur resources."

---

"Ernest J. Lajeunesse, The Windsor Border Region, (Toronto, 1960), x1."
A new era of exploitation had arrived.

Author’s Note: Indian-White interaction in the 18th Century is a controversial topic which is not part of a thesis of this nature. Debate on the transformation in traditional values and traits as well as a change in aboriginal environmental surroundings continues to generate interest in both historical and archaeological disciplines. Native patterns of resource exploitation may be further debated as evidence from a continually expanding archaeological record is provided.
CHAPTER II

The Land Revealed

1. Species Abundance and the Fur Trade
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   B. Elements of Change
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1. The Land Revealed: Species Abundance and the Fur Trade

With the arrival of Europeans, resources in the Detroit River environs were exploited on a progressively larger scale.

A new era of change would be ushered in and a diversification in the uses of the resource base would continually undermine the natural existence of many species.

A. Species Abundance

European documentation relating the abundance of wildlife and edible food sources in the region is as abundant as the resources themselves. In the Journal of Dollier de Casson and Brehant de Galinee, 1669 – 1670, Galinee writes of a well-stocked granary at their camp on the "River of the Wintering" near present day Port Dover. Included in their winter supplies were smoked venison, walnuts, chestnuts, wild apples, plums, grapes and hackberries while additional reserves of deer, bear, raccoons and beaver populated the surrounding woods.¹

Also notable for this study is the journal of Father Louis Hennepin, historian on board La Salle’s ship, the

Griffen, which first sailed the Detroit River in 1679. According to early travellers like Hennepin, the area abounded in all types of game and fur bearing animals. Hennepin’s description of native subsistence and resource use confirms these reports of abundance:

…the next day we returned the same we went and saw great numbers of Wild Goats, and Wild Turkey-Cocks.

…the younger Savages washed our feet, which afterwards they rubbed over with grease of Deers, and Goats and other Beasts, and the Oil of Bears.²

Place names reinforce the narrative evidence of the early visitors as to species abundance. Hennepin recounts their arrival “at the Lake Erie, or of the Cat, where we staid some time to kill Sturgeon, which come here in great numbers to cast their spawn on the side of the lake...this place afforded plenty of venison and fowl.”³ His reference to Lake Erie as the "Lake of the Cat" (see Hennepin Map reference insert) echoes numerous instances in the Jesuit Relations where the area is referred to as the land of the "Cat Tribe." It may be assumed that the "Cat Tribe" as well as the reference to the lake as "Lake of the Cat" were so named after the association with, and abundance of Lynx in the region during prehistoric times. Lynx remains within

² Father Louis Hennepin, A New Discovery of a Vast Country In America (Toronto, 1974), 80-82.

³ Hennepin, Vast Country, 314.
Father Louis Hennepin, "A Map of a Large Country Newly Discovered", in A New Discovery of a Vast Country in America, Toronto, 1984

Figure 1
the faunal assemblage of numerous archaeological sites help to substantiate this conclusion.

The truth as attested to by Indian Interpreter John Long, was that "The country everywhere abounds with wild animals, particularly bears, moose, and other deer, beaver, beaver eaters, lynx, foxes, squirrels, fishers, otters, martins, minx, wood cats, raccoons, wolves, musquaskes, and c_____." More importantly, however, with these abundant resources, "There are scarce any but savage inhabitants to be found, who move from place to place for subsistence, feeding on the animals they kill." With such light pressure on the existing resources, over-harvesting was impossible. But already signs of things to come were emerging.

Hennepin relates the profligate manner in which the Sturgeon (fish) were taken in great numbers when they came to spawn near the shore of the lake. "We took nothing but the belly of the Fish," he said, "which is the most delicious part, and threw away the rest." He also noted that the savage inhabitants (native peoples) were already aware of the potential value and demand for the by-products

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of the hunt:
"Their chief Commodities are Beaver-Skins, which they bring from above a hundred and fifty leagues off their habitations, to exchange them with the English and Dutch." Hennepin's observation relates that the aboriginals were already travelling a great distance to trade and more than one trading partner or option—English or Dutch—as well as French were open to them. Finally, something of the motivation of the fur traders in their dealing with the native peoples can be suspected from the following criticism of Hennepin about trading methods:

...I soon observed that their intention was to buy all the Furs and Skins of the remotest Savages, who, as they thought, did not know their value; and to enrich themselves in one single voyage."

If such were indeed the intentions and desires of the early traders, it was hardly a good start for conservation or responsible action towards the natives or the resources, cheating of natives and greed, coupled with a willingness on the part of natives to trade and to seek out distant markets created the potential for disaster.

B. Elements of Change

Prior to the eighteenth century, human exploitation of the

" Hennepin, Vast Country, 82.

" Hennepin, Vast Country, 110.
resource base in the region of the Detroit River had little impact on any particular resource. The narratives of the preceding author’s report that game for hunting was available in large numbers, supplemented in some seasons with varying food sources.

No doubt there were irregular fluctuations in resource availability due to short-term climatic change and diseases affecting animal populations. Certainly this was the case regionally. High water, for example, could and did drown large populations of small fur-bearing animals, including muskrats, along the spillways and rivers in the Pelee-Detroit region. Low water on the other hand, caused many of these same species to freeze to death in winter. Stagnant water, a problem in many local areas along Lake St. Clair and the Detroit River, created epidemics of disease among animal populations that wiped out large numbers. Natural disasters including disease, fire and drought periodically created an ecological imbalance in animal populations along the islands of the Detroit River and surrounding mainland areas, but these populations recovered quickly."

To reiterate the theme of this paper, prior to the 18th century, there was an inadequate human population

Note: extensive bibliographies relating to resource use research and personal interviews in Essex region."
density to make any significant alteration in the resource base due to human exploitation. The fur trade, however, set the stage for a progressive deterioration of regional and local fur resources, as well as increased competition amongst Indian tribes.

C. The Fur Trade: A Local Perspective

Analysis of the fur trade by volume in the regions controlled by Detroit, the trade's major transhipment point in the eighteenth century, is somewhat deceiving because the numbers of packs of furs, and their values does not apply solely to the immediate vicinity. It is the author's opinion, however, that inclusion of this data is nonetheless pertinent in establishing the number of fur bearing animals that existed regionally, prior to their exploitation and extermination during the eighteenth and nineteenth centuries. Moreover, as Detroit developed as a centre for the trade, it affected the economic and political patterns that evolved around the settlement and provided a foundation for future resource use.

A clear perception of local exploitation of fur resources is difficult; existing data is both elusive and sparse.
Early account books of the store of the Jesuit Mission at Bois Blanc (1733 - 51) refer to packs of "furs" being exchanged for such goods as beads, blankets, powder, etc. 

Travellers' sketches continued to note the abundance of species throughout the late eighteenth and early nineteenth centuries and Lajeunesse points out that beavers were so numerous that the "castor" became the unit of economic measurement or currency.

Some care must be used in applying the term fur trade in the immediate local context where the specific term beaver is not mentioned in terms of trapping. However, references to the burning of the grassland sections of the Detroit River islands and the abundant numbers of animals available for harvesting are numerous.

Detroit attracted traders, farmers, Indians and merchants. In turn, these individuals likely took advantage of local fur populations that we know by historical record were in existence during the maturation of the settlement. A local market was economically feasible on a small scale, until the effects of intense hunting and trapping terminated the supply of fur bearing animals. Those living within the Detroit environs would likely have seized the opportunity to

10 Lajeunesse, Border Region, xlviii.

11 Lajeunesse, Border Region, xlix.
exploit such a resource, trading their catch for goods available at merchants’ outlets such as Angus McIntosh’s Moy Hall or the Jesuit Store at L’Assumption. If only on a minor scale, the vicinity’s trapping fraternity along the Thames, Lake St. Clair and those bordering the Detroit River likely exploited numerous fur-bearing animals. With this in mind, fur resources locally may have provided incidental revenue in the form of supplements to a farming income, additional barter for goods, or an increased return from hunting activities.

David Farrell’s thesis notes that before the British gave up Detroit, they intended to loot the wilds of furs leaving the Detroit hinterland barren of furs.¹² That attempt followed by the increase in population density, the advance of settlement, the efficiency of trapping technology and methods and loss of habitat would quickly have exhausted the regions fur resources in the third quarter of the eighteenth century.

In 1701 Sieur de Lamothe Cadillac described vividly the Detroit River area, noting it in his records as a land of plenty with vast meadows, woodlands and a wealth of wildlife resources. By this time, fur was already the prime article of trade (and attraction). For the next century and a half

after the discovery of the Great Lakes, this commerce among British, French and Indians would continue.

Cadillac attempted to ensure an ample supply of fur by inviting the tribes of the Ottawas, Potawatami, Chippewas (Ojibway) and Hurons to remain as clients encamped at Detroit.

Let us consider these factors in the evolution of the Detroit settlement: a priority interest of the French for the area of Detroit was to establish a post and develop the fur trade as well as provide for agricultural development for fur trade resources which were already at a distance to the north and to the south. Cadillac also intended to promote and develop a granary for military provisions and supplies for the line of forts erected across the Ohio Valley and Mississippi. Finally, the intent was to develop the area of Detroit as a barrier on the chief connecting link—the Detroit straits—between the Upper and Lower Lakes, which would hopefully end competition and interloping by English competitors. Post-Cadillac plans of the French were primarily a motivation to develop the fur trade. It was this trade that would provide an economic basis for survival; moreover, the Indian trade would supply a market for metropolitan manufactured goods. The French obviously recognized the strategic relevance of such areas as Michigan and western Ontario in their scheme. Although isolated and
economically vulnerable, Detroit had an advantageous geographic location as a control point for transportation routes. As such, it would dominate the lucrative fur trade and the economic and political life of the entire region north and west of the Ohio River. It was hoped that this situation would supply insurance for Detroit's survival and expansion as an early settlement. It would also be a focal point for further exploration and exploitation of the rich resource base. In turn, the French could protect the rich fur-bearing areas along the Ohio and Illinois Rivers, as well as the portages between the Wabash and Maumee rivers. The developing rivalry for control of such transportation routes led to the impending clash between the French and English in the later years of the century.

The existence of a commercial outpost at Detroit, far in advance of agricultural settlement, demonstrates the importance of non-farming resource use strategies in the region. As Farrell notes: ...a demand centre necessitates a supply region; thus Detroit created the settlement around it, rather than the reverse.\footnote{Farrell, \textit{Detroit 1783 - 1796}, vii.}

The area's fur trade had, as a result of its resource, produced the need for the establishment of lines of communication to markets, a situation noted by Innis that
took place in other areas of North America. In addition geographical unity was promoted through this economic system. The fur trade in the Detroit frontier also produced white and Indian alliances, left its stamp on politics, and affected the social fabric and financial structure of the area.

In summary, Lajeunesse notes that by 1760, there were a considerable number of people located along the north shore of the Detroit River at Detroit; cleared land was extensive along the north and south shores. Attempts at farming wheat, oats, and corn, and raising livestock during this period had been made but the main occupation remained the fur trade and most interests from 1760 to 1775 revolved around what Lajeunesse calls Detroit's first "industry."  

2. Inception of Agriculture

Agriculture in the vicinity of Fort Detroit appeared in the early eighteenth century; the cultivated landscape emerged as extending back from watercourses (river areas) with a few scattered seigniorial windmills. As few market opportunities existed and as land was fertile enough to produce crops for sustenance, including wheat, barley, oats, peas, buckwheat, Indian corn and potatoes, it was not


cultivated extensively.

As settlement increased, the values and practices of Old World European farms would gradually become common in the area. A trend developed toward the use of European domestic produce augmented by increasing population and settlement, and traditional subsistence and farming techniques. The introduction and accessibility to basic farm technology provided assistance for such practices. Implements that were supplied included hoes, axes, ploughshares and scythes. For expoliating wild food resources, rations given out to settlers included a few pounds of lead and powder.

In its strategy to populate the area of Detroit, the French had earlier offered similar incentives with supplies without much success. Governor Frontenac and Cadillac encouraged farmers after 1701 to settle at Detroit. Developed as a strategic post at the Straits, they attempted to stimulate agricultural production and settlement by providing a market through attempts such as military subsidies etc. But the war with the British in 1756 - 1763 killed the possibilities of the development of an agricultural market based on military needs in the southwest and the fur trade needs in the northwest. Other markets such as Montreal were simply too distant.
Detroit as a granary to supply the French empire in the Ohio Valley never really developed. The French were unable to maintain strategic garrison points on the Ohio and Mississippi which affected the south shore settlement at Detroit, one aspect of the overall settlement strategy. At Detroit, by 1749, Governor La Galissoniere "promised farm tools, chickens, a sow, powder and lead to those who would occupy a farm there."\textsuperscript{16}

United Empire Loyalists from the southern states were moving to the area; from 1763 to 1796, four hundred families settled on grants of land according to Farrell. Some individuals received up to six thousand acres, including islands in the Detroit River.\textsuperscript{17}

The basic agriculture of the French community in the region was eclipsed by the arrival of these Loyalists who eventually formed a new agricultural community. As water was still the primary mode of travel, most grants and plots were located on water, leaving large tracts of land in the area undisturbed. By 1787, the system of land granting had improved. Surveys were begun along the north shore of Lake Erie for disbanded troops and Loyalists and incentives of tools and supplies were granted in this situation also.

\textsuperscript{16} F. Clever Bald, \textit{Michigan In Four Centuries} (New York, 1954), 60.

\textsuperscript{17} Farrell, Detroit, 171.
expanding the use of resources in the area.

Some regional exporting of agricultural goods was taking place at this time by Detroit merchants who were still profiting from the fur trade. For example, in 1773, four thousand bushels of Indian corn and one hundred and ninety thousand pounds of flour were exported from Detroit to Michilimackinac. The amount of produce that could be absorbed by area garrisons and fur traders, however was limited. Even with crude tilling techniques, inhabitants were creating a surplus of wheat.

Lieutenant-Governor Hamilton writes of Detroit in 1776 and notes a variety of agricultural products, including flour, wheat, Indian corn, Barrel Cyder and potatoes, and lists domestic animals such as chickens, horses, oxen, cows, sheep and hogs. He described the Detroit Straits as plentifully stocked with a variety of "fine fish", and "Providential" fruits such as melons, peaches, plumbs, [sic] pears, apples and wild edibles consisting of mulberries and grapes.¹⁰

This description is significant in pointing out the combination of indigenous food sources and domestic or imported resources being utilized. It seems at this point, that there was reliance upon the domestic fruits and vegetables within the early community, yet these were being

¹⁰ Lajeunesse, Border Region, 85.
complemented with wild food resources due to availability and accessibility.

By 1780, farm lots were appearing on the Thames River, at Jeannette's Creek, and along the south shore of Lake St. Clair - a potentially bountiful area for wild food resources. French settlers were occupying the swampy lands of Raleigh and Dover East. The main component to the advance of early settlement of the Thames Valley was the interest taken by Lieutenant-Governor John Graves Simcoe who envisioned a central military stronghold in this area.

A. Literary Sketches

On a winter trip from Niagara to Detroit in 1793, Simcoe observed and recorded potential agricultural land, the region's wildlife, the Indians, and their uses of resources, etc. Bordering the Thames were fine open plains with "immense" herds of deer; thick wooded sections separated the plains providing an excellent habitat for these animals, which supplied garrisons with an added food source such as venison for soups and stews. Simcoe noted that the Delaware Indians erected stakes to obstruct the deer, and that his troops passed between several stands of fence-like entrapments. He recorded groves of hemlock and

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pine near a large creek, where a burying ground was situated beside a deep ravine. The mound — neatly covered with leaves and wickered over exhibited a large pole with painted hieroglyphics.\textsuperscript{20}

Further along the Thames, the soldiers passed two lakes about four miles in circumference and surrounded by Birch trees. For subsistence this day, Simcoe's group "regaled" with eggs and venison. Near the "Delaware Castle," situated on the high banks of the Thames, they noticed clear meadows where in summer the Indians planted corn.

Further on, the troops walked through plains of white oak and ash, arriving at the Moravian Village for a "seasonable refreshment of eggs, milk and butter." Crossing the Thames, they observed a thick, swampy region with black walnut. A mill was being constructed at this locale, and several settlers had taken occupancy on the river's banks, near an area of meadows "adaptable" for farming. Many elk were observed in the meadows and in nearby pools and ponds, numerous fish were speared.\textsuperscript{21}

On March first "at the Thames" they noted the tracks of deer, wolves, bears, otters and other animals — the tracks being distinguishable in the freshly fallen snow.

Simcoe was obviously impressed with the forks of the

\textsuperscript{20} Cruikshank, \textit{Journal}, 290.

\textsuperscript{21} Cruikshank, \textit{Journal}, 291.
river, the site of present day Chatham. He observed
"excellent water-communication," fertile soil, potential for
easy land-clearing and agriculture, excellent climate and
good timber. He also recorded that the local Indians would
find an "equitable and commodious mart" in furs, without
their becoming prey to "unprincipled traders."
His diary is invaluable in its narration of Indian
subsistence during this period. For example, he expresses
envy towards their hunting practices and efficiency in their
uses of stone tools, and in the use of bark from trees for
shelters, etc. For his soldiers, the Indians roasted
raccoons, black squirrels, porcupines, mink and deer, using
parts of the animal with the utmost efficiency for food,
clothing and technology. Simcoe also observed the Chippewa
using a "spring of an oily nature," likely a petroleum for
sealing birchbark canoes, and which could be utilized for
various functions.

Simcoe's observations contribute numerous possibilities
in the study of resource use. Contained within these notes
was his perception of a region that held strategic
geographical advantage for military preparedness in the
defence of Upper Canada. He was considering support of such
a military presence through the availability of such
necessary resources as timber for masts and shipbuilding,
and water for communication.
Topography entered into such a strategy as well; not only in terms of defence, but for agriculture, a necessary system to support a population for settlement and to provide a market economy to open up the region.

An interplay between cultures is evident; his writings seem to note compatibility between Europeans and Indians at a crucial point in the history of this specific area. The soldiers no doubt brought with them their necessary supplies of food, technology, etc. Nonetheless, food sources were supplemented by local resources acquired through the efficiency of the Indians.

The Europeans, although they brought with them innovative technologies to confront the new frontier, often learned from aboriginal ways how best to exploit their surroundings.

In turn, with the diffusion of European technology into aboriginal culture, the Indians not only accepted this technology aggressively, but used it to further advantage in complementing an already efficient (sometimes too efficient) approach to resource exploitation.

It is diaries such as Simcoe's that illustrate in a simple, yet poignant manner, the way the two cultures associated for survival and coexistence during this period in history.
Further to the west, the banks of the Detroit River, are described by John Howison in 1821, as the "Eden of Upper Canada." He attributed the potential advantage of internal commerce to the plentiful lakes and navigable rivers in the area; the ships that would sail upon them could, in his opinion be constructed by timber from the wide-spread forests. He too, was impressed with the many orchards and fruits available, noting that cider was served at every home.

Joseph Pickering’s narrative (1824 - 1839) described with his own opinions, the land as it was evolving with examples of cultural development and subsistence. By mingling and working with the first European people, he gathered first-hand knowledge of daily life and observed their feelings and cultural differences. The sketches seem to highlight dependence upon resources, and emphasize transportation etc. (sailing and rowing along the north shore of Lake Erie over great distances for example). Settlements developed dependent upon the water resource and its availability and accessibility. Resources such as timber and various crops, were all transported by water.

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Pegg, *Fur Trade To Farmstead*, 20. Pickering’s ‘Sketch’ of 1827 describes settlements and farming areas in this detailed account.
Mills also provided a great deal of the flour necessary for subsistence. Crops reflected in his narrative illustrate the Old World strategy of agriculture and survival continued on in this new land. Many of the species which he mentions were once plentiful in orchards and farmyards. Hunted easily due to their abundance, they are now extirpated in the region or are extinct; the result of over hunting, and little or no resource management. A few details add perspective:

Pigeon Bay at Point Pelee was a favourable fishing area of the Indians for sturgeon. Cedars grew along the sand banks which surrounded the Point, enclosing large ponds and marshes similar to those noted by Pickering at Rondeau - the great place for waterfowl.

Pickering’s narrative presents both detrimental and beneficial factors through a farming perspective. The former element includes his first encounters with the wilderness and the feeling of depression which was common to early immigrants. In addition, he encountered copperhead snakes, rattlesnakes and mosquitoes. Wolves were also a constant threat to livestock.

The beneficial aspect included the future “prospect for prosperity” along the Talbot Road and the "absence" of discontent amongst the settlers according to Pickering. Crops that did well regionally consisted of melons,
musk melons, cucumbers, cabbages, and fruit trees of cherries, plums, apricots, peaches, nectarines, gooseberries, and currants. Flocks of wild turkeys were common, as well as were raccoons and black squirrels. Land was sometimes purchased "by the skins of musk rats" killed in the marshes. Skins sold for 2s.3d. each. Pickering notes their scarcity due to uncontrolled hunting.

Considerable quantities of fish, notably whitefish, were being caught at Pelee in seines, and sold for 27s. per 200 lb. barrel.

The Indians were selling venison and deer skins in local taverns, bartering for liquor rather than cash.

As he passed the islands of the Detroit River, the author noted two resource use activities - muskrat harvesting and grass burning and mowing for use as hay. His observations along the river detail crops, settlements, neatly cleared land (with no stumps), and meadows with "great numbers" of cattle and horses grazing.

The Pickering journals present a perception of sporadic population density. Although crops seem to be abundant, the population of farm hands for harvesting is not. The ingenious use of resources (cutting marsh grass from the islands, muskrat harvesting, seine fishing, etc.) to supply the settlers with food for themselves and livestock, and as an incidental source of revenue, is no doubt beginning to
apply pressure to regional resources - affecting areas with a concentrated demographic density. Already in specific regions it is being observed that resources are becoming scarce.

Robert Gourlay predicted in 1820 that the Detroit River environs would soon be an extensive range of villages and cultivated fields, with a market that would be linked through the St. Lawrence, Ohio and Mississippi regions. His prediction included the opinion that the Detroit region would become one of the most 'delightful' in the world.24

He classified his information under the heading "Productions." I have included topics relevant to this thesis as follows:

Forests

At the time of Gourlay's writing, he noted that many forests still "defied" the settlers' axe. Common trees were beech, maple, birch, elm, bass, ash, oak, pine, hickory, butternut, balsam, hazel, hemlock, cherry, cedar, cypress, fir, poplar, sycamore, whitewood, will-spruce and buttonwood. Bushes included thorn, goosberry, blackberry, raspberry, grape and cranberry.

Such resources supplied survival subsistence and an

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auxiliary food source for the early settlers, as they had for the Indians that preceded them. Not only did these wild berries provide basic nutrients, but they attracted wildlife to the particular areas in which the berries grew. In turn, such stands provided good hunting spots and were included in a strategy of seasonal rounds.

Gourlay noted the importance of the sugar maple and the use of its sap for a source of "molasses and sugar" for settlers, especially in the early stages of their arrival. The butternut tree was useful as well as a food source, and for its wood for building and as a dye. An extract of such dye was used as a "cathartic." Beer was made from the essence of spruce. Gin was made for use as a "diuretic" from the berries of the juniper tree. "Medical virtues" were also found in extracts from the prickly ash which Gourlay claims was a source for the cure of rheumatism. Fence posts and cabinet materials were derived from the wood of the red cedar.

Apart from other products mentioned in preceding references are sarsaparilla, spikenard, gold-thread, elecampane, lobelia, bloodroot and ginsing. Snakeroot (indigenous) was used by the Indians as a remedy against snake bite. Other indigenous plants listed by Gourlay consisted of spearmint, hyssop, wormwood, wintergreen, water-cress, penny-royal, catnip, plantain, burdock,
horehound, motherwort and mallow.

As R. A. Yarnell notes in his research on native plant utilization in the region, numerous other plants provided a wealth of cures for aboriginals, but the knowledge of such resources has, for the most part, passed into obscurity.  

Grasses

Those listed include lucerne, red clover, foul-meadow, timothy and herdsgrass. Wild rice was plentiful in the Detroit region — Gourlay notes that the Indians sold it to the settlers who then used it in puddings and other "modes" of cookery.

Soil

The soil in the Detroit region was adaptable to growing flax, and gardens grew extremely well. Weeds did too. Gourlay stated that many weeds, including the European Thistle, were transported from Europe within bags of seed grain.

Considering his narrative in terms of resource use and the theme of this paper, it is interesting to point out his opinions on "preservation measures" for sugar maple. He claims that with "some manner of preservation" a much more lucrative production of sap would have been attained, if only the population were not so ignorant to such procedures

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and methods.

Although Gourlay lists a few plants that were known to be useful as medicine, many more existed. A few settlers brought with them some knowledge in the use of plants as medicine from the Old World. However, Yarnell states that there was little knowledge of such plant-use gained from European-Indian contact. Hence, even though the settlers used a few medicinal plants that were oriented to curing specific illnesses, they were unaware that these, and many other plants, had been used previously by the indigenous Indian culture.²⁰

Similar to Gourlay’s Account in some ways is William McCormick’s manuscript of 1824 which lists the benefits of settlement in the Western District, in less statistical form.²¹ Evidence of resources from each of these narratives overlaps in terms of fruits and vegetables, etc., however, McCormick’s work graphically defines the abundance of wildlife, fish and timber resources and the natural beauty of the district. Like Howison, he stressed the navigability of the region’s waterways noting that the water was so clear

²⁰ Yarnell, Plant Utilization, 44.
that fish could be seen at a depth of fifty feet.

B. Products of the Land

The land around Lake St. Clair is defined as low and marshy - suitable for grazing - not agriculture. The high land is described as being covered with fine timber with a market potential for buildings, fencing and fuel. Timber species are listed as in Gourlay's Account. Sugar maple "produce" is described as being equal in quality to that of the West Indies.

Produce per acre is listed: wheat - forty bushels, potatoes - two to five hundred bushels. Tobacco and hops were of good quality. Grapes were predicted as being an important article of commerce if proper cultivation techniques could be implemented (in the later nineteenth century, McCormick's Pelee Island would become a major growing centre for grapes - the structural ruins of this enterprise are still visible on the island).

C. Wild Beasts, Fowls and Fishes

McCormick's inventory of species in his 1824 journal is interesting in that it points out their fur value: bears 20/ (7), deer 5 shillings, raccoons 2/6. Wolves, foxes and wild cats (Lynx) are noted as rare in the settled area. The wolf, considered by McCormick to be a "sly, thieving animal", is worth 5 shillings and a bounty of 20 shillings was in place at this time, to cut down the wolf population
due to attacks upon domestic farm animals. Black squirrels are an excellent food source and it is noted that the shooting of them provided good sport.

Amongst McCormick’s list for smaller fur-bearing animals were otters, fishers, mink and muskrats — all of which he considered valuable for their fur. Notably absent in all parts of the county though, is the beaver.

Avian species included turkeys, pheasants, grouse and quail, all of which are noted as plentiful and an excellent source of food. Other avian species consist of eagles, turkey buzzards, ravens, crows, hawks and owls.

McCormick stressed the vast numbers of geese and ducks, specifically in the St. Clair River region.

Why the absence of passenger pigeon, in McCormick’s inventory? Oversight is a possibility, but highly unlikely. There may be other factors — because there were such large numbers of these birds he may have considered it too commonplace to add to his manuscript. A second hypothesis is that the species may have been exterminated regionally by the date of McCormick’s writing in 1824. Possibly his intent was to leave such a species out of his inventory. He may have considered such birds unfavourable to his reasons for writing the manuscript — although he includes information for the presence of wolves and foxes. Passenger pigeon was an easily accessible food source, hence it would
have been beneficial to early settlers.

Extermination of the passenger pigeon can likely be ruled out for this early date. McCormick lived only a few miles south from one of the great gathering places of the pigeons – thus Pigeon Bay. My research indicates that the flight of these birds was at its greatest in the migratory seasons of the 1850's. Their presence would have been difficult, if not impossible to ignore in 1824.

**Fish: First Records**

Vast quantities of fish are confirmed through McCormick's writing; the inventory includes species available presently but in largely reduced numbers - sturgeon, trout, whitefish, pike, catfish, black and white bass and "a variety of inferior fishes." The commerce of fish was profitable at this date. Whitefish and pickerel were sealed in barrels and sent to the United States market.

A more extensive review of fish resources follows in this thesis.

**Game Laws: A Comment**

McCormick stressed that "it may be well to remark that there are no game laws in this Country so that every man may use his guns among all kinds of wild game."[^20]

The fraternity of hunters in the region must have taken advantage of an absence of such laws, for numerous species were exterminated by the mid-nineteenth century. Concern for the introduction of game laws comes from references in John Prince's diary for the 10th of March, 1845, as an example. Excerpts note various concerns some ten years after McCormick's writing, for the techniques of hunting and fishing and the considerable destruction of the region's faunal resources through such illicit practices. Prince had attempted numerous forms of legislation over the years to preserve wild fowl, to prevent trapping of quail and grouse, to prevent torch-light night fishing and to prevent the shooting of deer through entrapment in the waters of lakes, rivers, ponds, etc. Prince also attempted unsuccessfully to advise the Indians to give up hunting and attend to agriculture.

Summary

The sketches which have been introduced here were primers for settlement. They provide a literary portrait of a land abundant in natural resources and space. Although population pressure and over-hunting had applied stress to some specific resources in the regions covered by this

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thesis, there was as yet no excessive alteration in most resources or in the physical pattern of the landscape.

By the turn of the 19th century, a new settlement strategy was about to be implemented. In essence, the new frontier was being prepared for its European occupants. The government was inclined toward substantial but orderly growth. Incentives were being continued to assimilate aboriginals to an agricultural way of life more sedentary and less nomadic. It was hoped by the whites that this would alleviate settlement and land claims friction between natives and the new European arrivals. Survey and settlement were to proceed together in a predetermined fashion.

E. Surveys: The Grand Design

Military surveys laid the foundation for the territorial organization and settlement of the province. The transformation to a new landscape would result.

Yet resources had not been fully assessed. Topography, hydrography, soil conditions and accessibility were not considered in priority to the prescribed method of rectangular survey. Nonetheless, the surveyors recorded the terrain, rivers, wildlife and other elements of the resource base as they surveyed. A sample of regional documentation is presented here:

The records of Abraham Iredell, 1798, provide a description of topography along the north shore of Lake Erie
near present Rondeau Bay:

The high ridgés is handsome land as I ever seen in the country, and will make a fine settlement when given out...the land in Harwich back of Rondeau Bay is beach land in general, but good soil...the marsh and low ground would hinder settlement; no road could be had there in the summer.50

Drainage technology would modify the local landscape some fifty years later, but the above description was fitting in the late 18th Century. Today, there are numerous farms growing cash crops in this area and a major highway bisects the township boundary.

To the east of the Detroit River, Thomas Smith recorded the present Essex County region:

April 26, 1805....the land on both courses timbered and soil excellent, but the water bad. 
....April 27th. continued the 2nd Concession line to Lot 10. Crossed the Big Marsh with difficulty, the water in some places three feet deep a quagmire, apparently having been a lake at some early period. Timbered with walnut, cherry, elm, lyn, hickory and oak...a very handsome situation, the land being light and stoney.
April 30th. Close temperature, the needles don't traverse. The men employed in patching their mogasins. 
May 1st. Thickety haw bushes, prickly ash, and the marsh from post #8 is north west. Abominable place to go through, in some places a pole may be sunk 25 feet.
May 19th. Came on to rain, the men got very uncomfortable. Peeled bark and made a shelter.
....The chainmen complain of scalded

50 Fred Coyne Hamil, The Valley of the Lower Thames, 1640 to 1850 (Toronto 1951), 27-28.
feet. Ordered them to make a strong white oak ooze to bathe them.\textsuperscript{31}

The difficulties of the province's surveyor-mappers are dramatically displayed in their correspondence. Smith's journal is no exception. Interesting to note is the May 19th excerpt which reveals the use of bark for shelter, as well as the use of a root-herbal remedy for foot lesions. In another journal, Smith describes sections of the Essex region as uninhabitable with "extensive morasses and perilous places ruinous and stagnant."\textsuperscript{32}

In 1790, while surveying from Lake Erie to Lake St. Clair, Patrick McNiff lost several of his crew to malaria-related disease.\textsuperscript{33} His military survey notes from Point aux Pins to the Detroit River in the same year suggest that no settlement could be made to "front" on the lake.

A sketch included in Abraham Iredell's journal illustrates not only a portage on the peninsula of Pelee, but notes several "cabins" and an Indian cornfield -

\textsuperscript{31} Journal and Field Notes of Thomas Smith, 1805 in \textit{Survey Letters}, Ontario Department of Lands and Forests, Reel 8, 2.

\textsuperscript{32} Smith, \textit{Survey Letters}, 3.

evidence which confirms Indian settlement and the growing of crops as late as the turn of the century in the region.³⁴

During the 1790's, after several surveys had been attempted in the western basin of Lake Erie, it was soon recognized that the forests of Point Pelee would be an important resource for the military, as a good supply of timber suitable for masts and rigging for the British fleet.³⁵

Anxious to protect such forests from damage by settlers and to ensure an adequate supply of tall, straight wood, particularly white pine, the British government stipulated in the preamble to the conditions of land grants that trees suitable for masting for the navy, especially those growing along rivers, should be reserved. During the 1800's, damaged British war ships frequently utilized white pine and white oak from the hardwood forests of nearby Rondeau peninsula, the southern portion of which had been declared a naval reserve by Lieutenant Governor Simcoe in 1795.

While establishing the international boundary survey of the western portion of Lake Erie in 1819, David Thompson described the islands of the lake, the Detroit River islands, and their flora and fauna. Pelee Island was memorable:

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³⁴ J. G. Battin, Land Use History and Landscape Change, Point Pelee National Park, Dept. of Geography, University of Western Ontario, (London 1975), 96.
³⁵ Battin, Land Use History, 93.
Kept up in my tent all night as this island is nothing but a pestilential marsh on the level of the lake surrounded by a ridge of sand made burning hot by the sun and the marsh full of rattlesnakes and black snakes the latter being very large and bold. We have twice seen them coming some distance from out in the lake with fish six inches long in their mouths. The rattlesnakes are also large and fat."

It seems that sandspits such as Long Point, Rondeau and Pelee Island were havens for poisonous snakes. Numerous diaries from the turn of the century note that camping in these areas was to be avoided.

Thompson also noted the incidence of fever related diseases that he associated with the swamp; many of the islands, notably Bois Blanc, are described; some of his men, including the surgeon, die of the "fever" while camping here. They believed that swamp gas seen at night was a culprit in regard to their ailments, but it may indeed be that the mosquitoes associated with this damp terrain were the true cause of their malaria-related fevers.

In 1811, Colonel Thomas Talbot assigned his close friend Mahlon Burwell to survey what is now know as the Talbot Road. Due to the hostilities of the War of 1812, the survey was interrupted until 1816, when Burwell proceeded to survey the Essex Region, documenting prime forest areas, as

well as poorer land. Much of the information derived from
the survey notebooks illustrates a land rich in resources
waiting to be "harvested" by an eager European population."*

Although the term "conservation" was a word absent in
the nineteenth century vocabulary, there were individuals
who foresaw problems lying ahead. One such individual was
Burwell; he condoned the wise exploitation of the forest,
but his opinion fell upon deaf ears. It was he who
suggested that the remains of "an old Indian fort" located
near his home be preserved by the government "for future
people to see." This property is at present under the
jurisdiction of Parks Canada, and is one of the few
remaining cultural resources depicting prehistoric mounds in
southwestern Ontario. Now known as the Southwold
Earthworks, it is located near the north shore of Lake Erie,
close to Iona, Ontario.

Summary

Although the land surveyor was mostly concerned with
laying out precise property boundaries, he documented much
of the data that we now have for resource studies throughout
history on a regional scale. This exploratory mapping was
intended as a record - not as an interpretive tool;
nonetheless the maps and notes can be of assistance toward

* Fred Coyne Hamil, The Valley of the Lower Thames 1640 to
1850, (Toronto, 1951), 112.
contemporary resource management, illustrating what plant species grew naturally best, where, and in what quantity.

The nature of the land had been observed.
CHAPTER III

The Changing Landscape in the Nineteenth Century

1. Clearing the Land
2. The Primary Resources: Timber and Fish
   A. The Great Forest
   B. Forest Exploitation: A Local Perspective
   C. The Technology of Exploitation: The Mill
   D. Local Settlements and Resource Exploitation
   E. The Lumbering Room
3. Fish
4. Land
   A. Wildlife - Hunting and Fishing: Destruction of Once Abundant Species
   B. A Context for Regional Agriculture
   C. The Wheat Staple
   D. The Visual Settlement Pattern and Land Modification
   E. Transportation and Resource Use
   F. Farm After 1850
   G. Drainage: An Example of Technology and its Effect Upon Resource Exploitation in the Nineteenth Century
   H. Conclusion
1. Clearing the Land

Significant transition in the landscape began after the earliest European settlers were granted Lots by the British Crown. By 1798, allocation of land required by statute:

that improvements such as building a house 20 feet by 16 feet be undertaken within a year and that within two years half of the 66 foot road allowance be cleared and five acres be cleared, fenced and planted.¹

To support my theme here I cite that the impetus for the regulations as well as for the attitudes of the settlers, was the need to clear imposing and hostile forest. Conservation of wetlands, forests or streams was not considered.

The decline of the fur trade at the turn of the nineteenth century deprived settlers of an important source of income and prompted a search for new sources of incidental revenue. The production of pot-ash, oak staves, planks, and boards became one method of acquiring a spendable income. As a result, by 1850 much of the land in southern Ontario was cleared.

The first immigrants approached the new forest in Canada with an old attitude that prevailed in Europe, the forest would have to be cut away to provide a proper living

environment. This ideological predilection fuelled the motivation to exploit the by-products of the clearing process in order to reap monetary benefits.

As a whole, the pioneers approached the task of clearing the land with a high degree of hostility towards the forest resource. Having purchased the land, the backwoodsman first erected a log cabin, and then began clearing. If the holding was covered with the common hardwood or mixed forest, he would cut out the underbrush and chop down the trees. Sometimes he felled them into long wind rows which were fired as soon as the flames could be controlled. Generally it was considered wiser to cut the trees into logs, or cut the charred remains of trunks into piles at a logging bee, and set them on fire during the traditional communal gathering of neighbours. Cleared land was viewed as a badge of progress rather than a waste of resources, and survival rather than conservation was the criteria.

Catherine Parr Traill vividly described such a logging bee in 1835. Timbers were chopped into lengths and "drawn" together in heaps with the use of oxen. She described the resulting fire as "communicating" with the forest, sometimes running for hundreds of acres. With such an abundance of

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woodlands at their disposal, few settlers imagined that the resource would be depleted at such an alarming rate. Man, Catherine Traill notes, appeared to contend with the forest as though it were his greatest enemy. He indiscriminately cut down saplings as well as older trees.

A specialized class of labourers — woodsmen — assisted settlers for pay. Their duties included pot-ash making, clearing, logging, burning, and fencing. Clearing was a back-breaking task which observers sometimes failed to appreciate, as Anna Jameson’s questioning of a Chatham area farmer in 1832 makes clear:

I have a farm hard by — in the bush here. How large is it? One hundred and forty acres How much cleared? Five or six acres — thereabout. How long have you been on it? Five years. And only five acres cleared? That is very little in five years. I have seen people who had cleared twice that quantity of land in half the time... He replied with fierceness — Then they had money, or friends, or hands to help them; I have neither. I have in this world only myself and trees there. See what he’ll make of it. You may swing the axe here from morning to night for a week before you let the daylight in upon you.³

Clearing land was sometimes simplified in areas previously settled by Indians. For example, abandoned

Indian clearings at Southampton, Goderich, and along the Thames River needed little preparation for ploughing. In 1825, not more than 150,000 people lived in Southern Ontario and most land was still forested. In the next forty years the forest was cut, settlement spread north to the Shield, and the settled agricultural landscape of southern Ontario emerged. It is estimated that some 600,000 immigrants from the United Kingdom arrived in British North America between 1825 and 1846. By 1842, Upper Canada’s population tripled to 450,000, and more than doubled again by 1851. Most newcomers were Irish. In 1829, it was estimated that English immigrants comprised 20 percent of the arrivals at Quebec, Scottish another 20 percent, and Irish the remainder. These proportions remained about the same for the next twenty-five years.

In Essex County, poorly drained areas of land and isolation from eastern economic source points hampered settlement in the 1820’s. By contrast, accessible areas and well drained sections continued to be more and more populated.

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In Sandwich, John Prince in 1850 by example became frustrated with attempts at successful commercial agriculture and became a "landowner" who engaged in land speculation and rented out his land on shares. ¹

Summary

Various approaches to the land are observed in the historical sketches and traveller's accounts of the early nineteenth century. Some backwoodsmen looked to the land with a psychological restlessness which restricted them only to clearing it. These pioneers made poor farmers; after clearing their acquired property they often sold out to a "refined" type of pioneer who had little desire for the backbreaking task of clearing land but was trained more thoroughly in proper farming techniques. In turn, the backwoodsman would acquire a new plot and begin clearing once again.

In whatever capacity the early pioneers approached their purchases, they were all here to exploit a primary resource: cheap, plentiful and rich land.

The Scottish, Irish, British and French in the new Canada succeeded in adopting to frontier conditions, and soon brought rapid change through the process of clearing. On average, trees and underbrush were cut and burned at a rate of two to five acres per year in the early nineteenth century.

¹ Johnson, Agricultural Development, 143.
century." The immigrants cut away the forest canopy, bringing about a change in the physical character of the landscape and opening new avenues for the exploitation of resources in their newly settled land.

2. The Primary Resources: Timber and Fish

A. The Great Forest

Anna Jameson, one of the last persons to have the opportunity to experience it, described the great primeval forest which covered much of southwestern Ontario in 1839.10 The seemingly interminable line of trees, a boundless wilderness with its mysterious depths and "multitudinous" foliage as yet unmolested, had a profound impression on her. The unbroken silence filled her with a great feeling of solitude. Not only sunshine but the daylight as well was excluded in some areas of the deep forest which were shrouded by a perpetual canopy of walnut, beech, basswood, oak and maple. Other contemporary voices captured a similar sense or feeling of solitude. David Wilkie stressed the unnatural and powerful silence that "reigned" throughout the forest.11

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11 Jameson, Winter Studies And Summer Rambles, 95.

Samuel Thompson described the wind in the trees as a low, surging sound, like the moaning of breakers in a calm sea.\textsuperscript{12} In 1841, Richard Bonnycastle noted that the forest was a "horrible place" of infinite loneliness.\textsuperscript{13} There can be no doubt that for those from the Old World who had to make their homes in the forest, it meant much work.

Of course, the forest as a whole was not the dense continuum that Anna Jameson's partial description suggests. There were always gaps, caused by soil conditions, storms, and other natural factors, including fires once kindled by lightning, or by Indians.

The equilibrium of the primeval forest first began to give way as military trails and supply roads were cut through during the conflicts between the British and French. During the century and a half that followed, the density of the forest collapsed under the onslaught of settlers and lumbermen. Between 1776 and 1836, giant oak trees were felled for use as masts, spars, and hulls in the British navy. Trees at Pointe aux Pins, the present Rondeau Provincial Park, and at Point Pelee, were reserved and exploited for this purpose. Cut off from continental sources, during the Napoleonic wars, Britain encouraged


North American timber suppliers through preferential tariffs, to cut and square red and white pines for export to the United Kingdom for resawing there. During the 1850's, when Britain changed its trade policy and Canada signed a reciprocity treaty with the United States, the saw-log industry grew at a tremendous rate as American markets replaced British.\(^{14}\)

The forest that repelled some and impressed others covered the whole of what is now Ontario. Along the north shore of Lake Erie were stands of chestnut, tulipwood, paw-paw and sassafras. In the well drained plains of Southern Ontario - sugar maple, elm, beech, basswood, walnut, butternut, black cherry, red, white, and bur-oaks predominated but the area was soon to be opened up for settlement and the practice of agriculture.

Many immigrants had envisioned the forest as a romanticized version of the English woodland, with clearings, patches of sunlight, and towering trees. In their minds-eye they had carpeted the forest floor with flowers and populated the trees with songbirds. But this image was soon to be shattered by the reality of survival in the oppressive silence of the forest.

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Farmers depended heavily upon the forest as a source of feed for livestock, and as they cleared the land, they cut timber for fuel and furnished themselves with ready money through the resulting by-products of felled trees.

Later in the century, it was realized what a mistake it had been to devastate the forest cover. For example, winter winds blew away the protective snow cover from the wheat fields, killing the young plants and blowing away the fertile top soil. Winter travel became difficult; snow drifts blocked roads where once the trees had provided a natural barrier to the winds. Ironically, the situation was at times reversed — snow would be piled upon roadways by travellers, in order to provide for sled travel.

By the latter half of the nineteenth century, it was realized how much of the forest resource had been wastefully cut. Much of the exposed land was not suitable for farmland. Where agriculturalists had once viewed the farm and forest as mutually exclusive, it was now understood that windbreaks and woodlots were essential to a successful farm. In addition, for proper water drainage, forests were now considered a necessity in the regulation of the flow of water.

As an example of deforestation and its effects upon the land and its human occupants, I have provided a description of approximately seventy five years of forest exploitation.
within a definitive setting – the south shore of Lake St. Clair, the eastern parameters of the Detroit River, the northern shores of Lake Erie to the Point Pelee region, and the interior sections of the present Essex County.

B. Forest Exploitation: A Local Perspective

The lumberman was:

the architect of a strange raw world... whatever his faults, he was a trail blazer, opening areas inaccessible to the settler, for settlers and colonization invariably follow in the wake of the lumbermen, who may indeed be styled the pioneers of civilization and development.  

A good deal of lumber was shipped from the Detroit-Essex County region in the last quarter of the nineteenth century; products of field agriculture and of the forest comprised some three quarters of the total exports of Upper and Lower Canada. This had profound implications for the landscape in the environs of the Detroit River.

Generally speaking, two major and distinct types of operation can be recognized in Canadian forest exploitation in the nineteenth century: the use of trees for squared timber and the use of trees for saw-logs and thus planks and boards. Cutting, sawing and exporting forest trees had an impact both upon the visual landscape and upon the spatial

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17 Wood, Landscape and Settlement, 78.
pattern of settlement and transportation. Along the most efficient routes for shipping and processing logs and sawn lumber, this enterprise established mill-oriented settlements and investments in railways and river improvements.17

C. The Technology of Exploitation: The Mill

Three types of mill may be distinguished. The first was the small saw mill of the countryside, cutting local supplies for local consumption and built about the same period and with much the same communal methods as the first blacksmith shops, the food-processing grist mills, and churches of the new settlements in the Detroit area. Second, there were saw mills cutting deals for the English market. A "deal" was a plank three inches or more thick, suitable for resawing in England. Finally, there were saw mills used specifically for commercial lumber production, chiefly for export to the United States or for consuming urban centres at home.18

By 1850, of the 1,567 mills in Upper Canada, 154 were steam. Confined to the counties which had no export trade, they were probably of the local convertible grist mill and saw mill type. After 1851, they increased rapidly, and by

17 Wood, Landscape and Settlement, 79.
18 Pegg, Fur Trade To Farmstead, 54
about 1875, steam was the more common motive power; few
water mills were used after this period.

Although reference is made to the general location
of saw mills during the early and mid nineteenth century in
the Essex County region, specific locations are difficult to
ascertain. Some of these mills were "convertible"
gristmills, being no more than two grinding stones and a
frame for processing grain, or a saw for processing timber.
Water, wind, and even saw mills had been a familiar sight
along the Detroit River. Mills were used for grinding
grain, and later for use in timber processing. Some were
tower-shaped buildings about thirty feet high and twenty
feet in diameter. Roof types on some wind mills were
conical and to these were attached long arms or wings fixed
to an axle fitted with small sails. During this time it was
necessary to obtain permission to build a mill from the
Commandant at Detroit. A group of settlers from Petite Cote
for example (July 1, 1780) requested — and Commandant De
Peyster authorized the construction of a water mill on La
Riviere aux Dindes. Later it came into possession of J. B.
Fere and was known as the Fere Mill. A map by A. Iredell,
July 12, 1797, makes note of a wind mill owned by James Baby
elsewhere and earlier in the area of the present Olde
Sandwich Towne on the Detroit River waterfront.
The surveyor's notes of the late eighteenth and early nineteenth century list potential "mill seats"; specific locations suitable for future mills. One such record is the diary of Thomas Smith in his survey of the division of Colchester and Gosfield Townships for 1806. Listed is a mill-seat on Lots 33 and 34 in Gosfield at Cedar Creek. It is probable that his site became what is known as the "Park" saw mill.\textsuperscript{17} A mill is also listed as being located on Lot 18, Concession 2 of Colchester Township (north of present highway 18 between Cedar Creek and the Arner Townline). Both of these references may represent the location of the same site, that of a very early saw mill said to have been able to produce small amounts of lumber for many years. Even though John R. Park owned a saw mill quite early in this area's history, he was not part of a large lumbering business. In Park's day, a saw mill was a small, local business that served the surrounding community sawing wood for barns and buildings, and making use of the trees that were cleared from the land. Over a period of time, the lumber would be stockpiled until there was a surplus amount to export from the area. As a result, the records of shipments appear to be large. However, these shipments were not a common occurrence until later in the century.

\textsuperscript{17} Thomas Smith "A Survey of the Division of Colchester and Gosfield Townships, 1806, in Archivaria, 1981, #12.
Prior to 1840, there is little record of sawmills in the county, although it is believed that Park's saw mill was operating in 1838. Nonetheless, the convertible mills would, in all probability, have been used in several areas where forest cover was being cleared. These would have left little trace of location and it is likely that only a few records relating to these structures have remained.\textsuperscript{30} Archaeological investigation would be one feasible method of verifying the existence of milling activity.

For the purpose of this study, it is important to note that to the early settlers, the land seemed bountiful and resources unlimited. By the end of the 19th century, this proved to be a deception. During the earlier period in the Essex region, for example, black walnut, oak, hickory, maple, beech, butternut, chestnut, and 1yn (white ash) existed in great quantities county wide. While it was true that trees provided wood for homes, heating, and cooking, it seemed like little compensation when compared with the work of felling, stripping, sawing, burning and stump removal. The burning Bee of timber, when there was no market for wood products, was a common sight regionally, similar to the activity that Catherine Parr Traill described further east in Ontario. The Bee remained as a social "sport."

\textsuperscript{30} John R. Park Homestead Collections, Essex Region Conservation Authority File.
Farmers in Essex and area would use their idle time in the winter to carry on lumbering activities; consequently, it only occasionally interfered with agriculture. The timber was used locally for construction by the farmers themselves, much of the remainder being burnt off to produce pot-ash or for fuel. Some people relied upon cutting firewood for the steamboats for the Detroit market for their livelihood rather than on agriculture. An advertisement in the Upper Canada Gazette in March 1805 asked for "300 cords of firewood wanted at post to be delivered on contract." Through the 1850's, lumber and staves were becoming an article of trade, especially as major markets were being formed nearby.

D. Local Settlements and Resource Exploitation

I have included the sites of Union and Albertville as examples of settlements that evolved and declined as resources were depleted, and as technological change took place throughout the region.

Albertville, once known as Gosfield, prospered as a chief shipping point along the north shore of Lake Erie in Essex County. In the absence of suitable harbours along the north shore, grain and other produce were brought to the beach, loaded on to floaters, then taken out to deep water and transferred to sailing vessels. Imports were handled in similar fashion. Early maps list Albertville as having a
general store, public school, log church, hotel, boot and shoe shop grist and saw mill, and tannery and blacksmith shop, where furniture and caskets were made.\textsuperscript{21} The settlement once existed on the lake two miles west of Ruthven on the present Highway 18. Albertville's importance diminished because of the shallowness of the water. Union, south of the present Ruthven, then became the primary port. Boats could dock here easily because of the depth of the water. Logs of maple, oak, and walnut were exported for construction of British ships. Some physical remains in the form of a dock were still visible in the 1940's. Much cordwood was loaded here as well; oak staves and bolts for the Detroit market, white ash and hickory for the Canadian handle manufacturing market, and walnut for Canadian furniture factories. But with the arrival of the railway in South Essex in the late 1880's, the importance of Union as an export centre diminished.\textsuperscript{22} The railroads not only made the transportation of lumber more economical, but also created demand for timber in the form of railroad ties and cordwood necessary (for fuel). During the winter months,

\textsuperscript{21} Pegg, \textit{Fur Trade To Farmstead}, 57. Also see JRPH Collections, Essex Region Conservation Authority Files, and J. H. Beers, \textit{History of the Great Lakes}, (Cleveland, Ohio, 1972).

\textsuperscript{22} JRPH Collections, Essex Region Conservation Authority Files. Also see Pegg, \textit{Fur Trade To Farmstead}, 109, and J. H. Beers' \textit{History of the Great Lakes}, Cleveland, Ohio, 1972.
farmers continued to cut timber for export, thus furnishing themselves with ready money while they cleared their farms. Amherstburg records report that in 1844, 45,000 pounds of staves, 50,000 feet of black walnut timber and 300 barrels of potash were shipped from this port. In September 1849, the schooner Ellen Park carried to Montreal 3,996 staves, 59 barrels of potash, and 4,300 feet of lumber. "In 1858, 50,000 feet of walnut and 39 barrels of potash were exported from Amherstburg, as well as 46,000 feet of walnut from the port of Kingsville."^3 The trade in staves had begun in the Western District in the early 1830's, and became a principle export by the 1840's and 1850's, primarily from Colchester, Gosfield, and Mersea Townships. The staves used in barrel production ranged in price from $30. to $40. per thousand while West Indies staves sold from $10. to $15. per thousand. Barrels of potash were also shipped along with staves. ^3

While some trees of Essex County were disappearing as exported lumber, steam engines, foundries and kilns also

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^4 W. H. Smith, Smith's Canadian Gazetteer (Toronto, 1846), 39.

^5 Smith, Gazetteer, 39.
consumed many acres of forest. A single steamboat consumed 10,000 cords of fuel in one season. Park and Company and many other enterprising individuals who owned docks which lined the shores of local lakes and rivers, provided wood for passing steamers. The demand for cordwood was so great that by the 1860's, after only a few years of industrial expansion, fuel along the navigable waterways of the Great Lakes was expensive and scarce. The resource nearly exhausted; coal began to replace it as an economical alternative.

Furnaces also consumed vast amounts of hardwood. Many crews were employed during the winter and spring months to cut and char wood in kilns. Charwood was produced by piling split hardwood in spherical piles shaped like beehives and then covering them with leaves and clay. The wood was set afire through an opening at the top. The mound was allowed to burn very slowly with several air holes left at the bottom to control the fire. Approximately two weeks was required to char a small mound while a kiln 30 feet in circumference burned for one month.²⁶

Twenty-five cords of hardwood were required to produce 1,000 bushels of charcoal.

Patrick Shirriff noted in 1835 that the Gosfield Furnace consumed 200 acres of hardwood annually. While the export of lumber in the 1830's was primarily in the form of cordwood and square timber, sawn lumber became a prime export product as more advanced saw mills were built. By 1840, there were six saw mills recorded in Essex County. These were located in Amherstburg, Kingsville, Gosfield and Sandwich Townships, and on Cedar Creek in Colchester Township, and on Sturgeon Creek in Mersea Township. By the 1860's, saw mills were established in increasing numbers, which in turn fed the exploitation-for-profit process. In addition to mills at the older centres such as Windsor, Sandwich, Amherstburg, and Kingsville, enterprising men built new ones around which little villages grew, forming much of the county settlement pattern for the century.

Ruthven is one such example. It contained a saw mill and general store in the 1860's. During the same period, Major T. M. Fox was the proprietor of a saw mill in Wheatley. Prior to 1852, the Ouellette family operated the first steam saw mill and grist mill in Rochester Township. Several years later another mill was established

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Pegg, Fur Trade To Farmstead, 59.

JRPH Collections, Essex Region Conservation Authority Files.
in Belle River by the Van Orden family; it burned in 1868. By 1860, Kingsville had dock facilities that transported lumber products from area sawmills to markets. A dock built in 1867 at Colchester also made this tiny community an important port for shipment of grain and lumber for twenty years.  

Lumbering activities were not restricted to the mainland. The first settlers of Pelee Island, the McCormick family, also realized the value of the timber that grew on the island. Hickory and oak stands were discovered on the high ground, and elm, basswood, maple, mulberry, cedar, and ash were found elsewhere. In the early 1830's when William McCormick first moved to Pelee Island, ready cash was obtained from the cedar and oak timber for shipment and firewood. In 1836, a saw mill was erected at the southeast end of the island, appropriately known as Mill Point. Red Cedar railroad ties were cut for shipment to Cleveland and other American ports. Huge oak timbers, sometimes more than two feet square, were shipped to Europe for shipbuilding. After William McCormick's death in 1840, Alexander, the eldest son and executor of William's legal will, took it upon himself to ignore the stipulations of the Will and to

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Pegg, Fur Trade To Farmstead, 57, 88, and 94.

Thaddeus Smith, An Historical Sketch of Point Au Pelee Island and Its Early Inhabitants, (Amherstburg, 1879); also see R. Alan Douglas, A Sketch, 1980, 9 - 12.
sell land and ship timber, practically exhausting the forest resources. A company from Cleveland, Ohio who purchased land from Alexander brought tenants to the island to clear land, cut cedar, and ship logs. By the 1860’s, most of the finest square timber – oak, and red cedar had been cut and shipped away.

E. The Lumbering Boom

While areas bordering the water routes in the region had been settled in the early 1800’s, the "rear" lots of many of the townships in the surrounding counties that were remote from roads and water transportation, were settled much later. In the 1860’s these interior areas were still heavily forested. People gradually moved to these unsettled areas, and the struggle to clear the land began once more. In their land clearing operations, such gigantic piles of brush accumulated that they attracted international notice; as quoted in this newspaper article:

the large fire on the Canadian side, that was so plainly visible from this city last evening proved to be the burning of a large pile of brush about eight miles east of Windsor.  

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Detroit Daily Advertiser, October 18, 1866. Also see selected articles from Detroit newspapers, 1817 – 1854, Burton Historical Collections, Detroit Public Library, 1963.
It was the railway, however, that opened the interior of the county to large scaled agriculture and lumbering operations. Such activities were previously restricted to areas which had easy access to outside markets but the railway needed locally produced raw materials such as rail ties and cordwood for fuel. Among others, William Armstrong of Mersea Township in Essex County was recorded as selling large amounts of timber for railway ties. Many were engaged in clearing woodland for the Canada Southern Railway. It was these activities, combined with an economic method of transporting lumber from the interior, that started and maintained until the turn of the century, many thriving lumbering communities.

The settlement of Essex Centre is a prime example. A resident of the present town lent this author a copy of a book written at the turn of the century (author and date unknown) generously entitled Essex Town and County: A Brief Sketch of the Garden County of the Dominion with a Description of Essex the Commercial Centre:

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JRPH Collections, Essex Region Conservation Authority Files.
Years ago sombre forests shed a melancholy shade over the useless magnificence of nature and hid in their deep shades the rich soil, which the sun had never warmed. No axe had levelled the giants of the crowded groves, whose whitened and withered limbs, blasted by lightning, contracted strangely with the verdancy of the younger growths of branches, and the profusion of wild flowers and tangled vines, which wasted their vitality upon the gloomy shades....

The fertility of uncultured nature; vegetable life and death were mingled hideously together, the incorrupt, growing up in, and receiving its vitality from the corrupt. That we say, was Essex then in preparation for the Essex of today....

The sketch continues giving a wandering description of "extensive natural resources," including sugar-cane, broom corn, and tobacco. Within seventeen years from the date its first store opened in 1873, the settlement of Essex Centre had reached town status. Few, if any developing towns grew as fast. The population growth from 750 in 1883 to over 2,000 in 1889 was carried along by the lumber industry which was reported as early as 1874 as "going full swing."

Prominent "Public Men" who came to the area in 1873 to cut fuel for the Canadian Southern Railway and to clear for railway tracks were impressed by the dense stand of woodland and the economic possibilities presented.

During the 1880's, lumbering was so intense that day and night shifts were run in the mills. Red oak and balm of

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Pegg, Fur Trade To Farmstead, 62.
gilead trees (poplar) were squared to timbers of 40 to 50 feet in a 14 inch square, then shipped to Quebec. The town of Essex had three saw mills, a sash and door factory, and a shoo factory (barrel parts), as well as seven other saw mills in the immediate district (refer to saw mill inventory for Essex). By 1891, "mammoth" saw mills were capable of preparing 30,000 board feet of lumber per day; hardwood lumber, staves, head linings, and a specially patented "coiled-hoop" was produced.

While Essex and other hamlets along the railroad route were enjoying profits from the thriving lumber industry, Harrow, Kingsville, and Leamington impatiently awaited the direct benefit of this form of communication. These locales did not experience the amazing growth of places such as Essex Centre, but products of the forest such as lumber, railroad ties, and staves could still be shipped out during the months of navigation on the Great Lakes. Prominent industries of Kingsville in the late 19th Century were mills and carriage factories. Leamington was an active trade centre for square timber, lumber and farm produce. The excellent shipping facilities of these lakeshore communities allowed such produce to be sent to various markets. The local lumbering industry reached its peak about the time of

Pegg, Fur Trade To Farmstead, 61 and Fig. 51 (a).

Pegg, Fur Trade To Farmstead, 63 and 102.
the 1881 census, at which time the county was reportedly
two-thirds forested. Numerous mills were at work cutting
whitewood (tulip), oak, ash, elm, hickory, basswood,
sycamore, and other woods for local use and for export to
the United States, where Canadian lumber was in demand for
various manufacturing and building industries. The export
of sawn lumber, ties, square oak, bolts, spokes, and
cordwood alone brought into Essex County $500,000 annually
throughout the 1880's. A shifting emphasis upon different
varieties and uses of lumber may be noted with the passing
years. The 1891 census showed square elm as having
displaced square oak from leadership in that particular
county.\footnote{JRPH Collections, Essex Region Conservation Authority Files.} The shrinking and warping qualities of elm
debarred it from construction uses but allowed it to be used
in making barrels. However, square oak as well as hickory
and maple remained of importance.

There was an increasing specialization from straight
saw-milling to more varied production during the 1880's and
1890's. Communities developed a variety of lumber milling
which included sawmills, planing mills, handle, furniture,
stave, hoop, butter-bowl, and dish-making activities, as
well as development of charcoal kilns, asheries, and soap
factories, which were all dependent on the forests.

Those desiring winter employment could find work in the lumber camps. Locally, the reported accumulation of square timber along the side of the road between the communities of Essex and Cottam suggests that cold, snowy winters, which were fairly common in the 1880’s and 1890’s, facilitated the movement of timber to local mills. There was no work in the woods during unusually mild winters; this forced families to move about the area, in search of work. When there was a particularly heavy snow fall, sleighing and log-hauling would facilitate work at the saw mills. A team, sleigh, and man received $5.00 per day working in the camps that dotted the region. Farmers would not only take logs to local mills to be sawn, but many sold timber as firewood, particularly those living near large towns. Schools, churches, halls, and large buildings, besides private homes, required many cords of hardwood to keep them heated. For the wood necessary for large buildings, tenders were usually asked, but for private homes, the coal and wood dealers provided the market. Railway locomotives also consumed many cords of wood and provided another market for the farmers. The potash and charcoal industries appeared in the interior of Essex County during the 1880’s and 1890’s. Six hundred cords of wood a week were consumed and exported to smelting

___33a__ Pegg, _Fur Trade To Farmstead_, 85.
furnaces in the United States, such as the furnace in Wyandotte. In 1881, there were thirty charcoal kilns within Essex County for example. The kilns were convenient to the railways connecting to the United States.

The number of sawmills within this county had increased dramatically during the second half of the century. In the 1880's there were twenty-five to thirty sawmills in operation which turned out lumber and barrel staves in large quantities. By 1895, farmers were hauling 1,200 logs per day to the saw milling centre of Camp Palmer, a self-contained community within Essex County, complete with blacksmith shop and general store. This camp, although little is known of its existence, in all probability would be representative of a large timber-processing settlement, with socio-economic as well as cultural interaction, that in my opinion would be worthy of historical and archaeological investigation. Another large mill was operated by David Conklin in Kingsville. During the 1890's, Conklin purchased 700 acres of timbered land to support his growing enterprise. By 1899, it is documented that he was employing over 25 persons in and about the mill, producing about two million feet of lumber yearly. Some of this production was

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used locally, but most was shipped out to Detroit, Buffalo, Toronto and Montreal. In addition to the saw mill, planing mill, and modern dry kiln, dressed lumber, mouldings, picture frames, scroll sawing, wood turning, etc., were undertaken. In 1903, the sawmilling and planing mill business were separated. The planing mill operations in Kingsville steadily expanded, becoming the headquarters for a number of retail lumber yards within southwestern Ontario.35

As part of this study I wish to express through the use of such local examples, evidence that distinct settlement patterns are detected in the County, as reflected in resource base exploitation. A review of the inventory of settlements in the County of Essex illustrates that many had a grist and/or saw mill. The following list is a sample of sites whose existence was dictated by a forest resource that virtually supported the population and produced the evolving hamlets:

**Oxley:** First sawmill in vicinity circa 1848; first attempt at clearing in the area. General store.

**Harrow:** Population 150. Steam and grist mill. Tavern, town hall (brick), stores, hotel, churches, school, general shops, carriage factory.

**McGregor:** Population 100. CSR Railway, several steam mills, store, church, trade and industrial institutions.

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35 JRPH Collections, Essex Region Conservation Authority Files.
Gesto: Steam and sawmill, shops, stores, post office.

Ruthven: Population 100, Steam, saw, and grist mills, several stores, post office.

Cotton: Population 250. Steam, saw, and grist mills, several churches, township hall, stores, shops, hotels.

Staples: Population 200 - One third French. Three saw mills and stave mills - "A town opened up a few years before, in the middle of timber lands."

Essex County Saw and/or Grist Mills

Malden Township 2
East Sandwich 2
Maidstone 3
Colchester 12
Gosfield 8 (includes Kingsville woollen mill 1840)
Rochester 3
Tilbury West 1
Mersea 5 (includes Leamington sorghum mill 1890)

- History of Colchester North, Township Centennial
- Garden Gateway

Summary

To reiterate my topic of discussion, the visual character of the wilderness had been transformed through the exploitation of forest resources. Once removed, form giving vegetational patterns revealed the bleakness in topography, once it was deprived of its natural beauty. The decline, first in timber, then in wildlife, however, did not go unnoticed by concerned individuals, as the following comments reflect.
One thing is certain that timber is every year becoming scarcer - both fencing and building timber is very scarce now. The half of the farmers on this line could not find timber enough on their land to build a barn and where the supply is to come from ten years hence is hard to tell. - M. Smart, 1885.\footnote{Canada. Parliament. Sessional Papers Of The Dominion Of Canada. Annual, Vol. XVII No. 1, 1884 - 1885, 11.}

In Mersea Township a clerk wrote in 1885 for the Bureau:

Where fields and orchards are sheltered, especially from the east winds, the effect is very marked. Where, as here, the snowfall is very light and generally of slight duration, fields protected by the forests produce much the best crops of wheat, and the orchard derives a like benefit.\footnote{Sessional Papers, Vol. XVII No. 1, 1884 - 1885, 75.}

The decline of the lumber industry was hastened by a lack of conservation although attempts were being made by the Bureau of Foresty and the Royal Commission in the early 1890's to preserve and conserve the remainder of forest cover. At first, conservation meant putting a stop to wasteful and destructive practices, and preserving what was left of the natural environment. Gradually this static ideology gave way to the dynamic conception that conservation necessitated a realization that man would have to co-exist with nature rather than impose his will upon her. In 1893, the Royal Commission broadened its policies and issued this statement:
To obtain from a forest the largest amount of product which it is capable of yielding without at the same time trenching on its capacity, will call for careful and scientific management, such as hitherto been but little practised on this side of the Atlantic.\textsuperscript{43}

The Ontario Bureau of Forestry was created in 1895. Previous to this, pamphlets and reports on tree planting and forest preservation were designed. Moreover, an education program was to be directed toward individual landholders of the settled part of the Province, where it was felt that the country was being too rapidly depleted and cleared of trees.

For many sections of the Detroit environs, the implementation of similar policies, and the diffusion of knowledge pertaining to conservation had arrived too late.

The increasing sale of mills during the last decade of the nineteenth century indicated a desire on the part of the operators to get out of the business while conditions were favourable.\textsuperscript{44} Some saw mills had flour milling machinery installed to meet the changing conditions. However, lumbering and the associated milling industries lingered in some areas of the county a while longer.

The communities that had evolved with the rapid onslaught of the lumber industry now faced the lack of a resource base; the exploitation period had been shortlived. Once again, the area witnessed, as in the fur trade era, the

\textsuperscript{43} Lambert, \textit{Nature's Wealth}, 12.

\textsuperscript{44} Amherstburg \textit{Echo}, selected articles, 1895, Amherstburg.
exhaustion of a resource.

The result dictated yet other approaches in resource use on a regional scale.

3. Fish

The Detroit River environs contain a considerable amount of water; settlements bordering waterways relied on fish resources as did earlier aboriginal inhabitants who harvested fish as a staple to their survival.

As in prehistoric times, the early settlers relied on the fish resource; ninety one different species of fish have been identified in Lake Erie. Fishing in the Detroit region became important to both Americans and British during the War of 1812 when the food supplies of the soldiers around the settlements of Amherstburg and Detroit became limited. As immigration increased, and farm produce sometimes came into short supply, local fishermen supplied fish to feed the population.28 The Indians fished by torch and canoe at night along rivers such as the Thames and fish dams were constructed on this river during spawning season:

The rivers and lakes of Canada are supplied with the greatest variety of fine fish. Sturgeons of an immense size are caught in great numbers, in many of the large rivers, and particularly the Thames. Fishes of this description frequently weigh 150 pounds and measure seven feet in length.46

All descriptions of fish noted that the fish were speared or taken with nets. At the western extremity of Lake Erie, literary sketches note that great quantities of whitefish were harvested annually; these were considered by many to be the most delicious fish in the country. It was this species, and lake herring that were considered the most important fish resource in the mid to late 1800’s. At this time, sturgeon was considered a pest; these fish were often stacked like cord-wood on the beaches when caught and burned; many of this species were also thrown into the boilers of the steam boats to be destroyed. Improper gill net tactics also destroyed much of this resource. Pickerel and Herring were caught in various parts of the St. Clair River, but it was the Detroit River that was the nucleus of activity for the early period of fishing. The principal fish was the Whitefish in this area as well; commencing around the first of October and continuing through November was the peak fishing time for this species. Barrels of whitefish were annually packed for exportation, and also sold locally. Belle Isle was a main depot for the

46 Hamil, Valley, 37.
whitefish industry. Initially, fishing as a frontier "industry", had its beginning in Detroit, following the War of 1812. Apparently, the taste for whitefish had been acquired by soldiers from Ohio, Kentucky, and a few other states. During the war, food shortages would have been critical without whitefish."

This particular species was from the Lake Erie area, and spent most of the year in the deeper eastern half of the lake. When fall arrived, the fish moved to the western end and began the run to their spawning grounds in the shallow waters of Lake St. Clair. This run would continue for two months.

For several decades after the whitefish discovery and migration in the river, fishermen took enough fish to supply the local market and the soldiers of the garrison, but few prepared for any form of export.

The huge shoals of fish passed by virtually untouched. There were several reasons for this lack of interest; the whitefish run occurred at a time when many French inhabitants employed in the fur trade had already set forth for their winter stations, leaving few in the town of Detroit with much interest in fishing. In addition, the

"Hatcher, Lake Erie, 280 - 281, and Pegg, Fur Trade To Farmstead, 36."
Detroit River was completely separated from other populated areas; the cost of transporting through a wilderness would have been prohibitive.

With the fur trade still remaining somewhat lucrative, few showed interest in fishing. But soldiers from Ohio took great numbers of Whitefish and forwarded them in open boats and schooners to various areas in Ohio. Detroit merchants soon invested money in seines and equipment, and cleared obstructions in the river. By 1830, the Detroit River area’s whitefish were being shipped in ever-increasing amounts to Ohio, Indiana, Pennsylvania, and New York. During the decade which followed the completion of the Erie Canal in 1825, thousands of easterners had migrated to the west and had settled on fertile land in Northern Ohio and in Southern Michigan. This of course expanded the fish market.

From 1836 until 1840, the catch of Whitefish in the Detroit River averaged 3,500 barrels per year and sold for eight dollars per barrel. Fish sites on the Canadian side of the River were located on Bois Blanc Island, Peach Island and on Fighting Island.\(^\text{1}\)\(^\text{2}\)

\(^{13}\) Hatcher, Lake Erie, 282.

\(^{17}\) M. C. Kilroy, "Local Historic Place Names in Essex County", Ontario Historical Society, Vol. 6, 1905, 6.
Fishing expanded greatly with the use of gill and trap nets; it was observed in 1850 that no system of fishing could exhaust the vast resource of fish in the region's waters. This optimistic and inaccurate assessment would change in the latter half of the century.∞

By 1861, the Census reflects a small percentage of the population as engaged in fishing. For example, my investigation results illustrate that only one particular lot owner in Gosfield Township is listed as being a fisherman.

Several families are noted as being engaged in fishing, and related artifacts such as nets, boats, seines, and number of fish-barrels are documented. The island's commercial fishing for this time period had become a profitable engagement through the extensive use of gill and pound nets. My comparative data reveals large numbers of fish being taken by the turn of the century. For example, on a comparative basis between Pelee Island and Essex County, it can be seen that large quantities of fish were netted seasonally:

∞ Pegg, Fur Trade To Farnstead, 38.
### Pelee Island vs. Mainland Essex County

<table>
<thead>
<tr>
<th>Fish</th>
<th>Pelee Island (pounds)</th>
<th>Mainland Essex County (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herring</td>
<td>218,746</td>
<td>788,616</td>
</tr>
<tr>
<td>Whitefish</td>
<td>13,780</td>
<td>58,814</td>
</tr>
<tr>
<td>Pickerel</td>
<td>8,975</td>
<td>161,262</td>
</tr>
<tr>
<td>Pike</td>
<td>49,495</td>
<td>292,682</td>
</tr>
<tr>
<td>Sturgeon</td>
<td>12,794</td>
<td>20,873</td>
</tr>
<tr>
<td>Perch</td>
<td>5,480</td>
<td>78,917</td>
</tr>
<tr>
<td>Catfish</td>
<td>3,155</td>
<td>10,528</td>
</tr>
<tr>
<td>Mixed and Coarse</td>
<td>1,100</td>
<td>90,221</td>
</tr>
<tr>
<td>Caviare</td>
<td>1,700</td>
<td></td>
</tr>
</tbody>
</table>

**Summary**

Overfishing, coupled with the use of technologically advanced netting, soon exhausted fish resources throughout the region and statistics throughout the fisheries reports point to ignorance of, and a wasteful approach to resource exploitation. As there are no statistical fishing records previous to the *Sessional Papers* for the latter half of the nineteenth century, there exists no factual data for fish harvesting in the Detroit River environs. The harvest, however, must have been of incredible proportions.

With the introduction of a concept of conservation and resource rehabilitation, the fish resources of the region have been somewhat replenished. It seems, however, that such resources must reach a threshold point for exhaustion before measures for conservation are implemented. The late nineteenth century political structure really had no

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legislation in place to deal with overfishing, and no real method for diffusing education information to its population. Moreover, the technology for conservation-related methods in terms of forestry, fishing, etc., although becoming available, was in many cases, not financially attainable for the settlers. People simply trapped, cleared land, farmed, and fished, until an exhaustion of the resource set limits to its exploitation.

As a result, new approaches to commerce and enterprise were sought, with seemingly little regard for the protection or conservation of natural land resources.

4. Land

A. Wildlife – Hunting and Fishing: Destruction of Once Abundant Species

Like the forest, there was little concern regarding preservation. Interpretive methods in archaeology were a great help in determining the use of wildlife resources through time in the Detroit River region in terms of subsistence, tool-making, clothing, shelters, etc. The archaeological record clearly illustrates the variety of species that once existed in the subject area; many of these species are now extirpated from the area, or are extinct. For example, the passenger pigeon was described as the most numerous medium-sized bird in North America during its existence. Vast flocks appeared regionally during their
spring and fall migrations. In the 1850's, it was said that there were so many of these birds in this area that the flocks would darken the sky as they passed. Pigeon Bay, near Leamington was named after them. Disease and unlawful hunting practices soon depleted the passenger pigeon to extinction.

The number of bears in the region was documented by a Jesuit priest, Father Pierre Francois Charlevoix, who wrote in July, 1721, that "...there are a great number of bears in this part of the country, and last winter more than four hundred were killed on Point Pelee alone." 33

One may note that wild turkey species is present in many middens from archaeological sites and the following statement supports their abundance:

The white settlements were responsible for the rapidly diminishing supply of game. The severe winter weather and deep snow of 1842-43 starved the wild turkeys out of the woods, and the white people killed them in great numbers when they came into the barnyards in search of food. After this winter there were few wild turkeys for several years, although they had been very numerous before. 34

Many of the early journals report that deer were killed at salt-licks, and were hunted into small bays or lakes, pursued, and shot as they swam to escape. A bounty was placed on wolves as early as 1793; bears and wolves had, by

33 Lajeunesse, The Windsor Border Region, 43.
34 Hamil, Valley, 298.
1845, retreated to back areas where they sometimes attacked farm yards, etc. In 1839, Colonel John Prince’s Game bill in this district prohibited the killing of deer, wild turkey, grouse, partridge, quail, and woodcock during the spring and summer months and on Sundays, but this was rarely enforced. Other animals were not protected by any form of legislation, and by 1845, lynx had disappeared in this area and few beaver remained. There were, however, considerable numbers of foxes, raccoons, otters, mink, and other small animals.

It was after this date that the annoyance and loss to the farmer caused by bears, wolves and other predatory animals reached a high point. Bears would often kill pigs, tear down stalks of corn and ruin entire fields. Cattle were not allowed to run in the woods; they would be penned in when less than two years old, as the wolves could easily prey upon them.

As early as 1793, a government bounty of twenty shillings was paid for every wolf head delivered to a magistrate. In 1809, this bounty was paid for each wolf’s scalp obtained within five miles of an inhabited place. Records note that wolves were particularly numerous about

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\[\text{R. Alan Douglas, } \text{John Prince, 15 and 69}\]

\[\text{Hamil, Valley, 258.}\]
the year 1838. Shelters were constructed for sheep and numerous references report that wolf tracks in the snow were common around these pens in the farm yards.

It is evident that hunting and trapping activities provided a substantial source of both food and income for residents and visitors to this particular region. Black squirrels lived in large numbers at Point Pelee and it was once the main Sunday sport to hunt these elusive animals with bow and arrow. By the late 1800's though, the once common ruffed grouse and wild turkey had both become extirpated in Essex.

Settlers spent a great deal of time hunting and fishing for what seemed to be an unlimited supply of game. However, the small size of an area such as Point Pelee, for example, and the increasing intensity of human activity and settlement may have quickly reduced the animal population. According to one article by Jack Miner in the February 8, 1945 Leamington Post and News, deer had become scarce through the whole of Essex County by 1898 or 1899.

Nineteenth Century government documents note that by the late 1860's at Pelee, hunting for sport by both naval reserve residents and visitors from various parts of Canada and the United States had contributed to a noticeable

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Hamil, Valley, 258 – 259.
decline in the number of ducks and other waterfowl. In an
October 15, 1879 letter to the editor of the Ottawa Daily
Times a government official pointed out the "desolated
state" of the waterfowl populations of Point Pelee, Rondeau,
and the St. Clair Flats, and the urgent need for efficient
laws and an effective system for protecting the game and
fur-bearing animals. During the 1880's, numerous attempts
were made to establish a game preserve within the naval
reserve marsh. In an application to lease sections of
marshland in 1870, a Toronto citizen, C. Robinson, commented
that ducks and other game were rapidly being destroyed on
Point Pelee and noted that the marsh would be of little
value without them.

In 1891, the South Essex Gun Club expanded their
hunting preserve by purchasing an additional 2,426 acres of
adjoining marshland in Mersea Township in order to deter
poachers.

A combination of events and circumstances soon depleted
the wildlife resource. Land clearing, and timber-burning
had deprived the animals of their protective habitat, and an
increase in population brought about hunting and demographic
pressure in the wilderness areas. Nineteenth century
farming practices added to the wildlife decrease, forcing

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Pegg, Fur Trade To Farmstead, 75.

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Pegg, Fur Trade To Farmstead, 76 and 94.
the animals to escape to wilderness areas as yet undisturbed. There are isolated references to wildlife abundance however even in the mid 1850's. The Elgin Settlement records for example, in Raleigh Township, Kent County relate that over 1,500 settlers and residents of nearby Chatham enjoyed a picnic in which they dined on a combination of wild and domestic food, including venison and wild turkey (both hunted in Buxton's own forest), as well as beef, mutton, and pork.

The depletion of the natural habitat however, destroyed the food sources and shelter for numerous species, and with larger scale human settlement, the age of abundant wildlife in the Detroit River environs passed.

B. A Context for Regional Agriculture

Following the period of land evaluation by surveyors in the late 1700's, southwestern Ontario entered into a period of ever-increasing settlement. There resulted a modification of the landscape through settlement activities and agricultural pursuits. New concepts toward the use of the land resource base were considered and new agricultural practices adopted. Early settlement patterns in the study region were based upon the availability of water transportation and communication; sites for agriculture were based upon the character of tree cover in many cases, on land availability, and on costs of development for
agriculture.

Until the latter half of the nineteenth century, it appears that little concern was given to the condition of natural resources nor to their availability to withstand the effects of increased development. Clear-cutting for agriculture, coupled with the lumber industry, would remove more than two thirds of the forest habitat within a fifty year period. In addition, new drainage techniques adopted after mid-century would disrupt thousands of acres of wetlands in southwestern Ontario.

Settlement increased slowly in the Western District and population density remained scattered. Furthermore, economic development in the early 1800’s was still hindered by distance and poor communication. By 1815, more land was occupied but not cleared; from the period 1815 to 1830 clearing proceeded slowly, and by the 1830’s it had picked up sharply.

By 1871, somewhat over 30 percent of the area was cultivated, varying per township.

The prosperity of the farmer depended upon the amount of land cleared. To compete in the market place, farmers had to specialize in order to achieve commercial success. Those with sufficiently cleared land grew wheat, oats, corn and potatoes, and raised cattle, horses, sheep and pigs. Marginal crops grown by some financially secure farmers
included barley, rye, peas and buckwheat. As transportation improved in the area, tobacco was grown. It was grown in areas found to be poor for the sowing of wheat, and became useful as a crop which utilized the labour of women and children. Agricultural statistics illustrate that in 1850, 777,427 pounds of tobacco were produced in all of Upper Canada - 99.2 percent in the Western District in three counties. The breakdown per county is as follows - Essex, 457,111 pounds, Kent, 313,189 pounds and Lambton, 538 pounds. Oats, corn, and potatoes decreased in importance as the number of acres of cultivated land increased, which suggests that these were basically subsistence crops. Furthermore, the concept that the larger acreage of cleared land the more livestock raised, was the norm. Farmers were nervous in terms of risking production of even one product - wheat, although it was the most marketable commodity. Johnson argues that a modified form of subsistence agriculture, due to the lack of secure and profitable markets for livestock and produce, became the strategy of the farmers of the Western District. They depended upon a wide variety of crops, livestock, gardens, and orchards, and grew surpluses of a few crops, such as wheat and tobacco, which allowed them to purchase needed goods. Simply put, until 1850, market conditions did not allow commercial

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farming operations to succeed:

...as late as 1850, subsistence, "natural production: agriculture (in Marxist terms) the production of use of values" remained the dominant mode of production in the rural Western District. Fundamental changes in both external and internal relations would have to occur before either the independent commodity mode or the capitalist mode of production (both modes produce exchange values) could become the central organizing principle (that is, the dominant mode of production) in the creation of material goods. 

Changes in this situation materialized with the opening of the Welland Canal and improved transportation which allowed the further export of produce from the region in the 1830's and 1840's.

C. The Wheat Staple

The Wheat Staple had been considered as the basis of the provincial economy in most of the settled parts of this province. 

Although other factors were to be considered, such as sequences of economic change, the place of wheat in such change, and other complexities of economic growth in Upper Canada, wheat remained prominent as late as 1860. Even after a decade of economic expansion and diversification,

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" Johnson, Agricultural Development, 144.

half of the acreage cultivated in Upper Canada was wheat. This crop, along with barley, was traded in significant amounts. Prior to mid century, wheat had been the one crop that a farmer could sell each year. While other crops remained important sidelines, it was wheat that the farmer sold; hence he grew as much as possible. Wood considered wheat as superior to any other staple crop in terms of availability of suitable seed, the relative ease of planting this resource in the "slash and burn landscape," or in other situations, simplicity of harvesting, storage convenience, ease of transport, and consistent commercial demand.

It was somewhat risky in the Western District to depend upon the wheat market even though it was the most marketable commodity. Even the most secure farmers in the region diversified crops on their land rather than risk such dependence on one commodity.

Malden Assessment Rolls of 1847, illustrate that wheat was the largest production in bushels, in terms of grain per farm regionally and statistics illustrate abundant amounts of wheat produced at various points in the Western District and along the Thames River.\(^2\) Farmers committed themselves to growing wheat even in poor market conditions and often increased their debt. What would justify such action? The

answer lay in the prospect of relatively high returns in terms of initial wheat-growing investment. In the 1830's, there was a local market too for wheat in Upper Canada among immigrants, lumber camps, labour gangs, distilleries, urban centres, etc., and the American market between 1835 - 1838 purchased some on occasion."

The 1840's and 1850's brought further large increases in Upper Canadian population, land cultivation, and wheat output. In terms of wheat, the staple export boom appeared as a result of population and Metropolitan growth which was first brought on by increased imported of people, goods and capital."

Even though the Western District exhibits particular circumstances in wheat growing and its risks, nonetheless farmers relied upon this commodity in terms of it being an important staple during the early economic development of the region and must be included as a relevant factor in this thesis of resource use history.

D. The Visual Settlement Pattern and Land Modification

Settlement strategy involved for the early settlers, an evaluation of where best to locate. For instance, many considered that for wheat production, lands under softwood

"McCalla, Wheat Staple, 40.
"McCalla, Wheat Staple, 43.
forests (other than pine) were rich and would produce good
wheat harvests. In contrast, it was noted in many of the
settler's guides that a mixed hardwood cover indicated a
prime soil for wheat. Other settlers simply located close
to a roadway or highway which led to a market centre. Thus
we see varying methods and results to settlement based upon
resource use and availability. In many cases the result of
this settlement strategy produced a barren landscape - such
is the example for Essex County. Early land-use strategies
(which in some cases may be considered as no strategy)
created future problems for generations dependent upon the
resource base; for example, parched soil due to wind
erosion, and depletion of the nutrients in the soil as a
result of an overcleared landscape.

As a result of early settlement, the character of the
land took on a new appearance - the farmscape, with its
cleared proportion of forest canopy removed, with crops in
the field, and fences, gardens, buildings and yards. A
progressive change took place from pioneer farm through to
fully established farming enterprise.

There were three agricultural traditions in Southern
Ontario during the first half of the nineteenth century -

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Kenneth Kelly "The Impact of Nineteenth Century
Agricultural Settlement On The Land", in J. David Wood ed.,
Perspectives on Landscape and Settlement in Nineteenth Century
Ontario, (Toronto, 1976), 65.
wheat farming, feed farming, and improved farming. Each of these stages altered the resource-base in some way. Following 1850, a wider range of farm products were in demand resulting in a diversified agricultural initiative.

The pioneer farmscape included a small cleared area with most of the Lot remaining under forest cover. Fields were stumpy, untidy, and unlevelled and forest plants grew up along with subsistence crops. (One example of resource use and human manipulation remains in the remnants on these farms of snake fences created from trees felled in line along the edge of the cleared land.) Harvests were small; therefore barns were not needed. Livestock simply foraged in the woods and were rarely contained (although in wolf-infested areas young animals were penned-in."

Numerous references note sheep and young cattle contained at night in areas such as the Talbot settlement, in Colchester and along the settlements on the Thames River.) From the pioneer farmscape there emerged the early commercial wheat farmscape consisting of fields irregular in shape and size. Barns made an appearance, and, with increased prosperity came more substantial frame or log houses. The problems of recolonizing by forest plants continued for over twenty

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Hamil, *Valley*, 260.
years from the early pioneering period and the only significant commercial demand was for wheat. As early as 1817, according to reports of this time period, farmers of the Lower Thames grew principally wheat and corn, along with the main stream crops of oats, peas, barley, hemp, flax, potatoes and turnips.\textsuperscript{69} Wheat in this area averaged twenty to twenty five bushels to the acre and even up to forty bushels per acre.\textsuperscript{70}

The wild range was so extensive in the lower townships in the first quarter of the nineteenth century, that no one had his own pasture.\textsuperscript{70} Products such as cheese and butter sold for about 18 cents a pound, and wool for 30 to 46 cents per pound. In 1820, John Howison reported that wheat on the Talbot Road was selling for 56 cents a bushel and 40 cents a bushel on the Thames.\textsuperscript{71} Other crops sold on the Talbot Road were rye at 50 cents a bushel, oats at 22 cents per bushel, buckwheat and corn at 38 cents, apples at 32 cents, and hay at 5 dollars per ton.\textsuperscript{72} Howison's descriptions of early Thames farmscapes fit the previously described model although he is less kind in the description of these in his

\textsuperscript{69} Hamil, \textit{Valley}, 119.
\textsuperscript{70} Hamil, \textit{Valley}, 120.
\textsuperscript{71} Hamil, \textit{Valley}, 120.
\textsuperscript{72} Hamil, \textit{Valley}, 121.
narrative, noting "ill-ploughed" fields and unpruned orchards. These settlers did not prescribe to crop rotation or tillage; their method was not due to ignorance but to a lack of capital and a difficulty in acquiring labourers - the necessary ingredients for a successful system of extensive agriculture which would result in profits.

By 1822, tobacco is recorded by surveyor Mahlon Burwell as being grown along the Lower Thames and on other land near Chatham. Tobacco had become an important staple; one reason cited was that the Western District had suffered in other crop production due to the scarcity of water-power for grist-mills, and due to ravages in crops of wheat by the "Hessian fly" at this time. Other important tobacco growing locations were along the lakeshore in Kent County, where it was exported from the port of Antrim on Big Creek, and along the Talbot Road in Raleigh Township. Dairying and stock-raising took place in the marshes around Lake St. Clair. In 1831 Major Strickland had noted cleared farms locally, and in 1836, an American traveller noted many fine fields, buildings, and orchards in the Chatham to Fairfield area.\(^3\) In other accounts many of the aforementioned crops are described as growing well along the "Ridge" in Howard

\(^3\) Hamil, *Valley*, 123.

\(^4\) Hamil, *Valley*, 130.
As successful agriculture proceeded, the cutting of the forests for export through the newly acquired canal system at Welland increased the wood and timber trade west of Long Point. It is notable that with little or no protection through legislation, many timber resources were wasted. By 1835, walnut and cherry boards sold on the Thames for $10.00 per 1000 feet and poplar and whitewood at $8.00. The local population was utilizing wood resources such as whitewood and basswood for building, and were exporting oak staves and walnut.

During the 1830's, population increased and agriculture expanded. Hamil records that the amount of cultivated land in Kent County, for example, increased from 16,128 acres in 1834 to 22,370 acres by 1837. Improvements in farming strategy occurred due to an influx of settlers from the British Isles who brought with them a more scientific approach to farming.

Wheat remained the staple crop of the country and Upper Canada was somewhat prosperous. In the Chatham area, Bonnycastle had noted that the 1844 wheat crop was "remarkable" and that farmers from Delaware to Chatham were...

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Hamil, Valley, 123 - 125.

Hamil, Valley, 134.

Hamil, Valley, 136.
"advancing to affluence" because of it.\textsuperscript{177} Previously noted crops remained important supplements in the agriculture of southwestern Ontario, as did tobacco and a variety of fruits and vegetables.

In the third decade, agricultural societies flourished. Fairs were events in which the population exhibited and viewed the abundant resources that were grown or raised in the region, and the techniques of "improved farming" were promoted.

During the 1840’s many new settlers had populated the back concessions of counties such as Kent; during the proceeding decade, small villages and crossroad settlements developed – built around central structures such as saw mills, tanneries, foundries or distilleries, grocery stores, taverns and churches. Grain warehouses to store the resources were constructed at many natural ports on Lake Erie, along the Thames, and the Detroit River and its spillways. Centralized population areas developed as a result of the resource-base and in order to exploit it. For example, Chatham developed as a principal shipping port for the products of the Thames river area, and as a milling centre for lumber and flour. Sailing vessels transported wheat and large amounts of white and black walnut deals and staves that were floated down the Thames for export. The

\textsuperscript{177}\textit{Hamil, Valley}, 247.
southern parts of the townships south of the Thames shipped their export resources and received imports through various ports. By 1850, small interior hamlets in Kent County and Essex County continued to prosper with enterprises such as asheries and steam operated sawing mills.

The upper reaches of the Thames at London were also prospering in agriculture; newspapers of the time period devoted space to surveying the region's success.

E. Transportation and Resource Use

In western Upper Canada, transportation had always played a crucial role in resource exploitation. The age of discovery and the Fur Trade era had relied upon canoe routes and walking and the portage as forms of transportation. The eighteenth and early nineteenth century witnessed schooner and steam transportation as an important method of transporting goods to market and for moving people to new settlement areas in the region. Following the War of 1812, there continued a vigorous growth in marine traffic. Canadian and American ports exchanged goods and services. Steamships were first introduced in the Detroit River in 1818 and by the 1820's these "workhorses" were in common use for carrying passengers, mail and general freight. They could operate on regular schedules, had better accommodations than sailboats and became progressively faster. However, sailboats continued to increase in numbers
and in use as they were cheaper carriers for bulk cargoes
and could easily provide local services for small ports.

Agricultural produce and forest products were loaded
onto many ships along Lake Erie and Detroit River ports in
the 1840's.

Settlement and trade obstacles declined rapidly with
the completion of the Erie Canal in 1825 and the Welland
Canal in 1829. This eased matters in allowing direct water
communication with the eastern seaboard, and freed the way
to a more efficient resource-exporting system in the Western
District. Direct communication between the Eastern markets
and the interior settlements became possible, and farmland
within easy access to the canals increased rapidly in value.
The canal soon provided a channel for both the movement of
resources and for emigration to the western area of the
province.

For a number of years the canals were unrivalled, but
the railroad era was soon to encroach upon both the canals
and the sailing vessel network. At first the effect of the
railroad was beneficial for the lake vessels; railroads
brought traffic and fed the lake tonnage. But early in the
mid-nineteenth century, the lakes were paralleled by iron
tracks, as the railroad began to probe further into areas
previously untouched by advanced transportation methods.
Glittering schemes by investors brought about "railroad
fever." It had fast become an integral part of the whole development of finance capitalism.

The Great Western Railroad was finished through Ontario in 1854; the road to Detroit traffic opened on January 27th of that year. One historian noted that the history of commerce and trade on the great lakes could be divided into two periods; the first, before railroad competition; the second, after railroad competition. 

The year round connection of Detroit and Windsor with the East took place. The area of Lake St. Clair was opened up, and development of areas such as Stoney Point, Belle River, Tecumseh, and Windsor, was increased. Cutting diagonally across the county of Essex and into the interior of Kent and other counties beyond, the railroad opened up the interior to further lumbering and agricultural operations. Backwoods settlements grew rapidly and coastal ports which suffered from the initial phase of the railroad due to its competition with lake traffic by the 1880's, were transporting their produce to newly acquired markets as they connected to the railroad. In the local context, settlements such as Harrow, Kingsville and Leamington by this time, were benefiting from this new transportation.

The canal, the plank and corduroy road and the railroad were innovations in transport that achieved for the

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Beers, History Of The Great Lakes, 182.
settlers, access to commercial markets.

Considerable social change and settlement change as well as a shifting in settlement pattern in evident from reviewing regional maps. The railroads had brought a social, economic and political revolution on a local, regional and provincial scale. In addition, the mode of resource exploitation and an ability to transport resources on a much faster and more efficient scale helped to transform the landscape from a "pioneer farm" appearance to a "post railroad" agricultural scene; this to be followed in many cases during the third quarter of the nineteenth century by new agricultural areas, new landscapes, and the visual appearance of a countryside characterized by mosaics of mixed farming.

F. The Farm After 1850

The decade of the eighteen-fifties was a revolutionary one in Upper Canada rural life. Other branches of agriculture, with somewhat less emphasis upon wheat production, were attempted. New technology brought new implements to the farm; better houses, and larger barns were built. The "candle and fireplace" gave way to new innovations, and the characteristics of a modern agricultural economy began to appear. Rural standards were steadily rising. The railroad entrepreneurs were pouring large sums of money into the province, buying land for
rights of way, hiring teams and labourers and providing through the growth of a consuming population, local outlets for all kinds of farm produce. Expansion in the lumber trade continued. Prices of rural real estate rose. The farmer in general, was able to purchase more livestock, to introduce better methods of cultivation and obtain improved farm implements, which were labour-saving. He also sowed and harvested resources much more efficiently. Local farm implement factories developed which were important in the creation of a home market for agricultural produce. With urban markets within range and new technological advances, counties such as Essex and Kent created profits in fruit growing on a much larger scale than before, and expanded their livestock industry too. Many districts found their isolation to be at an end. Merchants established stores along railway routes; greater competition brought lower prices for the manufactured goods that the farmer had to buy, and higher prices for the agricultural produce he offered in trade.

Hence, the successful farm reflected in the late 1850's, significant differences to that of the earlier farms. In perspective, the method to resource exploitation is more thought out; a strategy has been implemented to maximize benefits and create profit without considerable

Jones, Agriculture in Ontario, 212.
waste.

The use of resources in terms of farm products may best be illustrated in a brief description of a successful farm; certainly all farms could not be categorized as such but the efficient and practical farm and its resources for this time period fit this mould: enclosed in cedar fences, with a number of acres cleared with some pasture, meadows, and tillage; livestock may include cattle, horses, sheep and pigs; manure is applied to the fields. Grain fields follow a procedure of rotation, with wheat and rye being planted. The farmer has a diversity of productions, and employs cheap labour when possible. Farm implements are present to harvest the resource. The farmer may have his own wool made into cloth for his own wear; he eats his own mutton and has some to sell. Weeds are exterminated. Grain is stored in the farm's own barn and cattle are fed with straw. Surface water is drained but the farmer does not overdrain the land.\footnote{K. Kelly, \textit{Agricultural Settlement}, 66 - 67.}

The changing conditions of rural life and the approach to resource exploitation clearly illustrate in the period of 1860, a change in the man/environment relationship. Even before 1850, the system of self-sufficiency had been breaking down; the farmer now depended upon an import-export market system, hired labourers and new technological
innovations in which to approach the land.

6. Drainage: An Example of Technology and Its Effect Upon Resource Exploitation in the Nineteenth Century

When Iredell, Smith, Burwell, McNiff and other surveyors began a practical effort to lay out the settlement strategy for the Western District as part of the "Grand Design", they encountered a considerable amount of low-lying and stagnant wetlands. For the early farmers of this territory the problem of wetlands was a given. In the first efforts toward drainage, they dug trenches and partly filled these with brushwood, stones, or planks, before replacing the earth removed. Tiles would come into use by 1850, but were relatively uncommon even in 1880.\footnote{Pegg, \textit{Fur Trade To Farmstead}, 41.}

Undraining increased crop yields and lengthened the spring sowing and cultivating season. Small scale artificial drainage increased after mid-century, and railroad construction had widened the availability of labour-saving machinery. The individual farmer attempted some draining unaided, however, legislative and financial aid did not present itself until after 1869. Following this date, increased government aid allowed for modification of the landscape in the Detroit River environs, which provided for a less hostile approach in regard to resource
exploitation. 

Piecemeal drainage had its negative effects too however—an increase in surface run-off, waterlogging of adjacent low-lying land, and the deposition of debris on neighbouring fields.

The drainage of marshes and swamps proceeded rapidly during the two decades following 1860. The greatest progress in the Province was in the Essex-Kent region. New agricultural landscapes were created, and flat, productive farmlands, with managed stream courses were developed. The implementation of the Ontario Drainage Act (1878) was said to have opened thousands of acres of Essex and area wetlands to cultivation.

Many parts of the Detroit River environs and other sections of the Western District remained swamps and wetlands, however, due to the agricultural depression in the late 1880's and early 1890's. These wetlands created large gaps in the agricultural settlement pattern of the region. In 1871, twenty eight percent of Essex remained unoccupied, but large-scale drainage schemes opened up considerable land. For example, over 5,000 acres of

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Pegg, *Fur Trade To Farmstead*, 41.

Pegg, *Fur Trade To Farmstead*, 41 – 42.

Kenneth Kelly, *Changing Attitude to Forests in the 19th Century*, 70.
marshland was drained later in the century in 1894 - 95.

In 1851, in Essex and Kent counties, 10 percent of the land was classified by township engineers as "improved"; in 1911, the percentage had risen to 75 percent, some 782,740 acres. On Pelee Island, the draining of the marshes (referred to in 1817 by marine surveyor David Thompson as "pestilential") doubled the island's arable land and removed much of the breeding areas for flies and mosquitoes.

Drainage had, in effect, removed much of the threat of malaria, had improved living standards, and had increased greatly the amounts of arable land for sowing and harvesting crops and other resources.

By 1880, farms were well established over southwestern Ontario and farmers were becoming aware of the need to maintain productivity of their land and protect resources. The pattern of agricultural landscapes which emerged, reflected most clearly the distances from major market centres. The Detroit River environs by this time exhibited a mixture of natural and cultural landscape, including a considerable population regionally distributed. Rural characteristics of the land were illustrated through roadscapes, farmsteads and formal field patterns.

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Victor Lauriston, _Romantic Kent_ (Chatham, Ontario, 1952) 310.

Pegg, _Fur Trade To Farmstead_ (see Commissioner's Report, 1881, fig. #39. #94. Also Pelee Island Census 1871, pg. 78.)
F. Conclusion

My thesis maintains that throughout the historical period dealt with in this paper, the same parcel of land has been approached in numerous ways by humans with varying ideologies and technologies. This is no more evident than in the context of both aboriginal subsistence strategies and horticulture, and later agriculture, where natural resources were utilized from an existing land base in the subsistence phase of pioneer farming. Eighteenth and early nineteenth century farmers approached their environment with a similar concept to the aboriginal predecessors in terms of subsistence methods, although technologies differed. With a more refined approach to farming that included the introduction of European grains and innovative technology, exploitation of resources resulted in a modification of the landscape and new human settlement patterns.

Traditional transportation methods were supplemented with added efficiency, resulting in increased resource exploitation, demographic expansion and pressure, and great social, economic and political change.

The first decade of the mid-nineteenth century witnessed accelerated change - new inventions were imposed upon the traditional pioneer home and farm, and the railroad began to probe into and alter nineteenth century Canadian
culture. The very form and character of the landscape too was in a state of increasing transition after 1850. The scene after 1875 was even more manicured; remote from the alternative man/land relationships developed by the aboriginals on the same land three and a half centuries earlier - similar agricultural approaches but different priorities to those of the ambitious nineteenth century pioneers. In their carving, the pioneers had destroyed many beneficial resources. In comparison to the aboriginal, the European appears as an intrusive element in the forest of Upper Canada. For example, to the settler, the forest had been an enemy to subdue. The pioneers soon created considerable problems through the misuse of the forest resource - the farmers of the late nineteenth century paid the price for their predecessors' mistakes. Mismanagement, as a by-product of European ideology and myth towards the forest created environmental repercussions. For instance, a short-sighted procedure of clearing produced new niches for weeds, dissipation of the forest's soil organic layer, the drying up of creeks, soil erosion, and extreme flooding. The initiatives of the "market economy approach" were devastating at times for natural resources.

An underlying theme of this thesis is the conservation and preservation of resources. In the latter half of the nineteenth century, it was realized that too much timber had
been wastefully cut in too many cases, only to reveal land that was not suitable or profitable for farming. However, by this time farm and forest were being interpreted as mutually exclusive. It was noted that successful agriculture required windbreaks, woodlots and forests, to provide shelter and to regulate water supply. No longer could the woodlots be viewed simply as an economically good thing for potash or as a cash supplement. What followed in the post-railroad years of the 1850’s was an increased attempt to use resources more wisely. Commissions and Bureaus were established to govern preservation programs and to educate the population. The pressures caused by resource waste were being felt (by 1880 an Essex County farmer who wished to build a barn had to import his building materials) but other pressures to come would be far greater.

We can view our subject matter through history in patterns; the aboriginal period was witness to the survival and subsistence pattern; the Europeans brought a profit and loss method with them in the fur-trade era; the market-economy pattern of the nineteenth century farmer in the formative years of Upper Canada also had a crucial impact upon natural resources. The railroad era brought new procedures to land-use through its efficient and fast transportation to central markets. No longer was there remoteness of markets and poor communications, and the farm
family too had become more fully integrated into a market economy.

New patterns of settlement by 1875 had been established and set, fostered by railroad routes that connected to the United States and beyond. From 1870 to the end of the century, specialization continued and rapid endeavours towards urbanization took place; urban comfort was visible, and a "national idea" was developing in Ontario. Rapid growth in factory industry took place in textiles, agricultural machinery, milling and food processing, and clothing and wood products. Resource exploitation occurred on a massive and organized scale. By the late 1890's, small village industries were in decline, and rural de-population proceeded as people moved from country to city. The railway and its technological offshoots, coupled with numerous markets had produced further change of life in a new era for Ontario.

I have focused upon the earliest period of human occupancy in the Detroit River environs through to the end of the 19th Century in order to concentrate upon man/environment relationships. The distinction is made to renewable resources in order to illustrate that nature has in the past dictated the source of resources and has set limits to the manipulation of such resources by humans. I have not dealt with the industrialized period of the
nineteenth century, nor the resources of gas, mining, etc., as these I believe, suit a category of resource use that does not fit into a historical thesis of this nature.

Within the framework of this paper, it is evident that man may manipulate nature, but nature defines limits — hence, seasonal rounds and distinctions in approaches to survival by aboriginals. In this early period too, we see the movement of villages due to exhaustion of soil and overhunting of forest wildlife. The tool-kits from regional archaeological sites of early period Indians directly reflect adaptation in technology, and ecological factors determined resource use as well. Limits were set in the fur trade era; once exhaustion of the fur resource occurred new strategies toward profits were necessitated as a consequence. The pioneer era brought about a new technology and adaptation, as well as other ways to draw from natural surroundings for subsistence and for profit. Man harnessed nature (consider the way in which the gristmill used water power to grind grain into flour for food production and consumption). Yet nature provided the framework — climate, topography, fertility of soil and hydrology.

The pioneer period of southwesternmost Ontario suffered in terms of development partially from a direct environmental factor — geographic isolation. Comparatively, water routes have provided accessibility and transportation
for the human occupants of the region since the termination of the glacial period.

Accordingly, resource use history is the interaction of man and nature. It is also a result of technological, social and ecological factors illustrated throughout this study.

The distinct periods considered in this thesis have been chosen to provide a theme throughout in order to illustrate the approach to and consequences of use and misuse of such resources. It is human agency interdependent with natural resources that maintains the platform for this examination.
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