

THE ADOPTION OF THE WOOD STOVE AS AN  
AGENT OF MATERIAL CULTURE IN NEWFOUNDLAND:  
A HISTORICAL GEOGRAPHY

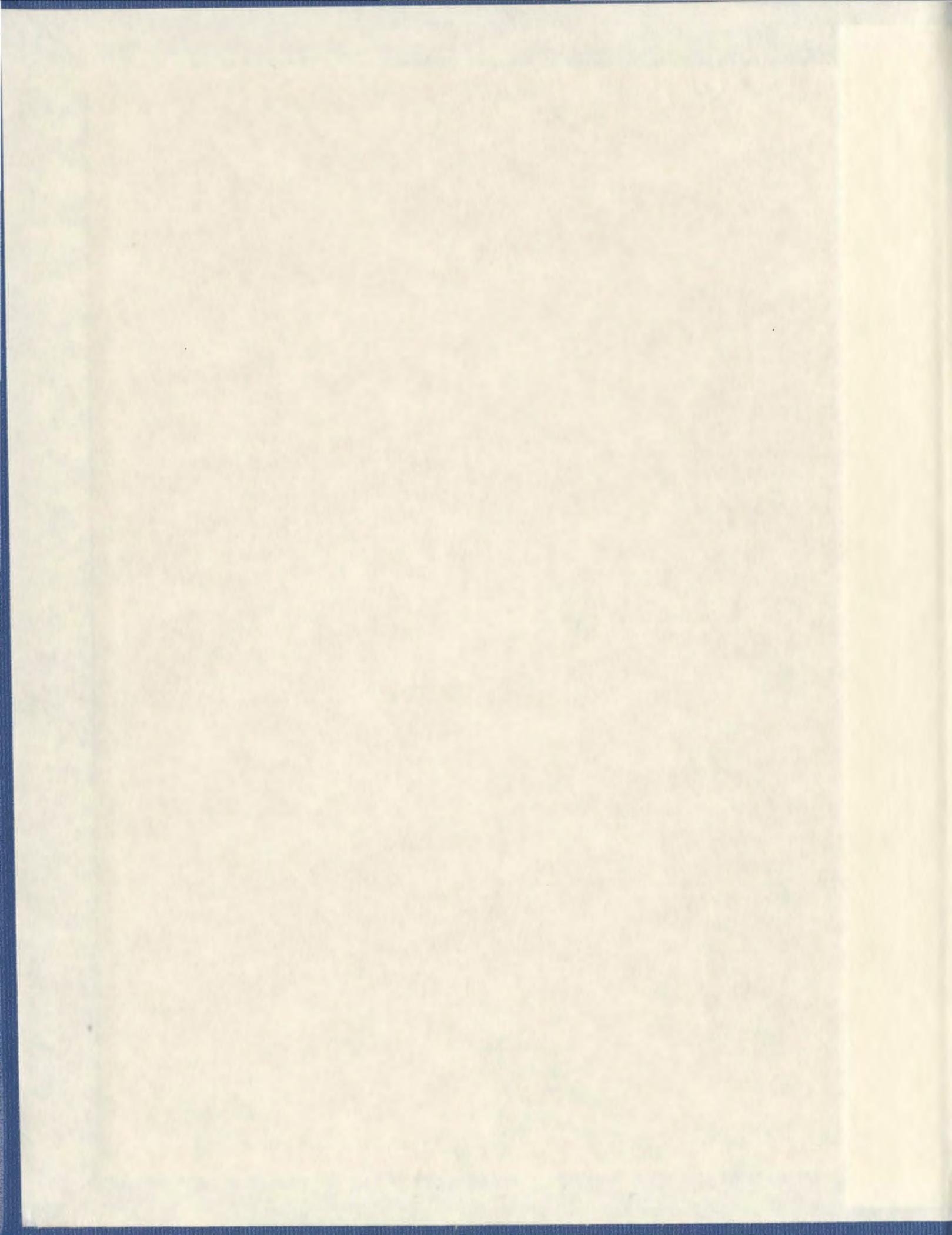
CENTRE FOR NEWFOUNDLAND STUDIES

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JENNIFER BOSE





**The Adoption of the Wood Stove as an Agent of Material Culture in Newfoundland:  
A Historical Geography**

**By**

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**A thesis submitted to the  
School of Graduate Studies  
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**St. John's**

**Newfoundland**

## ABSTRACT

This thesis examines the methods by which the Newfoundland population provided themselves with the warmth essential to survival, from the seventeenth century onwards. The provision of warmth was crucial to life on the island. It underlay all other activities and imposed its patterns on such fundamental geographical properties as the development of settlement and ecology. Two main components of creating this warmth were firewood from local forests and the cast iron stove, both of which are discussed here. Local forest resources were the staple fuel for much of the Newfoundland population. They were a fundamental component of seasonal work patterns and of the cashless subsistence economy. Three potential types of fuel wood shortages are identified, and the extent to which each may have occurred in Newfoundland is discussed. The adoption of the new technology of the cast iron stove is also examined, from its first appearance in the late eighteenth and early nineteenth centuries to its common acceptance in homes by 1870. A variety of sources contribute to a preliminary picture of the heating and cooking technology used, and of the utilization of fuel wood resources. These include such archival sources as merchant ledgers and local manufacturing records, as well as published sources like censuses and newspaper advertisements. This study also describes the decline in wood stove use during the twentieth century as other fuel options became available.

## ACKNOWLEDGEMENTS

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**Appendix One**

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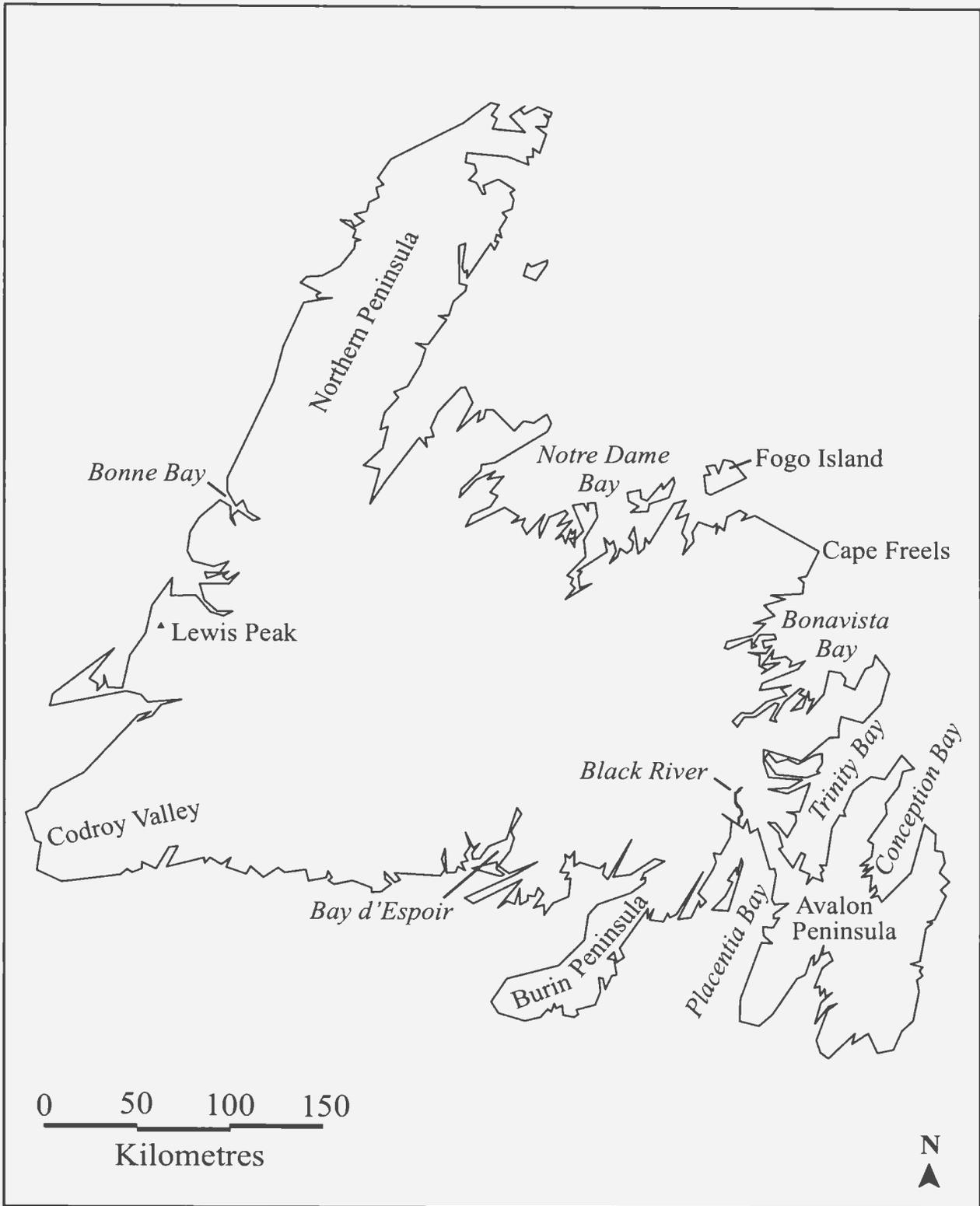
## **LIST OF ABBREVIATIONS**

ACNS	Atlantic Canada Newspaper Survey
DNE	Dictionary of Newfoundland English
HAC	Historical Atlas of Canada
HBC	Hudson Bay Company
PANL	Provincial Archives of Newfoundland and Labrador
UNF	United Nail and Foundry
UTE	United Towns Electric

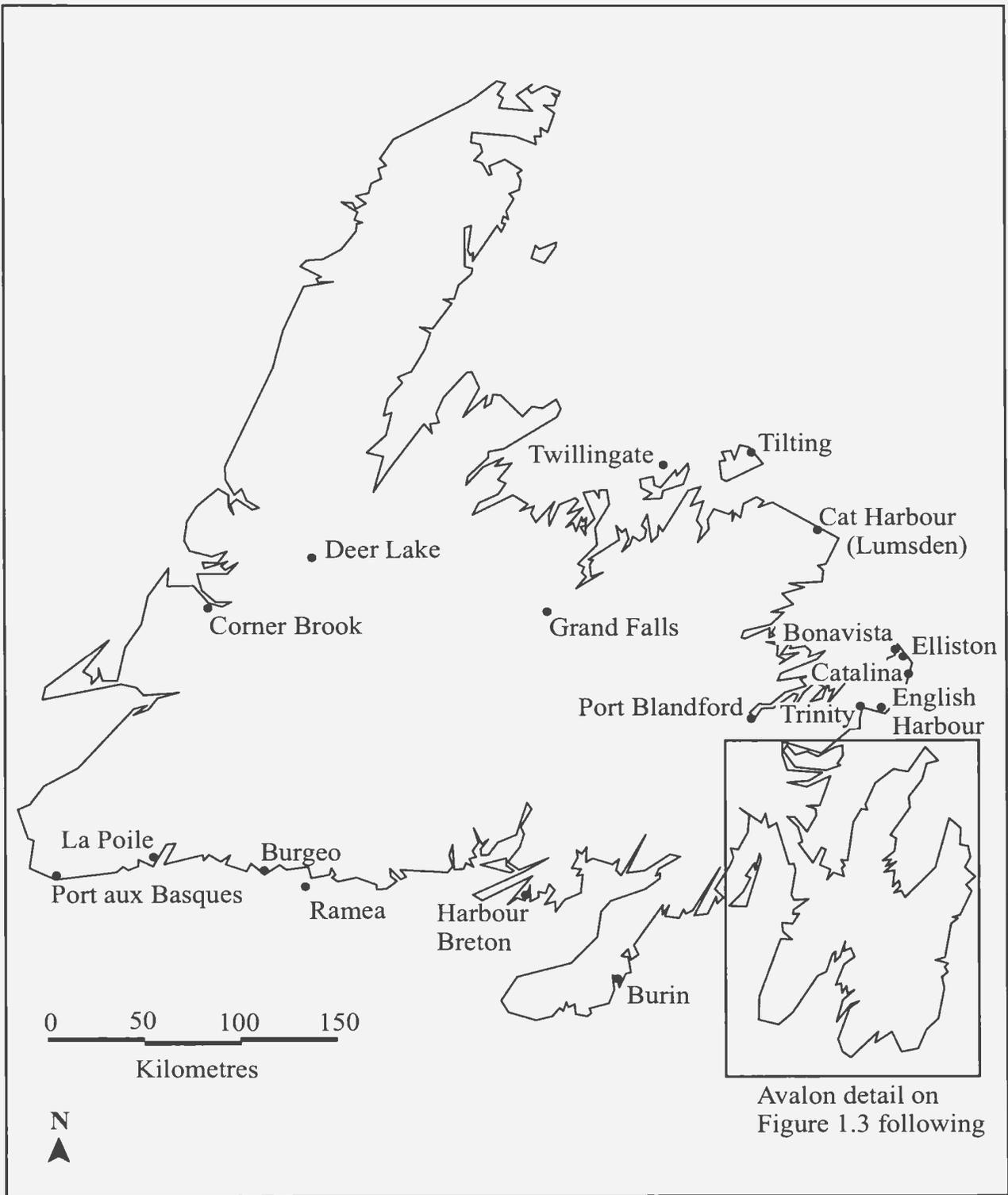
## **LIST OF UNIT CONVERSIONS**

1 inch = 2.54 centimetres

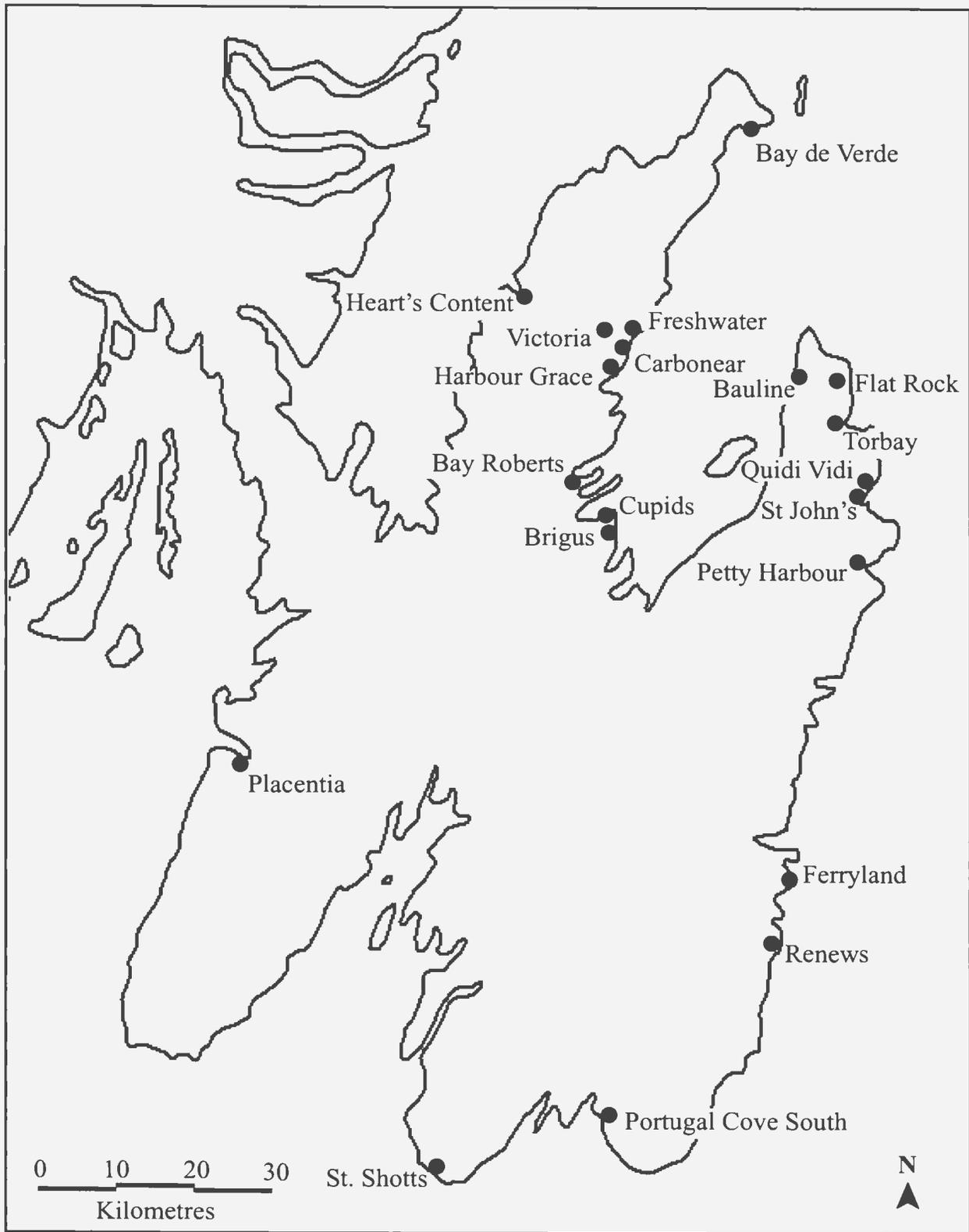
1 foot = 0.3048 metres



**Figure 1.1 Some physical and regional features of Newfoundland mentioned in this thesis**



**Figure 1.2: Principal Newfoundland settlements mentioned in this thesis**



**Figure 1.3: Settlements on the Avalon Peninsula mentioned in this thesis**

## CHAPTER ONE

### INTRODUCTION

A common perception of the environment of Atlantic Canada is its rugged nature. It is seen as “one of the physically more inhospitable regions of the world. It is agriculturally marginal, surrounded by cold and dangerous North Atlantic seas, and is subject to rains and fogs, gales and blizzards. It is not and never was a region of easy or comfortable human existence.”<sup>1</sup>

The above quotation aptly describes the unforgiving nature of the climate in Atlantic Canada, and the island of Newfoundland reasonably fits this description. It has not been a region of “comfortable human existence,” but for thousands of years, humans have inhabited it, coping with an infertile soil, the cold oceans, and the “rains and fogs, gales and blizzards.” Against this background, the provision of warmth was an essential component in the lives of Newfoundland residents, and much time and effort was devoted to activities aimed at providing warmth. In all this, the forests of Newfoundland played a key role in warming the population, providing fuel wood as well as shelter from the relentless winds that often sweep the island. Until the middle of the twentieth century, residents of Newfoundland, like those of much of the rest of North America, relied heavily upon wood products from the surrounding forests to meet their subsistence needs.

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<sup>1</sup> Donald Blake Webster, “Furniture and the Atlantic Canada Condition” *Material History Bulletin* 15 (Summer 1982): 53.

In many places in North America, wood shortages occurred as inhabitants harvested wood for both fuel and building, cleared land for agriculture, and established settlements. Helping to alleviate these “timber famines”<sup>2</sup> was one of the foremost incentives behind the development and production of cast iron wood stoves in the United States, since the stoves were much more fuel efficient than the open hearth technology they replaced. Brewer has noted that one of the main reasons people chose to buy a wood stove was to reduce the amount of fuel they used, particularly in urban areas where the cost of fuel rose rapidly throughout the nineteenth century.<sup>3</sup> This market inspired inventors to continue developing more efficient and effective stoves, and a contest was held in the United States for improvements to a stove, for “the benefit of the poorer class of people, especially ...*such as live ... where fuel is dear*”<sup>4</sup> (my emphasis).

Newfoundland residents used cast iron wood-burning stoves for approximately one hundred years to meet their need for warmth and food. Most of the existing studies on the subject of the wood stove, such as the works of Brewer,<sup>2</sup> Cowan,<sup>5</sup> and Peirce,<sup>6</sup> concentrate on the situation in the United States. However, the settlement experience in Newfoundland, and the resulting patterns of resource use, were far different from those of

---

<sup>2</sup> Michael Williams, *Americans and their forests: A historical geography* (New York: Cambridge University Press, 1989), 430.

<sup>3</sup> Priscilla Brewer, *From Fireplace to Cookstove* (Syracuse: Syracuse University Press, 2000). Eg. 28, 31-2, 38-9.

<sup>4</sup> *Transactions of the American Philosophical Society* 4 (1799); quoted by Brewer, *From Fireplace to Cookstove*, 39.

<sup>5</sup> Ruth Schwartz Cowan, "The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology" in *The Social Construction of Technological Systems: new directions in the sociology and history of technology*, ed. Wiebe E. Bijker, Thomas P. Hughes, and Trevor J. Pinch (Cambridge, Mass.: MIT Press, 1987): 261-80.

<sup>6</sup> Josephine H. Peirce, *Fire on the Hearth: The Evolution and Romance of the Heating-Stove* (Springfield, Mass.: Pond-Ekburg, 1951).

much of the United States or Canada, both areas in which timber shortages occurred. The island was settled for fishing, not agriculture, resulting in a very different cultural landscape and different pressures on the local resources.

This thesis examines the methods through which the Newfoundland population drew upon local forest resources to provide themselves with the heat they needed to warm their homes and cook their food. The cast iron wood stove played a significant role in heating Newfoundland homes, and, although it does not seem to have been adopted because of the same desperate fuel wood shortages that Brewer mentions in the United States, it was still an integral part of the Newfoundland populations' use of forests in an endeavour to keep warm. Three distinct themes may be considered when looking at the Newfoundland use of forests along with cast iron stoves for heating and cooking. The physical environment of the island is the first theme, dealing with the physical geography and the climate of Newfoundland, as well as the broad biogeographical characteristics of its forests. The second theme concerns the human geography of the island, combining population composition and growth with the economic activities and cultural preferences of the residents. The third theme is the technology and methods these residents used to turn timber resources into heat. This includes both open hearths and cast iron stoves, although our emphasis will be on the stoves, including issues such as the origins of imported stoves and the types of stoves manufactured in Newfoundland.

My main area of interest lies in items of material culture, because studies of material objects tend to be about average people and their methods of dealing with everyday situations. I come at this study with these interests in mind, and with the intent of exploring the role that wood stoves played in allowing Newfoundland residents to meet a fundamental need for heat. Wood stoves were an integral part of life for the island's population for roughly a century. This interest in material culture has led to a study that focuses as much on the stoves themselves as it does on the forests, since it was through the use of these stoves that the population turned a subsistence resource into the heat they needed for warming their homes and feeding their families.

This thesis covers a broad time span from the seventeenth century, when European settlers first began inhabiting the island and building homes that employed an open hearth, up to the present, when some residents are still using wood to heat their homes. It focuses more specifically on the nineteenth century however, since stoves were being introduced to the island at the beginning of the century and became common around mid-century. This thesis covers the island portion of Newfoundland. Labrador, with its more extreme climate, differing biogeography, and more varied human geography is not included in this study. Most available data sources led to an emphasis on the capital city of St. John's, since this was where imports to the island generally arrived, where governmental decisions were made, and where cast iron stoves were manufactured. However, a wide variety of sources have been used to gain information on the three key themes. These include, among others, census records, import statistics, manufacturing

records, newspaper advertisements, and merchant ledgers from various parts of the island.

This thesis is organized into seven chapters. This first chapter has provided a brief introduction to the topic. Chapter two looks at the relevant literature, as well as the various sources used in this particular study. An overview of the demographic and environmental characteristics of Newfoundland is provided in chapter three, and each of the succeeding chapters mentions changes in these characteristics over the time period studied. Chapters three through six tell the story of wood stoves in Newfoundland in chronological order: chapter three examines the heating and cooking technology used in Newfoundland prior to the introduction of the cast iron wood stove, specifically the open hearth; chapter four discusses imported stoves, while the fifth chapter deals with locally manufactured stoves. The decline in wood stove use, resulting from the transition to other fuel forms, is presented in chapter six. Throughout these foregoing chapters, the use of local forest resources through the technology of open hearths and cast iron stoves is also considered, with each chapter discussing the patterns of forest use applicable to the time period covered. In chapter seven, the considerations emerging from this study are discussed.

## CHAPTER TWO

### LITERATURE REVIEW AND SOURCES

#### 2.1 Introduction

The forests of the world have played a vital role in civilisation, providing shelter, edible plants, and game animals, all of which were essential in the lives of peoples across the globe. The most crucial use of forest resources in the history of humankind, however, has been the use of forests as a source of wood. Wood was used for building homes and barns to shelter people and their animals. It was used for building boats and wagons, for constructing bridges, and later, for building railroads. Wood was used for making furniture, and bark was woven to create clothing. One of the most important uses of wood was that it was burned for heat, allowing people to occupy otherwise uninhabitable parts of the globe. Heat from burning wood was used not just for heating homes, but also for cooking food, for baking bricks and pottery, for making glass, and for boiling dyes and soaps.<sup>1</sup> This heat was an indispensable part of life for most cultures. Though the use of wood heat declined dramatically in North America during the last century, people across the world, in many of the African and Latin American nations, for example, still rely on wood as their primary fuel source.

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<sup>1</sup> John Perlin, *A Forest Journey: The Role of Wood in the Development of Civilization* (New York: W.W. Norton & Co., 1989), 26.

## 2.2 Literature Review

### 2.2.1 Historical Deforestation in Europe and North America

“In the history of the human transformation of the earth, one of the key processes must be deforestation,” Williams writes.<sup>2</sup> Deforestation, resulting as humans harvest trees for their own uses, has been, and still is, a major issue in most countries of the world. Both Williams and Perlin discuss wood use and deforestation in Europe, which, as the homeland of most immigrants to Newfoundland, is an important cultural hearth to this study. These authors begin with the first human inhabitants of the area, and end with the eighteenth century, when wood was being replaced by coal.<sup>3</sup> In the European context, forest clearing began making a significant impact on the landscape around 4500 BC, when the first permanent settlements were established.<sup>4</sup> Over time, more forested land was cleared to make room for a growing population, since additional land was needed for settlements and for agriculture.

Industrial development was also linked closely to deforestation. Traditionally, England relied on Continental Europe for such supplies as salt, iron, dyes, glass, and weapons, and her forest resources were the envy of other European nations, which were depleting their own wood supplies to produce these goods. However, stemming from a desire to be self-sufficient, England began producing domestic glass, salt, and iron in the sixteenth

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<sup>2</sup> Michael Williams, “Dark ages and dark areas: global deforestation in the deep past,” *Journal of Historical Geography* 26, no. 1 (2000): 28.

<sup>3</sup> Michael Williams, *Deforesting the Earth: from prehistory to glocal crisis* (Chicago: University of Chicago Press, 2003); Perlin, *A Forest Journey*.

<sup>4</sup> Williams, “Dark Ages,” 29.

century, resulting in a greater reduction of the English forests.<sup>5</sup> Gradually, a growing population, coupled with increasing manufacturing activity, began to put pressure on the forest resources. Legislation to preserve forests, with the intent of guaranteeing adequate wood supplies for domestic and manufacturing use and naval construction, was introduced, but even these measures could not reverse the escalating wood shortages. Eventually coal was adopted as the principal fuel, despite the fact that, “hardly anyone relished inhaling the foul fumes and smoke it produced.”<sup>6</sup>

The situations experienced in Europe influenced immigrants’ reactions to and interactions with the forests of North America. Because of the shortages experienced in Europe, wood was a highly valued commodity. Nevertheless, the migrants’ attitudes towards the North American forests did not reflect the wood conservation policies they were familiar with in their homelands. These new forests seemed limitless in comparison with those of Europe, and there appeared to be no reason to conserve or ration wood use. Hence, the apparent wealth of the very different boreal forest resources in Eastern North America, and the ease with which it could be felled, may have encouraged a profligacy in the use of this resource.

The forests to which these immigrants arrived were not untouched, however, and Williams discusses the extent of First Nations wood use in Eastern North America. Among these agricultural societies, land was cleared to make room both for villages and

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<sup>5</sup> Perlin, *A Forest Journey*, 163-68, 171-175.

<sup>6</sup> Perlin, *A Forest Journey*, 171, 186.

for fields for planting crops. Dead wood was generally collected for firewood, though as supplies were exhausted, it sometimes became necessary to fell trees near a village for this purpose.<sup>7</sup> Every ten to twenty years, these settlements were moved to another location nearby with new, fertile fields and fresh timber.<sup>8</sup> The old site was then abandoned, and the forest was left to regenerate. The First Nations' practice with the greatest effect on North American forests was the custom of burning areas to promote the growth of desirable plants such as edible berries, to aid in hunting game, and to keep the forests open of undergrowth.<sup>9</sup> This deliberate burning occurred to such an extent that Williams believes the area of forests actually increased in some places with the arrival of Europeans, since fire was actively suppressed, and European diseases decimated First Nations populations.<sup>10</sup> The impact of indigenous lifestyles on the forests was not as minimal as is often believed, and the forests faced by European immigrants upon their arrival in North America were not as pristine as frequently imagined. Forests did, however, cover vast areas of the continent and often seemed limitless to new arrivals.<sup>11</sup>

As well as appearing infinite, forests stood in the way of creating the farms from which most settlers and their families could earn a living. Trees had to be cleared in order to form fields, and these felled trees were burned in the settlers' fireplaces and stoves. There was such an excess of wood that felled trees not used for buildings, furniture, or

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<sup>7</sup> Williams, *Americans and Their Forests*, 37.

<sup>8</sup> *Ibid.*, 38.

<sup>9</sup> *Ibid.*, 38, 43-5.

<sup>10</sup> *Ibid.*, 49.

<sup>11</sup> *Ibid.*, 35-49.

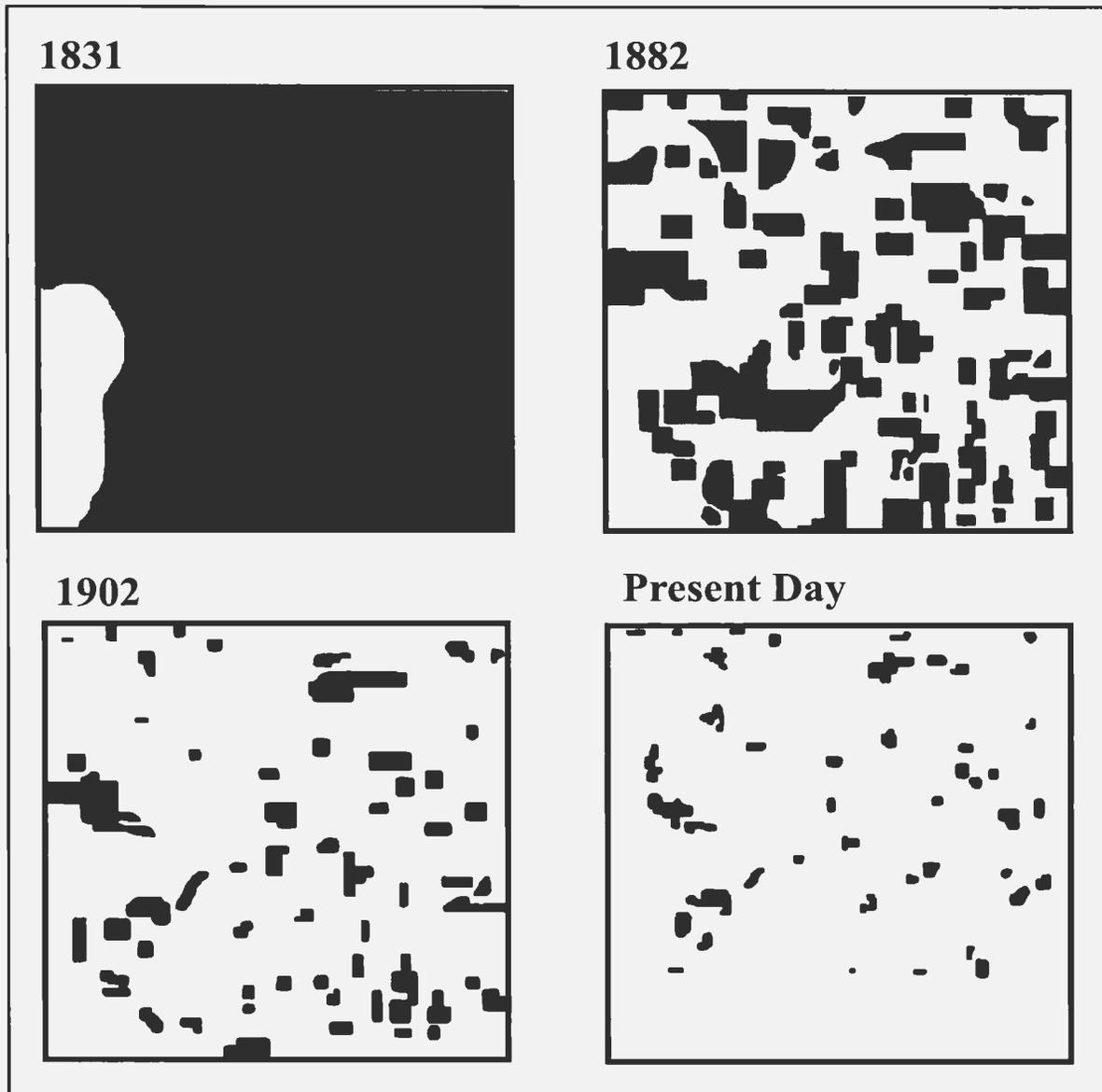
fuel were sometimes piled up and burned in the fields to get rid of them.<sup>12</sup> This difference in availability of wood to the common citizen helps explain the enormous uses of North America's forest resources, since something that once was scarce in their lives was now bountiful. There thus was neither desire nor reason to use wood sparingly. It should be noted, however, that though immigrants had much easier access to fuel wood in North America than they had in their homeland, they were also often faced with much colder winters, and therefore required larger supplies of wood to keep their homes at an endurable temperature. Attitude apparently played a role in the use and depletion of wood in North America, but the physical need for heat was also substantially different from the European context.

The forests of the United States fell under the onslaught of the settlers' axes. Williams states that "other than the creation of cities, possibly the greatest single factor in the evolution of the American landscape has been the clearing of the forests that covered nearly half of the country."<sup>13</sup> Figure 2.1 illustrates such changes, using deforestation in Cadiz Township, Wisconsin, as an example. Clearing continued unabated, and by the middle of the eighteenth century, Americans had begun to worry about their rapidly retreating forests. Marsh, writing in 1864, emphasized the depletion of American forests, commenting, "I greatly doubt whether any one of the American states, except, perhaps,

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<sup>12</sup> R. Cole Harris and John Warkentin, *Canada Before Confederation: a study in historical geography* (New York: Oxford University Press, 1974), 135; Charlotte Gray, *Sisters in the Wilderness: the lives of Susanna Moodie and Catherine Parr Traill* (Toronto: Penguin Books Canada, 1999), 99.

<sup>13</sup> Williams, *Americans and Their Forests*, xvii.



**Figure 2.1: Changes over time in the forested area of Cadiz Township, Wisconsin. The black areas represent forest cover.**

Source: Adapted from I.G. Simmons, *Changing the Face of the Earth: Culture, Environment, History* (Oxford: Basil Blackwell, 1989), 168.

Oregon, has, at this moment, more woodland than it ought permanently to preserve...."<sup>14</sup> Fuel wood shortages were occurring in a number of areas,<sup>15</sup> and higher prices of wood convinced some people to switch to coal as their primary fuel source. But, just as there had been in Europe, there was a prejudice against this dirtier form of fuel, and in areas where the forests were abundant, people still burned wood.<sup>16</sup> In 1872, the American commissioner of agriculture "declared that a 'timber famine' was inevitable."<sup>17</sup> "The word 'famine' was particularly appropriate," Williams explains, "for wood ranked next to food as the basic ingredient in American life, so that a dearth of wood was not merely a shortage but the equivalent of the withdrawal of a major life-support commodity...."<sup>18</sup> This famine apparently never reached catastrophic levels. Faced with growing wood prices and the new technology of cast iron stoves, the American population turned to alternate fuel sources, and to more efficient means of heating their homes.

The situation in much of Canada was similar, and finding an adequate supply of firewood is a continuous theme in Canadian history. Not only did people shape the land by harvesting trees for fuel wood, but the land itself shaped humans' decisions to settle in a particular place. Access to a sufficient supply of wood was often a key consideration when choosing a site for settlement. Champlain's descriptions of an early European settlement in Canada, that of Sieur de Monts and his men on the Island of St. Croix,

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<sup>14</sup> George Perkins Marsh, *Man and Nature*, ed. David Lowenthal (Cambridge: Belknap Press of Harvard University Press, 1965), 258.

<sup>15</sup> Williams, *Americans and Their Forests*, 137.

<sup>16</sup> *Ibid.*, 136.

<sup>17</sup> *Ibid.*, 430.

<sup>18</sup> *Ibid.*

reveal that a difficulty procuring firewood on the island was one of the reasons behind moving the settlement to a new location off the island after its first winter. Prior to settlement, the island was “covered with firs, birches, maples, and oaks.”<sup>19</sup> However, harvesting wood to construct buildings decimated the trees of the island, and firewood had to be gathered from the mainland, an impossible task in the winter when ice was drifting past the island.<sup>20</sup> The settlement was moved to another location where access to firewood was unrestricted.

### 2.2.2 Types of Fuel Wood Shortages

Shortage of fuel supplies is not uncommon in North American history, and such a shortage may be thought of as one of three types. The habitation on the Island of St. Croix is an example of the first such shortage, which we may term an *access shortage*. Other islands and the mainland had an abundance of trees that could potentially have been used for firewood, but men could not gain *access* to these trees during the winter months due to ice conditions. Thus, the lack of access to the wood supplies was what created the shortage.

The second type of shortage has been termed a *site shortage*, and Ball’s work deals with an early eighteenth century example of such a scarcity. He explains that employees at the Hudson Bay Company (HBC) post near the estuary of the Churchill River spent much of

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<sup>19</sup> Samuel de Champlain, *Voyages of Samuel de Champlain*, trans. Charles Pomeroy Otis, vol. 2 (New York: Burt Franklin, 1966), 31.

<sup>20</sup> Champlain, *Voyages of Samuel de Champlain*, 52-3.

their time procuring wood to heat themselves against the harsh cold of Manitoba winters.<sup>21</sup> Churchill is in the transition zone from the boreal forest to tundra. Trees are small, and the growth rate is very slow.<sup>22</sup> The employees had to comb the countryside for wood, even resorting to camping in forested areas in the winter months in order to obtain enough fuel wood.<sup>23</sup> This situation provides an example of a *site shortage*. The cold winters required the HBC men to consume vast quantities of firewood, and building the fort also involved substantial supplies of timber. However, the main reason for the scarcity of wood in close proximity to the fort was simply that there were not many trees in the area to start with. Thus, the men rapidly used up trees near the fort and were forced to go further afield in an effort to collect a sufficient supply from the land's meagre forest resources.

The final type of wood shortage has been termed a *consumption shortage*. This is the type of shortage that occurs when a population has easy access to a large supply of timber, yet eventually faces scarcities due to the harvesting of wood, the clearing of land, population pressure on the forests, or a lack of conservation and management of the forest resources. The situation in the United States described earlier fits into this category, as does that in much of central and eastern Canada. For example, in documenting the attitude changes of Ontario farmers towards forests during the nineteenth century, Kelly points out that, in the early days of settlement, the forest was a

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<sup>21</sup>Tim Ball, "Timber" *The Beaver* 67, no. 2 (March 1987): 46.

<sup>22</sup>Ball, "Timber," 47-8.

<sup>23</sup>Ball, "Timber," 54.

hindrance to development in the eyes of a settler, since it was an obstacle that had to be cleared before establishing a farm.<sup>24</sup> Just as in the United States, it was desirable and laudable to clear the forests and create agricultural land. However, the forests of Ontario were rapidly cleared, and Kelly discusses how citizens began to appreciate the trees' value as they felt the consequences of wood shortages.<sup>25</sup> A township with less than twenty percent forest cover was considered "overcleared," and by 1880, many townships in southern Ontario fell into this category (Figure 2.2).<sup>26</sup> By the late nineteenth century, such *consumption shortages* had caused the attitude towards forests in Ontario to switch to one of restoration and preservation.<sup>27</sup>

Likewise, in portions of eastern Canada, "the clearing of land for agriculture and the growth of urban places soon exhausted accessible wood-fuel resources, particularly near major urban centres."<sup>28</sup> Shortages of firewood occurred and citizens were forced to switch to alternate fuel sources, such as coal. New Brunswick was an exception to this situation, and despite successful timber and shipbuilding industries in the province, much of the land remained forested.<sup>29</sup> Wynn discusses several reasons for the fact that in 1850,

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<sup>24</sup> Kenneth Kelly, "The Changing Attitudes of Farmers to Forest in Nineteenth Century Ontario," *Ontario Geography* 8 (1974), 64.

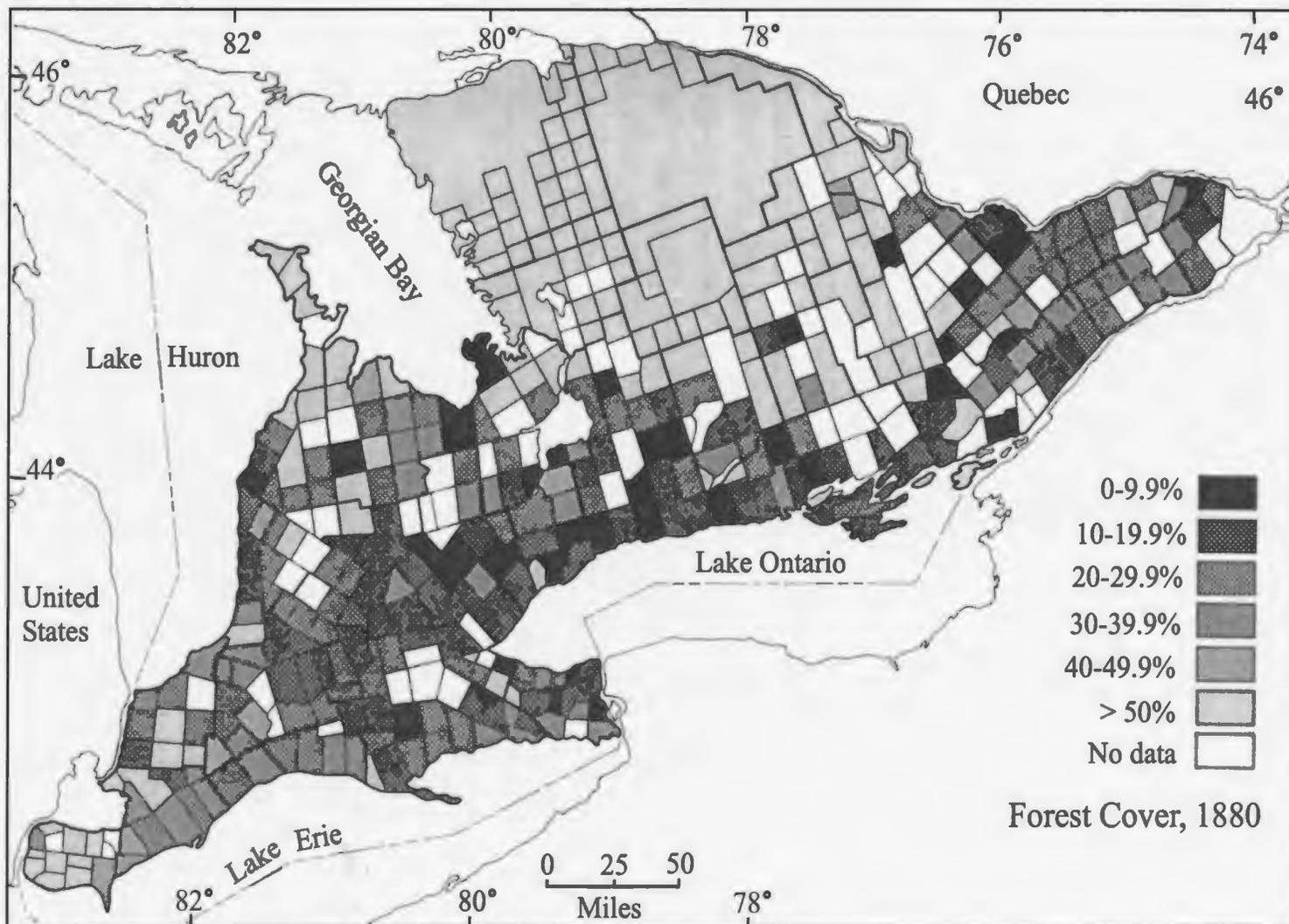
<sup>25</sup> Kelly, "Changing Attitudes of Farmers," 70-76; R. Louis Gentilcore ed., *Historical Atlas of Canada: Volume II The land transformed, 1800-1891* (Toronto: University of Toronto Press, 1987 – 1993), Plate 14.

<sup>26</sup> Kelly, "Changing Attitudes of Farmers," 71.

<sup>27</sup> *Ibid.*, 76.

<sup>28</sup> HAC, Vol II, Plate 46.

<sup>29</sup> Graeme Wynn, *Timber Colony: a historical geography of early nineteenth century New Brunswick* (Toronto: University of Toronto Press, 1981), 163-4.



**Figure 2.2: Forest cover in Ontario in 1880, showing a significant number of “overcleared” townships with less than twenty percent forest cover. Approximately twenty five percent of the townships could be considered overcleared.**

Source: Adapted from Kenneth Kelly, “The Changing Attitudes of Farmers to Forest in Nineteenth Century Ontario,” *Ontario Geography* 8 (1974), 71.

“...nowhere was the forest very distant from settled land.”<sup>30</sup> The limitations of land for agriculture in the province were one of his considerations, since in some areas “abrupt topography and infertile soils ... discouraged agricultural settlement.”<sup>31</sup> The fact that only even-aged stands of pine were exploited by the timber industry during the first half of the nineteenth century was also likely a contributing factor, protecting those forests of mixed wood types, or mixed ages.<sup>32</sup> Many parts of Canada reflected the American experience, however, rapidly clearing land for agriculture, and consequently suffering fuel wood shortages during the nineteenth century.

It is important to mention that there are no distinct boundaries between the three types of shortages that have been identified. Particularly *site shortages* and *consumption shortages* combine on occasion. A location with sparse forest resources may be able to support a small population, but once the population grows, wood shortages occur. Is this a *site shortage* because there were too few resources to start with? Or is it a *consumption shortage* because it was the expanding population that caused the shortage? There is no definitive answer to the question. The three types of shortages identified should not rule out other causes or multiple causes. They are instead intended to facilitate an understanding of why an area may have been facing fuel wood shortages.

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<sup>30</sup> Wynn, *Timber Colony*, 161.

<sup>31</sup> *Ibid.*, 156.

<sup>32</sup> *Ibid.*, 152.

### 2.2.3 The Development and Introduction of the Cast Iron Stove

With such fuel wood shortages looming, North American citizens began taking measures to conserve their fuel wood supply, and to reduce the expense created by rising fuel costs. One such measure included the replacement of the open hearth with the much more efficient cast iron stove. The American inventor Benjamin Franklin began advocating the fuel-saving qualities of such a device in 1744, with his publication of *An Account of the Newly Invented Pennsylvanian Fire-Place*.<sup>33</sup> According to Franklin, one half to two thirds of the wood generally consumed in an open hearth could be saved with the use of his invention.<sup>34</sup> Expensive, scarce firewood and the necessity in some towns of travelling nearly one hundred miles to obtain wood, were reason enough for Franklin to develop his fireplace.<sup>35</sup> Numerous inventors made changes to, and built upon, Franklin's design, incorporating their own ideas as well as those of heating technology from continental Europe, where both cast iron and tiled stoves had long been common. Fuel wood shortages seem to have been a principal inspiration in the development of stove construction, resulting in a contest to improve stove design and efficiency for the benefit of the less wealthy, who were the hardest hit by the rising costs of fuel wood. Though many people were reluctant to give up their open fire for a closed metal box, cast iron stoves eventually made their way into the American market, in large part because of their fuel saving qualities.<sup>36</sup> Numerous authors have written on Franklin's invention, as well

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<sup>33</sup> Benjamin Franklin, *An Account of the Newly Invented Pennsylvanian Fire-place* (Philadelphia: B. Franklin, 1744; Boston: G.K. Hall, 1973).

<sup>34</sup> *Ibid.*, 25-6.

<sup>35</sup> *Ibid.*, 1-2.

<sup>36</sup> Brewer, *From Fireplace to Cookstove*, 28, 31-3, 38, 64.

as those that followed it. Crowley,<sup>37</sup> Kauffman,<sup>38</sup> Brewer, Curtis,<sup>39</sup> Harrington,<sup>40</sup> and Peirce<sup>41</sup> all discuss the Franklin fireplace. Brewer's publication, an expansion of her doctoral thesis, is more academic than the other works, which are slightly antiquarian and aimed at those interested in collecting antique stoves. However, all works give a detailed explanation of the development of the earliest stoves in North America.

Working from numerous diaries, letters, domestic advice books, newspapers, and patent records, Brewer concludes that householders of the north eastern United States were certainly taking fuel efficiency into account when considering the purchase of a cast iron stove. Inventors of stoves, too, thought that consumers were looking for fuel economy: Boureau wrote that he had tested his invention and was "happy to find ... that not only the wealthy, but also the poor, from the great saving of fuel, will be greatly benefited."<sup>42</sup> Stove dealers also capitalized on this market for fuel-efficient stoves, claiming that "we will sell you a Stove that will save one half the fuel," and that a particular brand of cooking stove was "susceptible of performing one third more business with one third less

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<sup>37</sup> John E. Crowley, *The invention of comfort: sensibilities & design in early modern Britain & early America* (Baltimore, Md: John Hopkins University Press, c2001).

<sup>38</sup> Henry J. Kauffman, *The American Fireplace: Chimneys, Mantelpieces, Fireplaces, & Accessories* (New York: Galahad Books, 1972).

<sup>39</sup> Will Curtis and Jane Curtis, *Antique Woodstoves: Artistry in Iron* (Ashville, Maine: Cobblesmith, 1975).

<sup>40</sup> Geri Harrington, *The Wood-Burning Stove Book* (New York: MacMillan, 1977).

<sup>41</sup> Peirce, *Fire on the Hearth*.

<sup>42</sup> Nicholas Boureau, *The Arts and Crafts in New York, 1800-1804* (New York: New York Historical Society, 1965); as quoted in Priscilla J. Brewer, *From Fireplace to Cookstove: technology and the domestic ideal in America* (Syracuse: Syracuse University Press, 2000), 46.

fuel than any [other] stove."<sup>43</sup> The consumers themselves appear to have been eager to acquire stoves because of their fuel efficiency, making comments that a cookstove "took much less wood than the fireplace."<sup>44</sup> However, fuel efficiency was not the only characteristic taken into consideration; the effectiveness of a stove at heating a room, and the variety of cooking options a stove provided, also played a significant role. Despite this, it does appear that the increased fuel efficiency of cast iron stoves was one of the main motivations behind purchasing one.

#### **2.2.4 Newfoundland Use of Land and Forest Resources**

The Newfoundland context differs from much of the rest of North America, since agriculture has played a relatively minor role in the development of the province. Agriculture was certainly practised on the island, but most of this was on a subsistence scale,<sup>45</sup> with the general aim being "to reduce or even eliminate food purchases by producing farm products for home consumption."<sup>46</sup> Even as late as the mid twentieth century, with a relatively 'developed' commercial agricultural sector, seventy eight percent of Newfoundland farms had less than nine acres of "improved land," and were

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<sup>43</sup> Advertisements from *Providence Journal* 30 Nov. 1833 and 29 Oct. 1838; as quoted in Priscilla J. Brewer, *From Fireplace to Cookstove: technology and the domestic ideal in America* (Syracuse: Syracuse University Press, 2000), 70.

<sup>44</sup> Asa Moore Janney and Werner L. Janney, eds., *John Jay Janney's Virginia: An American Farm Lad's Life in the Early 19<sup>th</sup> Century* (McLean, Va.: EPM, 1978), 22; as quoted in Priscilla J. Brewer, *From Fireplace to Cookstove: technology and the domestic ideal in America* (Syracuse: Syracuse University Press, 2000), 91.

<sup>45</sup> R. Douglas Ramsey, "Land Competition Issues Affecting Agriculture in Newfoundland and Labrador" (MA diss., Memorial University of Newfoundland, 1993), 1. There was a small amount of commercial agriculture in Newfoundland, such as that around St. John's, but the products of such were mostly for city consumption (see Robert MacKinnon "The Growth of Commercial Agriculture Around St. John's, 1800-1935" [MA diss., Memorial University of Newfoundland, 1981]).

<sup>46</sup> *Report of the Newfoundland Royal Commission on Agriculture 1955* (n.p.: David R. Thistle, 1956), 65.

producing less than \$250 worth of produce annually.<sup>47</sup> Newfoundland "gardens"<sup>48</sup> did not require the same large areas of cleared land that the grain crops of Ontario did, for example, and thus the Newfoundland pressures on land resources differed from those in other areas of North America. The economy of Newfoundland concentrated on the marine resources of the region instead of land-based resources. Forested areas in Newfoundland were cleared not for the ground beneath them, but for the wood itself. Newfoundland society from the seventeenth to twentieth centuries relied heavily on the wood from local forests, and it was an essential part of the subsistence economy. The fishing industry, the principal economic activity on the island, required wood for boats, as well as for flakes, the large wooden platforms on which fish were dried. Wood was also used for the outbuildings and homes of the population. As in the rest of North America, wood was burned in the hearths of the island, heating and feeding the population throughout the year. Many of the areas of North America that were experiencing fuel wood shortages, and consequently adopting wood stoves, were primarily agricultural areas, so it is interesting to look at the island of Newfoundland in contrast to this. Did fuel wood shortages occur in Newfoundland? Did fuel wood shortages influence the decision of Newfoundlanders to adopt the heating and cooking technology of cast iron stoves? This thesis aims to discuss these questions, looking at the relation between the wood stove and the forests of Newfoundland as a means of providing the heat required for survival.

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<sup>47</sup> *Royal Commission on Agriculture 1955*, 49-50.

<sup>48</sup> "Gardens," Newfoundland style, are defined as "a Piece of land belonging to a family, sometimes fenced; an area enclosed for the cultivation of hay or vegetables" (*Dictionary of Newfoundland English*, 2<sup>nd</sup> ed., s.v. "Gardens.") A resident may have several gardens in various locations, and sometimes these gardens are quite a distance from the house.

The above discussion of the current literature provides the European and North American context relevant to this study. Studies of forest depletion in North America are not confined to the United States, however, although it is mostly the American forests upon which Williams and Perlin concentrate.<sup>49</sup> Lower discusses both American and Canadian forests in the lumber trade during the eighteenth and nineteenth centuries.<sup>50</sup> Many other works, such as those mentioned previously of Kelly, Ball, and Wynn, deal with Canadian situations.<sup>51</sup> These works generally concentrate on a specific province or region in Canada. Newfoundland forests have also been studied. Most research on Newfoundland forests discusses current forestry practices and the potential for developing the Newfoundland forestry sector. Scarlett includes a chapter on Newfoundland forest resources, evaluating the forests in terms of the area they cover, their distribution throughout the province, and the species of which they are composed. He also discusses the possibilities of integrating sawmill and pulpwood operations, and of using sawmill waste for energy.<sup>52</sup> Other similar works on the current or potential uses of Newfoundland forests include those of Freeman, Lundrigan et al., Symes, and Young and Russell.<sup>53</sup>

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<sup>49</sup> Perlin, *A Forest Journey*; Williams, "Dark Ages;" Williams, *Americans and Their Forests*

<sup>50</sup> Arthur Reginald Marsden Lower, *The North American Assault on the Canadian Forest: A History of the Lumber Trade Between Canada and the United States* (Toronto: Ryerson Press, 1968).

<sup>51</sup> Kelly, "Changing Attitudes of Farmers;" Ball, "Timber;" Wynn, *Timber Colony*.

<sup>52</sup> M.J. Scarlett, *The Newfoundland Economy: A Spatial Analysis*, 3<sup>rd</sup> ed. (St. John's: Department of Geography, Memorial University of Newfoundland, 1990).

<sup>53</sup> Tracy Freeman, *Economic Opportunities in Non-Timber and Value-Added Forest Products in the Western Newfoundland Model Forest* (Corner Brook: Humber Environment Group and Western Newfoundland Model Forest, 1995); Heather Lundrigan et al., *Understanding Recreational Uses of Forest Lands* (Corner Brook: Western Newfoundland Model Forest, 1996); David Symes, "Agriculture" in John Appleton et. al *The Bonavista Peninsula, Newfoundland* (Nottingham: Geographical Field Group, 1995); Eric Young and Joseph Russell, *The Consumption of Woodfuel and Pulpfibre Chips in NF, 1996* (Corner Brook: Forest Products and Development Division, Newfoundland Forest Service: 1997).

These works deal with the contemporary state of Newfoundland forests, but the historical use of the island's wood supply is more pertinent to this study, which focuses on nineteenth century, and earlier, wood use. Head discusses past forest depletion and wood shortages in Newfoundland, estimating the amounts used by the population and the resulting effects on the landscape.<sup>54</sup> He also looks at the beginning of the sawmill industry in the Bonavista Bay area, and the processes by which residents in this region gathered firewood in the early twentieth century. His work will be referred to in more detail in chapter three. Smith, Mattie, and Pope examine the phenomenon of winterhousing, a form of transhumance adopted by much of the Newfoundland population from the eighteenth to early twentieth centuries.<sup>55</sup> Each winter many residents would move from their homes near the fishing grounds on the exposed, rocky coast to more sheltered locations in the forests. All authors agree that obtaining an adequate supply of firewood was one of the main reasons behind this move inland each year, a phenomenon that will be examined in chapter three. While historical fuel wood shortages in Newfoundland have been studied to some extent, there is still a great deal about the

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<sup>54</sup> C. Grant Head, "Chapter 7: Settlement Migration in Central Bonavista Bay, Newfoundland" in *Canada's Changing Geography*, ed. R. Louis Gentilcore (Scarborough: Prentice-Hall of Canada Ltd, 1967), 92-110; C. Grant Head, "The changing geography of Newfoundland in the eighteenth century" (Ph.D. diss., University of Wisconsin, 1971); C. Grant Head, *Eighteenth Century Newfoundland* (Toronto: McClelland and Stewart, 1976).

<sup>55</sup> Philip E.L. Smith, "In Winter Quarters," *Newfoundland Studies* 3, no. 1 (1987): 1-36; Philip E.L. Smith "Transhumance among European settlers in Atlantic Canada" *The Geographical Journal* 161, no. 1 (March 1995): 79-86; *Encyclopedia of Newfoundland and Labrador Vol 5* s.v. "Winter-houses and Winter Migrations" by Philip E.L. Smith ed. (St. John's: Newfoundland Book, 1981-94): 594-599; Joan Mattie, *Winterhousing in Newfoundland* Agenda Paper, Historic Sites and Monuments Board of Canada 1990-58 (Ottawa: Historic Sites and Monuments Board, 1990): 549-66; Peter E. Pope, *Fish into Wine: The Newfoundland Plantation in the Seventeenth Century* (Chapel Hill: University of North Carolina Press, 2004).

subject that is yet unknown, and any relations between methods of heating and cooking and these shortages remain unexamined.

### **2.2.5 Domestic Heating and Cooking Technology in Newfoundland**

The literature on the introduction of cast iron wood stoves in North America is mainly limited to the works of Brewer, Cowan, and Peirce, and these studies only look at the United States, a dominantly agricultural area.<sup>56</sup> In Newfoundland, an early contribution to our understanding of the evolution of domestic heating systems has been made by Mannion, who includes in his work a section on the open hearths used by the Newfoundland Irish in the pre-stove era.<sup>57</sup> O’Dea has written a short article on heating and cooking in Newfoundland, looking at changes in the technology used over time, from the first open hearths to wood and coal burning cook stoves.<sup>58</sup> These works, along with Brewer’s, were the starting point for my research.

### **2.2.6 Geography and the Study of Home Interiors**

This study can be seen in the framework of the research of a small group of geographers who have studied objects or conditions within the interiors of homes. Traditionally, cultural geographers have focused their studies upon outdoor phenomena in the cultural landscape. Carl Sauer, the founder of cultural geography in North America, concentrated

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<sup>56</sup> Brewer, *From Fireplace to Cookstove*; Cowan, “The Consumption Junction;” Ruth Schwartz Cowan, *More Work For Mother: the ironies of household technology from the open hearth to the microwave* (New York: Basic Books, 1983); Peirce, *Fire on the Hearth*.

<sup>57</sup> John J. Mannion, *Irish Settlements in Eastern Canada: A Study of Cultural Transfer and Adaptation*. (Toronto: University of Toronto Press, 1974).

<sup>58</sup> Shane O’Dea, “The Development of Cooking and Heating Technology in the Newfoundland House,” *Material History Review* (Special Issue 1982): 11-18.

his research on the outdoor landscape, only briefly mentioning house interiors.<sup>59</sup> Most geographers since have followed this line of study, one that focuses on the exterior characteristics of a landscape. However, there are some geographers who have ventured inside the home in their works. Evans, while still discussing outdoor aspects of the landscape, also devotes substantial sections of his studies to objects found within the home, such as the hearth, pots and pans, churns, lamps, and various items of furniture.<sup>60</sup> In a Canadian context, Mannion examines, among other characteristics, the furniture and hearths of Irish immigrants in Newfoundland and Ontario. He includes artefacts such as homemade dressers, fireside benches, settles, and rocking chairs in his study.<sup>61</sup> Ennals and Holdsworth devote an entire book to the Canadian dwelling, and discuss house interiors, including the heating and cooking facilities found within them.<sup>62</sup>

Floorplans are another way in which geographers have looked at the interiors of dwellings. The Historical Atlas of Canada includes floorplans from Quebec (Vol. I) and Newfoundland homes (Vol. II).<sup>63</sup> These plans show the location of rooms, as well as doors, windows, staircases, hearths, bread ovens, and stoves. In looking at the development of house styles in Trinity Bay, Newfoundland, Mills also utilizes floorplans

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<sup>59</sup> For example, Sauer devotes three sentences to sketching out the arrangement of log cabin furniture in “Conditions of Pioneer Life in the Upper Illinois Valley” in *Land and Life: A Selection from the Writings of Carl Ortwin Sauer*, ed. John Leighly (Berkeley: University of California Press, 1969), 15.

<sup>60</sup> E. Estyn Evans, *Irish Folk Ways* (New York: The Devin-Adair Co., 1957); E. Estyn Evans, *Irish Heritage: the landscape, the people, and their work* (Dundalk: W. Tempest, Dunalgan Press, 1942).

<sup>61</sup> Mannion, *Irish Settlements in Eastern Canada*.

<sup>62</sup> Peter Ennals and Deryck Holdsworth, *Homeplace: The Making of the Canadian Dwelling over Three Centuries* (Toronto: University of Toronto Press, 1998).

<sup>63</sup> R. Cole Harris, ed., *The Historical Atlas of Canada: Vol. I From the beginning to 1800* (Toronto: University of Toronto Press, 1987 – 1993), Plate 55; R. Louis Gentilcore, ed., *The Historical Atlas of Canada: Volume II The land transformed, 1800-1891* (Toronto: University of Toronto Press, 1987 – 1993), Plate 6.

and descriptions of home interiors.<sup>64</sup> My research follows from, and draws upon, those geographers who have chosen to study domestic interiors, combining a geographical study with certain characteristics of folklore and material culture research.

Several works in the field of folklore are also relevant to this study and deserve mention. MacKinnon's research describes the construction of open hearth chimneys in the Codroy Valley. He also discusses how the introduction of cast iron stoves changed the ways in which people used the interior space of their homes.<sup>65</sup> Pocius and Mellin both make reference to more contemporary use of wood stoves, as well as practices of firewood gathering.<sup>66</sup> Their works particularly emphasize the twentieth century continuation of traditions and practices of firewood gathering and use in rural Newfoundland.

### 2.3 Sources

As mentioned earlier, in order to discuss the questions outlined for this research, three main themes must be addressed: the environment, the people, and the stoves of Newfoundland. The term environment is used to refer to two topics. The first topic covered by the term is the physical setting of the province, including the relief, climate, and soils of Newfoundland, which affect the growing conditions of the forests, as well as

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<sup>64</sup> David B. Mills, "The Development of Folk Architecture in Trinity Bay, Newfoundland," in *The Peopling of Newfoundland*, ed. John J. Mannion 1977 (St. John's: Memorial University of Newfoundland, 1990).

<sup>65</sup> Richard MacKinnon, *Vernacular Architecture in the Codroy Valley* (Hull: Canadian Museum of Civilization, 2002)

<sup>66</sup> Gerald L. Pocius, *A Place to Belong: Community Order and Everyday Space in Calvert, Newfoundland* (Montreal: McGill-Queen's University Press, 1991); Robert Mellin, *Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales From A Newfoundland Fishing Village* (New York: Princeton Architectural, 2003).

the need of the island's population for heat and shelter. Information from the *Atlas of Newfoundland and Labrador* was combined with Banfield's work to provide a picture of the physical environment of Newfoundland.<sup>67</sup> The second topic is the characteristics of the forests, such as the tree species prevalent on the island, and information on this area was gathered from a variety of scientific and descriptive sources, such as the works of Damman, Ralph, and Turner.<sup>68</sup> Data on firewood gathering and use was found in the 1911 and 1921 censuses of Newfoundland and Labrador and in merchant ledgers from the nineteenth century. The *Statutes of Newfoundland* provided information on Acts passed by the House of Assembly relating to domestic firewood cutting.

The second theme relates more to the people of Newfoundland in their human geographical context. In looking at the people of Newfoundland in terms of their relationship with stoves and the environment, it is necessary to look at the ethnic composition and growth of the population, as well as their distribution around the island in relation to the forests, their means of earning a living, and their methods of obtaining the supplies, for example stoves, that could not be harvested from the land or sea. Such information was gathered from the Newfoundland censuses from 1836 to 1935, as well as a variety of secondary sources.

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<sup>67</sup> Colin C. Banfield, "The Climatic Environment of Newfoundland," in Alan G. Macpherson and Joyce Brown Macpherson, eds. *The Natural Environment of Newfoundland, Past and Present* (St. John's: Department of Geography, Memorial University of Newfoundland, 1981); Gary E. McManus and Clifford H. Wood, *Atlas of Newfoundland and Labrador* (St. John's: Breakwater, 1991).

<sup>68</sup> A.W.H. Damman, "An ecological subdivision of the Island of Newfoundland," in G. Robin South *Biogeography and Ecology of the Island of Newfoundland* (The Hague: Dr. W. Junk Publishers, 1983); Edmund Ralph, "The Forests of Newfoundland and Labrador" in *The Book of Newfoundland Vol. 3*, ed. J.R. Smallwood (Edinburgh: Thomas Nelson Ltd, 1968); Jack Turner, "The Forests of Newfoundland" in *The Book of Newfoundland Vol 1*, ed J.R. Smallwood (Edinburgh: Thomas Nelson Ltd, 1968).

Merchant ledgers, newspaper advertisements, and import statistics were used to gain an idea of the timing and order of stove introduction on the island. Information on the local manufacturing of stoves was gathered from a collection of records of the United Nail and Foundry (UNF). City directories from the nineteenth and early twentieth centuries were also consulted, in combination with the UNF records, to provide a picture of stove sale and distribution networks in Newfoundland. Merchant ledgers and newspaper advertisements were studied for evidence of the processes by which stoves were bought and sold, and the methods by which they were transported around the island.

As is not unusual in much historical research, the data sources used in this study are somewhat fragmentary, in terms of the temporal and regional coverage that the sources provide, as well as incomplete coverage within some of the sources themselves. For example, only the 1911 and 1921 censuses of Newfoundland record information about the amount of firewood cut by the population. Censuses from other years do not list firewood as a product. As well, most of the company records of the UNF, one of the main stove manufacturing firms in Newfoundland, were preserved, but several fires experienced by the company destroyed all the records prior to 1886. Thus, it is difficult to obtain data on the early years of the company's production. Other sources had similar challenges, and the specifics of each data source will be discussed in the relevant chapters.

## **CHAPTER THREE**

### **THE PHYSICAL ENVIRONMENT AND CULTURAL ADAPTATIONS IN EIGHTEENTH CENTURY NEWFOUNDLAND**

#### **3.1 Introduction**

Some form of heat was needed by the Newfoundland population for much of the year to warm their homes, and year round for cooking and cleaning purposes. Prior to the introduction of cast iron stoves in the early nineteenth century, an open hearth provided this heat, and this chapter discusses this method of heating. Brief summaries of the characteristics of the Newfoundland forests and the Newfoundland population begin the chapter. This provides the background information necessary for understanding the role that local forest resources played in the lives of the island's inhabitants. These summaries are followed by a discussion of the heating and cooking technology used by Newfoundland residents prior to the nineteenth century. The chapter concludes with the inhabitants' use of the forests and the fuel wood shortages that occurred in some areas of Newfoundland during the seventeenth and eighteenth centuries.

#### **3.2 General Characteristics of the Newfoundland Climate and Forests**

A discussion of the use of Newfoundland forest resources for fuel wood should include the soils and climate of the island itself, since these affect both the growing conditions of the forests and the need of the population for heat. It must also describe the prevalent tree species in Newfoundland, and the distribution of forests around the island. The

island extends in latitude from approximately 46° 30' N to around 53° 30' N, covering a total area of 106,000 km<sup>2</sup>. It has a varied climate and geology, resulting in many regional differences in vegetation.<sup>1</sup> Most Newfoundland communities are near sea level, but the island also has some substantial relief and rises to a summit of 815 metres at Lewis Peak on the west coast of the island.<sup>2</sup>

As an island, the climate of Newfoundland is heavily influenced by the surrounding waters. The Atlantic Ocean, the Gulf of St. Lawrence, and the Strait of Belle Isle enfold the island in a moderating body of water, which results in cool summers and warm winters in comparison with similar latitudes in continental Canada. However, these winters would still have been much colder than anything that European immigrants to Newfoundland had experienced in their homelands. The ocean does not warm temperatures to the extent expected of such a maritime location, because the Labrador Current reaches the shores of the island, forming what Banfield descriptively refers to as “an encircling ribbon of cold ex-Arctic water.”<sup>3</sup> During the spring and summer months, icebergs are often carried past the island on this current.<sup>4</sup> Sea ice is also common along the coasts of Newfoundland, sometimes extending as far south as 45°N, the same latitude as Bordeaux in southern France.<sup>5</sup> The cold Labrador Current thus has a significant effect on the climate of the island, bringing cooler air temperatures with it. Furthermore, the warm Gulf Stream, travelling up from the south, is deflected by the Labrador Current and

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<sup>1</sup> Damman, "Ecological subdivision of Newfoundland," 163.

<sup>2</sup> Ibid., 169.

<sup>3</sup> Banfield, "The Climatic Environment of Newfoundland," 83.

<sup>4</sup> McManus and Wood, *Atlas of Newfoundland and Labrador*, plate 5.

<sup>5</sup> Ibid.

bypasses Newfoundland, taking its warming influences instead to Europe, a pattern illustrated in Figure 3.1. The maritime nature of Newfoundland can also be seen in the high incidence of fog in the island's climate, particularly in the spring and summer months when the cold water of the Labrador Current chills warmer air masses arriving in the area from the southwest.<sup>6</sup> Those areas of the coast that are mostly ice-free, such as the south coast of the island, are also generally some of the foggiest, and thus most of Newfoundland has, at times, either sea ice or fog, if not both, to chill local air masses.

The length of the frost-free season differs over the island, with dates for the last spring frost ranging from June first to June twenty second, while the mean first frost in the fall varies from September third to October fifteenth.<sup>7</sup> The length of the vegetative season varies from fewer than 100 days on the headland of the Northern Peninsula to 160 days in other regions of the island.<sup>8</sup> Thus, there is a limited time period in which vegetation, specifically forests in this case, can grow each year. The island's thin, acidic, rocky soils add to the difficult growing environment, making it challenging for plant communities to thrive.<sup>9</sup> The soils of the island are not particularly fertile, and only a few portions of the province can successfully support commercial agriculture. Numerous bogs, areas of bare rock, and water bodies add to the challenges faced by vegetation. As well, compact

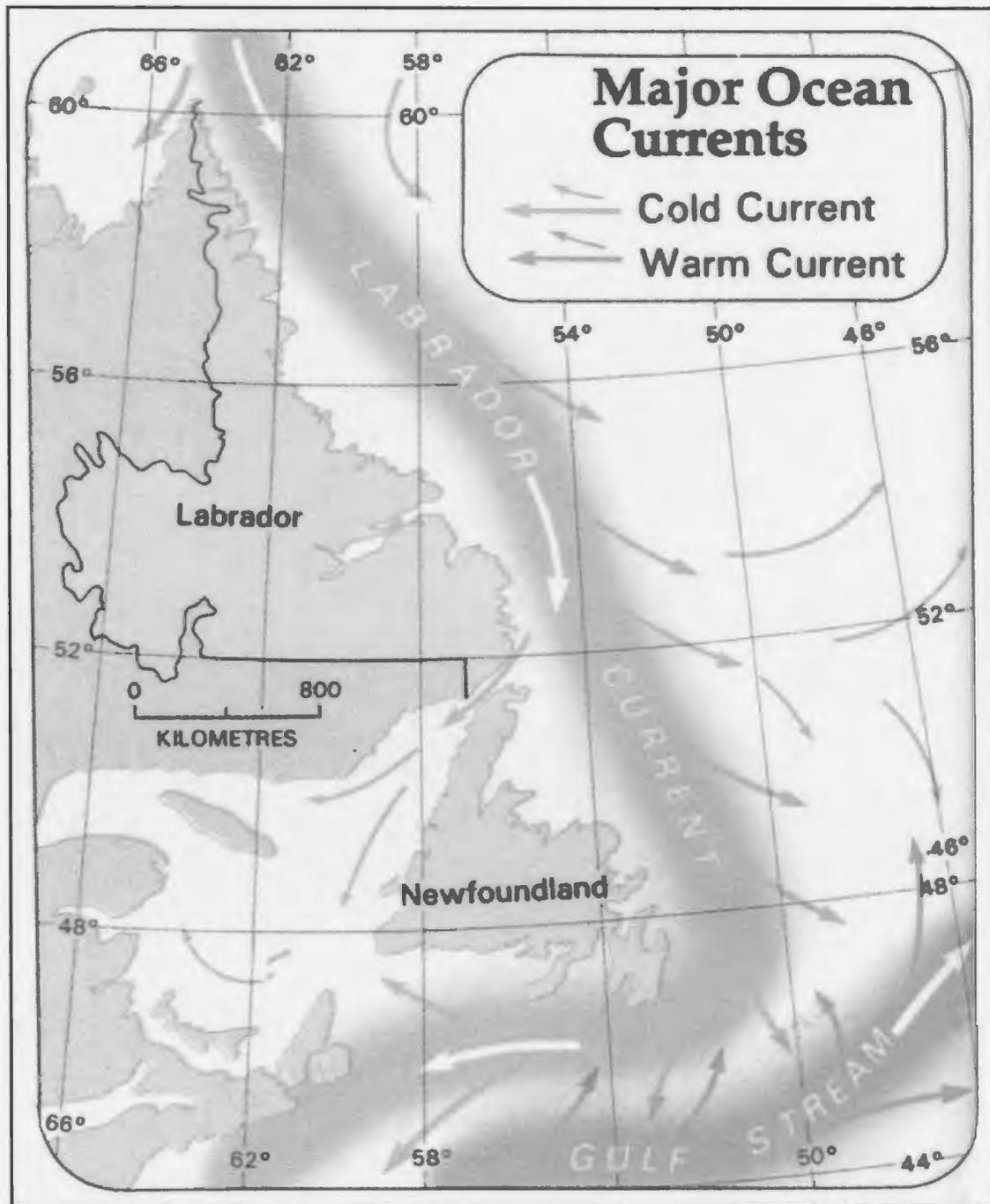
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<sup>6</sup> Banfield, "The Climatic Environment of Newfoundland," 117; McManus and Wood, *Atlas of Newfoundland and Labrador*, plate 6.

<sup>7</sup> E.F. Woodrow and P.K. Heringa, *Pedoclimatic Zones of the Island of Newfoundland* (St. John's: Canada Soil Survey, 1987), 7.

<sup>8</sup> Woodrow and Heringa, *Pedoclimatic Zones*, 7.

<sup>9</sup> Damman, "Ecological Subdivision of Newfoundland," 167; Ramsey, "Land Competition Issues Affecting Agriculture," 37; Department of Rural, Agriculture & Northern Development, Soil and Land Management Division, *Newfoundland Soil Survey and Land Use Program 1981* (Mount Pearl: The Dept of Rural, Agriculture & Northern Development, 1981), 1.



**Figure 3.1: Map of the Labrador Current bringing arctic water and cooler temperatures to Newfoundland. The warmer Gulf Stream bypasses Newfoundland, traveling east to Europe.**

Source: Gary E. McManus and Clifford H. Wood, *Atlas of Newfoundland and Labrador* (St. John's, Breakwater, 1991), Plate 5

subsoil layers resist entry of plant roots and precipitation causing poor drainage and growing conditions.<sup>10</sup> As a result, trees in Newfoundland are small, and growth is slow.

“In Newfoundland the effects of topography and the cold ocean surrounding the island cause a very irregular pattern of vegetation zones,” Damman explains.<sup>11</sup> Vegetation patterns vary across the island, but on a global scale Newfoundland is considered to fit within the boreal zone.<sup>12</sup> Much of the island is forested, predominately with balsam fir and black spruce. Other species include white spruce, white and red pine, tamarack, white and yellow birches, trembling aspen, balsam poplar, and red maple.<sup>13</sup> Of these, it is primarily spruce, fir, and birch that are used for fuel wood,<sup>14</sup> and, as noted in Table 3.1, it is only these species which are present in all ecoregions of the province. Figure 3.2 illustrates the geographical location of these ecoregions. Owing to cool conditions, a high frequency of fog, and poor soils, growth rates in Newfoundland are slower than on the mainland of Canada. The average mature softwood in Newfoundland is small in comparison to other coastal areas in Canada, with a seven inch diameter and a fifty foot height.<sup>15</sup>

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<sup>10</sup> Department of Rural, Agriculture & Northern Development, *Newfoundland Soil Survey*, 2.

<sup>11</sup> Damman, “Ecological Subdivision of Newfoundland,” 198.

<sup>12</sup> Ibid.

<sup>13</sup> Ralph, “Forests of Newfoundland,” 339.

<sup>14</sup> Edward Cokes, “The Spatial Patterns of Log Cutting in Bay D’Espoir, 1895-1922” (MA diss., Memorial University of Newfoundland, 1973), 37.

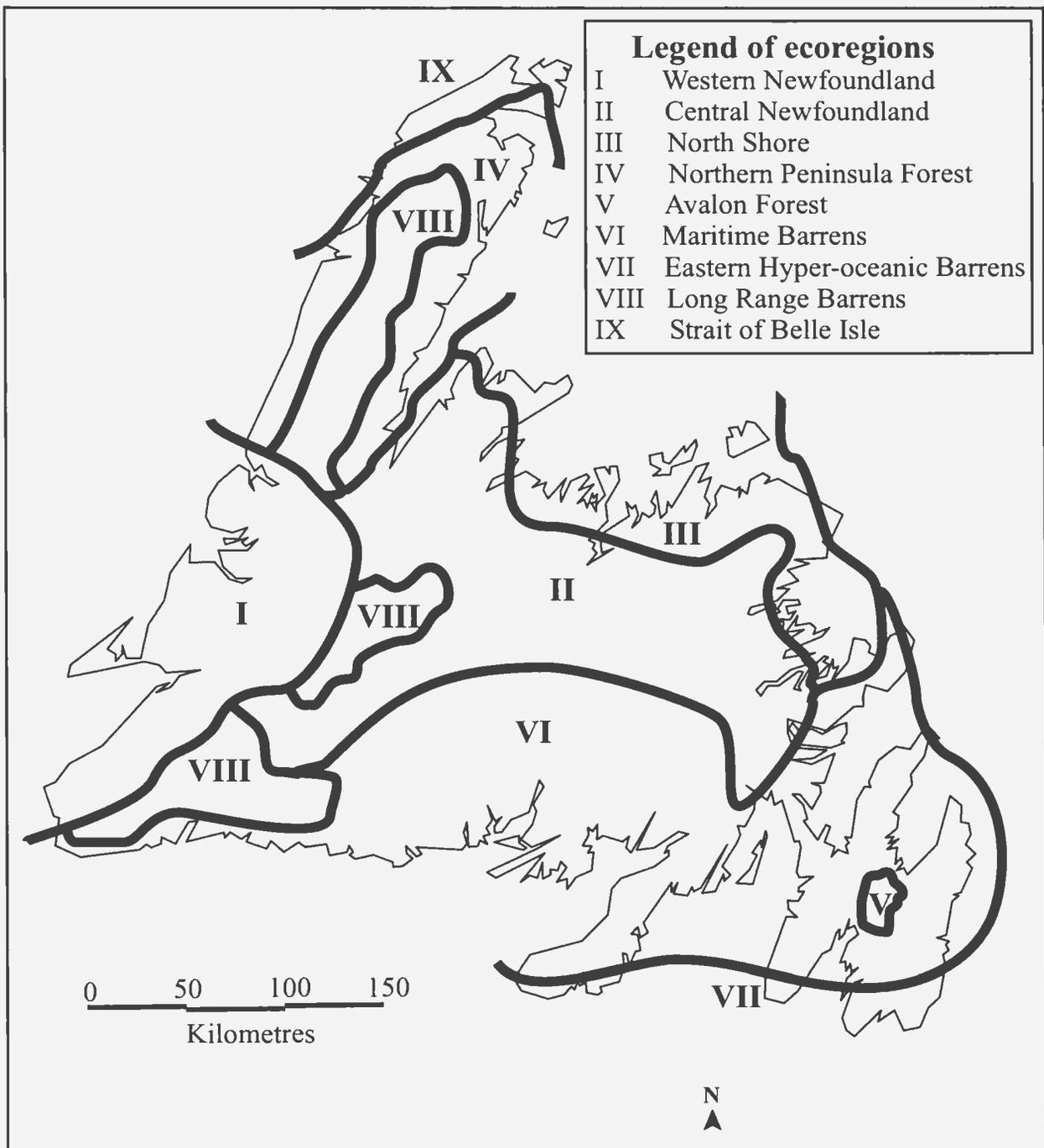
<sup>15</sup> Ralph, “Forests of Newfoundland,” 342.

**Table 3.1**

**The Presence of Tree Species in Different Regions of Newfoundland, Using Damman’s Ecoregions. P indicates the specie is present in the region, S indicates a sporadic or geographically-limited occurrence within the region, and a blank space indicates that the specie is mostly absent from the region.**

	Red	Yellow	Red	Trembling	White	Green	Speckled	Mountain	Willow	Red Osier	Balsam	Black	White	White
<b>Ecoregion</b>	<b>Pine</b>	<b>Birch</b>	<b>Maple</b>	<b>Aspen</b>	<b>Pine</b>	<b>Alder</b>	<b>Alder</b>	<b>Maple</b>		<b>Dogwood</b>	<b>Fir</b>	<b>Spruce</b>	<b>Spruce</b>	<b>Birch</b>
<b>I Western Newfoundland</b>		P	P	P	P		P	P	S	S	P	P	P	P
<b>II Central Newfoundland</b>	P		S	P	P		P				P	P	P	P
<b>III North Shore</b>			S	P	P	S	S				P	P	P	P
<b>IV Northern Forest</b>						P	S	P	P	P	P	P	P	P
<b>V Avalon Forest</b>		P	P		P	P		S			P	P	P	P
<b>VI Maritime Barrens</b>	S	P		P	P	P	S	S			P	P	P	P
<b>VII Eastern Hyper-Oceanic Barrens</b>						P					P	P	P	P
<b>VIII Long Range Barrens</b>	S	S				P	S	S			P	P	P	P
<b>IX Strait of Belle Isle</b>						P			S		P	P	P	P

Source: A.W.H. Damman, “An ecological subdivision of the Island of Newfoundland” in G. Robin South, *Biogeography and Ecology of the Island of Newfoundland* (The Hague: Dr. W. Junk Publishers, 1983), 165.



**Figure 3.2: Damman's ecoregions of Newfoundland**

Source: Adapted from A.W.H. Damman, "An ecological subdivision of the Island of Newfoundland" in G. Robin South *Biogeography and Ecology of the Island of Newfoundland* (The Hague: Dr. W. Junk Publishers, 1983), 166.

Some areas, however, have no trees. These barrens<sup>16</sup> occur in areas of serpentine and limestone rocks along the west coast of the island, and in some exposed coastal areas where wind and fog hinder vegetation growth, such as the headlands of the eastern peninsulas, like the Avalon and Burin.<sup>17</sup> However, most areas of Newfoundland were forested to some extent and would have provided the population with firewood resources, at least during the initial stages of settlement. The population's use of these resources and shortages occurring with them will be discussed later in this chapter.

### **3.3 Population Characteristics of Eighteenth Century Newfoundland**

As mentioned earlier, Newfoundland was settled for its marine resources, and the settlement patterns reflect this emphasis on the sea. Mannion aptly describes the population of Newfoundland as "a necklace of communities around the coast," and indeed, Newfoundland settlements have always been primarily coastal.<sup>18</sup> Figure 3.3 demonstrates the maritime nature of the island's early settlement.

Population numbers from the beginning of European settlement in Newfoundland are sparse, since the first official census of the whole island was taken in 1836, more than two centuries after a permanent population was first established. However, several

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<sup>16</sup> The term "barrens" in Newfoundland refers to three types of vegetation cover: "elevated land or plateau with low, scrubby vegetation;" "uninhabited treeless stretches of wasteland, supporting low shrubs, berries, mosses, and wild animals;" and "exposed, rocky areas incapable of supporting much vegetation." (Dictionary of Newfoundland English, 2<sup>nd</sup> ed., s.v. "Barrens," 26-7). Newfoundland barrens are often not devoid of vegetation, but that which does grow is scrubby and stunted.

<sup>17</sup> Damman, "Ecological Subdivision of Newfoundland," 172-3, 177, 184, 186, 189-90, 195.

<sup>18</sup> John J. Mannion, introduction to *The Peopling of Newfoundland*, ed. John J. Mannion (St. John's: Memorial University of Newfoundland, 1977), 2.



**Figure 3.3: Map showing the coastal distribution of Newfoundland settlements in 1836.**

Source: Adapted from *Historical Atlas of Canada Vol II*, Plate 8.

scholars have studied the late seventeenth and early eighteenth century populations of Newfoundland. Their works are helpful in determining the characteristics of the island's inhabitants prior to the introduction of cast iron stoves.

Initially, the population of the island was transient, associated with the migratory fishery. Men were brought to Newfoundland seasonally by merchants from England, France, and Portugal, specifically for the purpose of catching and curing cod for shipment back to Europe. Each spring, ships left European ports, travelling to Newfoundland to fish. Once the fishing season was over and the ship loaded with cod, the men aboard returned home for the winter. The next spring more vessels would cross the Atlantic, following the same pattern. This migratory fishery continued from the early sixteenth to the early nineteenth century.<sup>19</sup> Throughout this time, a few of the seasonal fishermen might remain on the island for a winter or two, but soon returned home, and permanent immigration was "a mere trickle" in comparison with these seasonal waves of migrants coming across the Atlantic.<sup>20</sup>

The first permanent European settlements in Newfoundland were colonization attempts by British merchants, who saw economic opportunity in the resources of the island,<sup>21</sup> and Handcock identifies six English settlement attempts in Newfoundland between 1610 and

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<sup>19</sup> Mannion, introduction in *Peopling*, 5; W. Gordon Handcock, "English Migration to Newfoundland," in *The Peopling of Newfoundland*, ed. John J. Mannion (St. John's: Memorial University of Newfoundland, 1977), 16; *HAC Vol. I*, Plate 21, 22.

<sup>20</sup> Mannion, introduction in *Peopling*, 5; *HAC Vol. I*, Plate 23.

<sup>21</sup> Mannion, introduction in *Peopling*, 5; Gillian T. Cell *English Enterprise in Newfoundland 1577-1660* (Toronto: University of Toronto Press, 1969), 53-56.

1623.<sup>22</sup> A few families became established on the island through these colonizing ventures, but population growth was slow. By the end of the seventeenth century, the permanent population of the island was roughly three thousand inhabitants, in thirty settlements, mostly located along what was known as the English Shore, shown in Figure 3.4.<sup>23</sup> Most settlements were comprised of fewer than half a dozen families. A zone of French settlement based on Placentia Bay occupied the southern coasts of the island until 1713.

Despite the fact that the dominantly British population quadrupled between 1725 and 1775, settlement was still sparse by the end of the eighteenth century, and communities were primarily restricted to the Avalon Peninsula and along the northeast coast as far as Notre Dame Bay.<sup>24</sup> Hancock has calculated immigration rates to Newfoundland from 1723-1823, and his results are listed in Table 3.2. He determines the average annual immigration from the period of 1723-49 to be 96 people. This increases sharply for 1750-91, in which an average of 502 immigrants arrived per year.<sup>25</sup> Although there were relatively few residents on the island during the eighteenth century, the population was growing steadily.

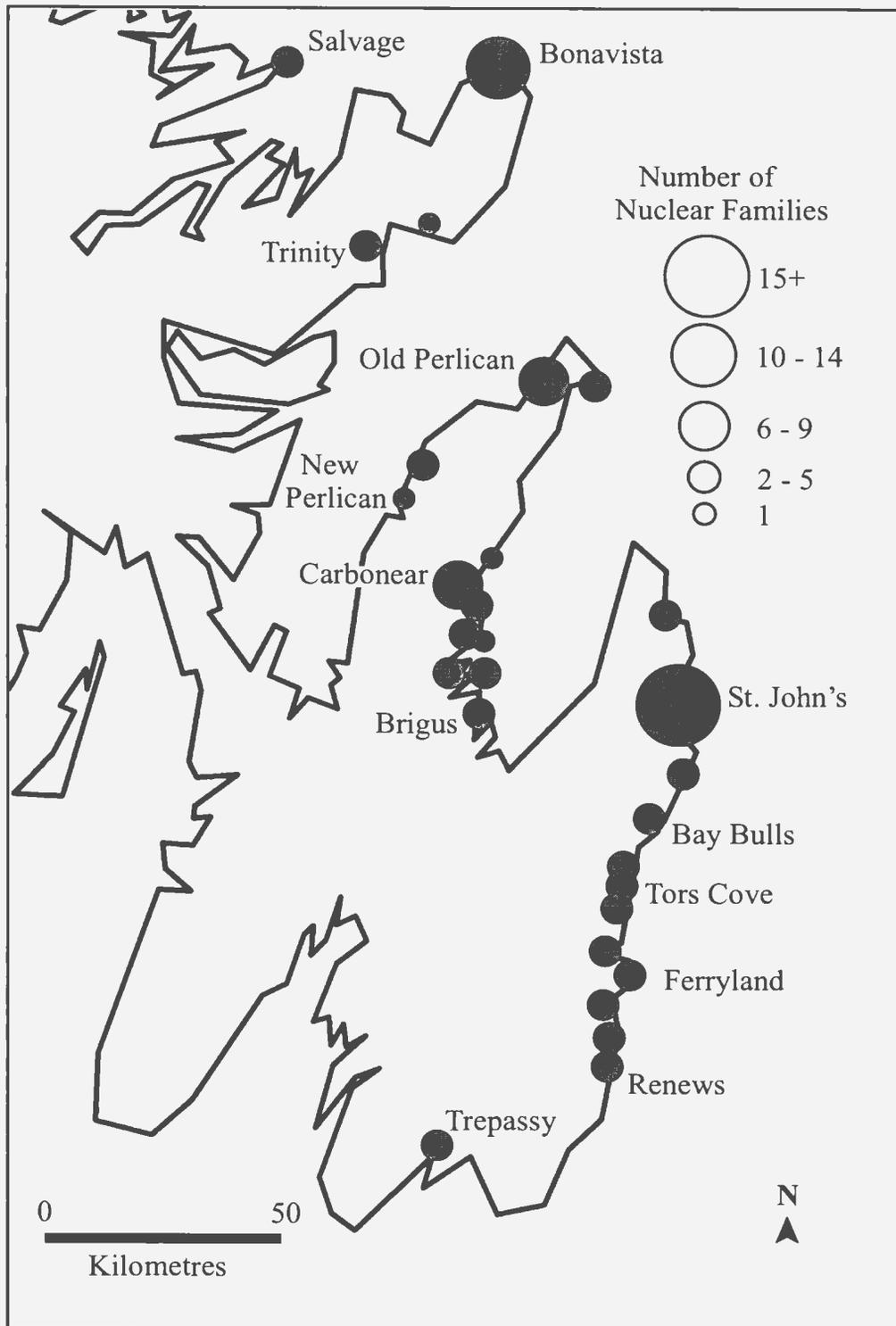
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<sup>22</sup> Hancock, "English Migration to Newfoundland," 16.

<sup>23</sup> Mannion, introduction in *Peopling*, 5; Hancock, "English Migration to Newfoundland," 17, 23.

<sup>24</sup> Mannion, introduction in *Peopling*, 1, 6; Hancock, "English Migration to Newfoundland," 17, 23.

<sup>25</sup> Hancock, "English Migration to Newfoundland," 23.



**Figure 3.4: English settlement in Newfoundland 1675-77**

Source: Adapted from W. Gordon Handcock, "English Migration to Newfoundland," in *The Peopling of Newfoundland* ed. John J. Mannion (St. John's: Memorial University of Newfoundland, 1977), 17.

**Table 3.2**  
**Immigration to Newfoundland 1723-1823**

<b>Period</b>	<b>Number of Years with Immigration Data</b>	<b>Total Immigration</b>	<b>Annual Rate</b>
1723-1749	18	1,732	96
1750-1791	16	8,045	502

Source: From W. Gordon Handcock, "English Migration to Newfoundland," in *The Peopling of Newfoundland*, ed. John J. Mannion (St. John's: Memorial University of Newfoundland, 1977), 23.

This population was to expand rapidly during the next few decades, both in terms of actual numbers, and in geographical spread around the island. Prior to the nineteenth century, the Newfoundland population was small but growing, and it was during this time that the open hearth technology discussed in this chapter was in use on the island as the primary means of providing the population with heat to warm their homes and cook their food. Mannion identifies 1780 to 1830 as the period of peak immigration to Newfoundland, and thus thousands of immigrants were pouring onto the island at the time. This was also the time when cast iron stoves were first being introduced.<sup>26</sup>

Most of the permanent population of Newfoundland came from England and Ireland, but the source of immigration was even more restricted than that. Most immigrants to the island were drawn from areas immediately surrounding the port cities that participated in the Newfoundland fishery, and therefore southwest England and southeast Ireland were the original homes of most Newfoundland residents. In England, the counties of Dorset, Devon, Somerset, and Hampshire were the main sources of immigrants.<sup>27</sup> Most Irish who immigrated to Newfoundland came from southwest Wexford, south Kilkenny, southeast Tipperary, southeast Cork, and Waterford.<sup>28</sup> Once in Newfoundland, there was a strong distinction between the English and Irish populations, much of which was due to religious differences, yet some communities consisted of immigrants from both countries.

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<sup>26</sup> Mannion, introduction in *Peopling*, 5.

<sup>27</sup> Handcock, "English Migration to Newfoundland," 26; *HAC Vol. II*, Plate 8.

<sup>28</sup> Mannion, introduction in *Peopling*, 7-8; *HAC Vol. II*, Plate 8.

Thus, the cultural traits and characteristics brought with the immigrants were modified as they melded in a new environment.

### **3.4 Eighteenth Century Heating and Cooking Technology**

People of European origin lived in Newfoundland, often tentatively, for a couple of centuries prior to the introduction to the island of the cast iron wood stove in the early nineteenth century, and during this time, the population needed to heat their homes and cook their food. To do this they burned the fuel most easily available to them, wood from the island's forests, in an open hearth, a technology immigrants brought with them when they came to the island. The term open hearth is used here to refer to an unenclosed fire. The fire may be situated simply on a hearthstone with nothing surrounding it, or it may be placed within walls and a chimney. The distinguishing traits are that the fire is visible and is open to the air of the room. The term open hearth will be used to refer to such fires that include cooking among their uses. Those used only for heating, in bedchambers for example, will be referred to as fireplaces.

#### **3.4.1 The Structure and Use of Open Hearths in England, Ireland, and Newfoundland**

Most of the small permanent population of Newfoundland at this time came from an English or Irish background, and it is therefore the heating and cooking technologies of these countries that the Newfoundland population used during the initial stages of settlement. Cast iron stoves were produced in continental Europe in the late fifteenth

century, and the first recorded manufacture of one occurred in Germany in 1475.<sup>29</sup> Soon after this, cast iron stoves were introduced to the Netherlands, Scandinavia, and parts of France, and before long they became the established mode of heating in these countries.<sup>30</sup> These stoves were used only for heating however, and an open hearth was still required for cooking. Despite the widespread presence of stoves in continental Europe, the population of the United Kingdom did not adopt this technology until the nineteenth century, at approximately the same time as did the Newfoundland population.<sup>31</sup> Thus, when English and Irish citizens began crossing the Atlantic to Canada, the heating and cooking technology with which they were familiar was simply that of the open hearth. These hearths were replicated, with some minor changes, in the Newfoundland situation as people began to settle on the island on a permanent basis.

Open hearths in Ireland and England differed to some extent, but many aspects of them were very similar, and they can be discussed simultaneously. Prior to the fifteenth century, both the Irish and English hearth fires were simply placed on an open hearthstone in the centre of the house. No chimney existed, and the smoke was left to escape through a hole in the roof.<sup>32</sup> Beginning in the fifteenth century, chimney flues came into use, situating the hearth in a semi-enclosed structure and directing smoke up

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<sup>29</sup> Peirce, *Fire on the Hearth*, 31.

<sup>30</sup> Peirce, *Fire on the Hearth*, 31; Brewer, *From Fireplace to Cookstove*, 18.

<sup>31</sup> Eveleigh, West, and Yarwood all discuss the gradual shift of the English population from open hearths and fireplaces to cast iron stoves throughout the nineteenth century. David J. Eveleigh, *Firegrates and Kitchen Ranges* (Princes Risborough, Aylesbury: Shire Publications, 1983); Trudy West, *The Fireplace in the Home* (North Vancouver: Douglas David & Charles, 1976); Doreen Yarwood, *The British Kitchen* (London: B.T. Batsford, 1981).

<sup>32</sup> Mannion, *Irish Settlements in Eastern Canada*, 140; West, *The Fireplace in the Home*, 29; Yarwood, *The British Kitchen*, 54; R.W. Brunskill *Traditional Buildings of Britain* (London: Victor Gollancz, 1992), 112.

the chimney.<sup>33</sup> In England these chimneys were generally built of stone or brick,<sup>34</sup> while in Ireland, a construction technique, known as wattle and daub, using woven sticks plastered with mud, was more common.<sup>35</sup> Wattle and daub chimneys were also used in England to some extent.<sup>36</sup> With the addition of a chimney, the hearth often shifted to a new location on an end wall of a house, although some remained centrally located.<sup>37</sup> Both centrally located and end positioned hearths were common in southeast Ireland and southwest England at the end of the eighteenth and beginning of the nineteenth centuries, when most immigrants arrived in Newfoundland.<sup>38</sup>

In their initial shelters, the immigrants returned to the simpler, and therefore faster and easier to construct, heating methods of their ancestors, placing their fire on a hearthstone and allowing the smoke to escape through a hole in the roof.<sup>39</sup> One difference, however, between this hearth and that of their forefathers, was that the Newfoundland inhabitants positioned their hearth at the end of their dwelling, while their fifteenth century antecedents placed theirs in the centre of their home.<sup>40</sup> One can assume that a centrally placed hearth would have been warmer, since heat from the fire would first have to pass

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<sup>33</sup> Yarwood, *The British Kitchen*, 54-57; West, *The Fireplace in the Home*, 29; Mannion, *Irish Settlements in Eastern Canada*, 140; R. W. Brunskill, *Illustrated Handbook of Vernacular Architecture*, 2<sup>nd</sup> ed. (London: Faber and Faber, 1987), 118-9; James Ayres, *Domestic Interiors: The British Tradition 1500-1850* (New Haven: Yale University Press, 2003), 13.

<sup>34</sup> West, *The Fireplace in the Home*, 32; Brunskill *Illustrated Handbook of Vernacular Architecture*.

<sup>35</sup> Mannion, *Irish Settlements in Eastern Canada*, 140.

<sup>36</sup> R.J. Brown, *The English Cottage* (Suffolk: St. Edmundsbury Press, 1979), 236.

<sup>37</sup> West, *The Fireplace in the Home*, 29-31; Brunskill *Illustrated Handbook of Vernacular Architecture*, 100-113.

<sup>38</sup> Brunskill, *Illustrated Handbook of Vernacular Architecture*, 197-8; Peter Child "Farmhouse building Traditions" in Peter Beacham, ed. *Devon Building: an introduction to local traditions* (Exeter: Devon Books, 1990), 40; Mannion, *Irish Settlements in Eastern Canada*, 141.

<sup>39</sup> *Ibid.*, 143.

<sup>40</sup> *Ibid.*; Mills, "Folk Architecture in Trinity Bay," 81.

through the rest of the house before escaping through chinks in the walls, and with this in mind, it may seem surprising that Newfoundland immigrants first chose to situate their hearths at the end of their dwellings. However, Brunskill mentions that the "central position would have been very inconvenient" in smaller homes.<sup>41</sup> It is likely that Newfoundland residents chose the heat loss associated with the end position over the constant nuisance of having a hot, dirty fixture breaking up the central living and working space of a dwelling.

Once the immigrants constructed a more permanent dwelling, a chimney was built to contain the hearth. Among the Newfoundland Irish this hearth was placed in the centre of the house, creating a partition between the kitchen and the parlour, or "front" room.<sup>42</sup> Mills has found evidence that the hearths of the English immigrants in the Trinity Bay area, if not elsewhere, were located at the gable end of the house.<sup>43</sup> However, O'Dea mentions that centrally located chimneys were occasionally found in the homes of English immigrants as well.<sup>44</sup> Some of these hearths, particularly those of the Irish immigrants, were very large. Mannion describes these Newfoundland Irish hearths as follows:

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<sup>41</sup> Brunskill, *Traditional Buildings of Britain*, 112.

<sup>42</sup> *Ibid.*, 149.

<sup>43</sup> Mills, "Folk Architecture in Trinity Bay," 86.

<sup>44</sup> O'Dea, "Cooking and Heating Technology," 13.

using local stone, walls from 2 to 3 feet in thickness were built up on 3 sides to a height of 6 feet. The rear wall of this 3-sided structure measured up to 14 feet in length. Two projecting walls, averaging 7 feet each, surrounded the hearth floor and were linked by a 10 by 10 inch oak beam or balk to complete the basic architecture of the hearth. A fourth wall rested on this wooden member to form a stone chimney that tapered upwards from the level of the balk to a summit measuring not more than 3 square feet.<sup>45</sup>

These were very large hearths, quite unlike the fireplaces in use today. They were large enough for people to sit in, and benches were placed along the side walls of the hearth for this purpose, allowing residents to sit in close proximity to the fire, the only source of warmth against the cold Newfoundland winters. Figure 3.5 illustrates the type of large hearth constructed by Irish immigrants in Newfoundland, including a bench for sitting on.

Hearths in England were also very large. Those in yeomen's homes were up to ten feet wide, while even those in simpler cottages were six or seven feet wide.<sup>46</sup> Like those of the Irish, the English hearths often also had seats contained within them.<sup>47</sup> There is little evidence that English immigrants in Newfoundland built such hearths, but Mills appears to be the only scholar to have researched the subject. The references to open hearths that he came across among English immigrants in Trinity Bay provide a picture of smaller hearths, perhaps only four or five feet wide.<sup>48</sup>

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<sup>45</sup> Mannion, *Irish Settlements in Eastern Canada*, 149.

<sup>46</sup> West, *The Fireplace in the Home*, 34.

<sup>47</sup> Ibid.; Brunskill, *Traditional Buildings of Britain*, 112-114.

<sup>48</sup> David Mills, interview by author, St. John's, Newfoundland, 24 November 2004.



**Figure 3.5: A Newfoundland Irish open hearth, including a bench for sitting on**

Source: John J. Mannion, *Irish Settlements in Eastern Canada*. (Toronto: University of Toronto Press, 1974), 150.

Unlike the wattle and daub versions in Ireland, chimneys in the Newfoundland Irish dwellings were built from local stone, with lime and sand used as a mortar.<sup>49</sup> This demonstrates an adaptation by the immigrant population to the resources and conditions of the local environment. Stone was readily available in Newfoundland, and thus was a practical material for chimney construction. Wattle and daub chimneys were less common in Newfoundland than they had been in Ireland, although citizens along the Cape Shore used this type of chimney construction.<sup>50</sup> Stone and brick chimneys were also built by the Newfoundland English, continuing a tradition familiar in their homeland.<sup>51</sup>

### 3.4.2 Cooking on the Open Hearth

In Ireland, England, and Newfoundland, an iron bar spanned the width of the hearth, and from this bar hung a notched iron rod or chain, which was used for hanging cooking pots at various heights above the fire.<sup>52</sup> In Elliston, if not elsewhere on the island, this notched iron bar was referred to as a “crook and crottles,” with crottles referring to the notches in the iron.<sup>53</sup> In stone chimneys, iron cranes sometimes replaced the iron bar. These swinging cranes gave the cook more flexibility in regulating cooking temperatures,

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<sup>49</sup> Mannion, *Irish Settlements in Eastern Canada*, 149.

<sup>50</sup> Ibid.

<sup>51</sup> Mills, "Folk Architecture in Trinity Bay," 83, 86.

<sup>52</sup> Ibid.; Eveleigh, *Firegrates and Kitchen Ranges*, 16; Doreen Yarwood, *The English Home: A Thousand Years of Furnishing and Decoration* 4<sup>th</sup> ed. (London: B.T. Batsford, 1956), 227; West, *The Fireplace in the Home*, 34.

<sup>53</sup> Hilda Chaulk Murray, *More Than Fifty Percent: Woman's Life in a Newfoundland Outport 1900-1950* (St. John's: Breakwater Books, 1979), 101-2.

by allowing her to easily move the pots nearer to or further from the fire.<sup>54</sup> Apparently the iron crane was rarely used by Irish immigrants on the Avalon Peninsula,<sup>55</sup> but residents at least had the option of purchasing such cranes, since references to cranes for sale occasionally appear in nineteenth century newspaper advertisements,<sup>56</sup> like that advertised in Figure 3.6. However, it may have been only the immigrants of English origin who purchased the cranes.

Most meals in Ireland, England, and Newfoundland were prepared in a large cast-iron pot suspended over the fire.<sup>57</sup> A bake oven, also often called a bake pot, was used for baking bread. Items to be baked were placed in this three-legged cast iron pot and covered with a lid. The bake oven was then set in the fire. Coals from the fire were raked around it and on top of the lid, warming the implement and baking the food inside.<sup>58</sup> Ovens were built into the side wall of the hearth and chimney complex in larger homes in England,<sup>59</sup> but those who were unable to afford an oven made do with a griddle or bakestone covered with a metal cooking pot.<sup>60</sup> There is no evidence of ovens built into Newfoundland hearths. Spits were often used in England for cooking joints of meat over

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<sup>54</sup> Ayres, *Domestic Interiors*, 17.

<sup>55</sup> Mannion, *Irish Settlements in Eastern Canada*, 149.

<sup>56</sup> Advertisements for Gleeson's Ironmongery Store, *Harbour Grace (Newfoundland) Standard* 4 January 1860 and 3 October 1860.

<sup>57</sup> Mannion, *Irish Settlements in Eastern Canada*, 162; West, *The Fireplace in the Home*, 34-5; Yarwood *The British Kitchen*, 62.

<sup>58</sup> Yarwood, *The British Kitchen*, 81-83; *DNE* 2<sup>nd</sup> ed. s.v. "Bake pot."

<sup>59</sup> West, *The Fireplace in the Home*, 227; Ayres, *Domestic Interiors*, 28-9; Brunskill, *Traditional Buildings of Britain*, 111.

<sup>60</sup> Yarwood, *The British Kitchen*, 81.

**HALT! FRONT!**

**A FOUNDRY DEPOT**

IS NOW ATTACHED TO

**GLEESON'S IRONMONGERY STORE,**

Where can be had **KITCHEN RANGES,**  
**REGISTERS, and Half-Register**  
**GRATES, BOGIES, STOVES,**  
**POTS, PANS, &c.**

The Special Attention of Householders  
is called to the New Style of

**Cooking Ovens**

(Large and Small,)

With GRATE attached in which  
Wood can be consumed. The

COOKING OVEN can be pur-  
chased with or with-  
out the Grate, and  
heated with ei-  
ther Wood  
or Coal.

**THE COOKING GRATE**

Is a neat and economical article; in  
appearance resembles a Parlour or  
Drawing Room Grate, but with all the  
requisites of the common Kitchen Grate  
for burning LONG junks of Wood if re-  
quired.

CRANES, DOG IRONS, &c.

Also, per "Marcia,"

**FAIRBANKS' PLATFORM SCALES,**

For Store, from 200 to 600 lbs,  
COUNTER SCALES, with scoops and  
Platform,

From 1-2 to 2-10 lbs.

Even BALANCE SCALES for Counter  
only. The Zephyr Beam will tell  
the weight of a Feather or a Wa-  
fer. Used throughout the States  
in Post Offices and Banking  
Establishments.

*Sky Rockets, and other Fireworks.*

St. John's, Oct. 3. 1860.

**Figure 3.6: 1860 advertisement for Gleeson's Ironmongery Store, including cranes and dog irons among the articles advertised**

Source: *Harbour Grace Standard* 3 October 1860

the open fire,<sup>61</sup> but there is little evidence of the use of these spits in Newfoundland, perhaps because fish and salted meats were the main protein sources of the Newfoundland population. Cast-iron cooking utensils were some of the few possessions immigrants brought with them when they immigrated,<sup>62</sup> representing a direct transfer of material culture across the Atlantic.

### 3.4.3 Fuels Used on the Open Hearth

Both Brunskill and Yarwood recognize the seventeenth century as the era when wood became a less common fuel in English hearths, as it was replaced by coal,<sup>63</sup> although rural areas were still burning wood in the late eighteenth century, and peat and dried dung were also burned in some of the more remote areas.<sup>64</sup> English immigrants to Newfoundland could feasibly have been using either wood or coal as their fuel source prior to immigration. Andirons, also known as dogirons and brand-irons, were two upright iron bars with small supporting legs, used to hold fuel logs when wood was burned. Ceramic andirons were also made and used in Devon.<sup>65</sup> The use of coal in England meant that andirons had been abandoned in favour of a cast or wrought iron grate or firebasket in which to hold the coal. These grates were fairly small, since coal had to be kept in a compact mound in order to maintain a sufficient heat for

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<sup>61</sup> For a more detailed description of the assorted hearth implements used by the English, see Yarwood, *The British Kitchen*, 54-83.

<sup>62</sup> Mannion, *Irish Settlements*, 162.

<sup>63</sup> Brunskill, *Traditional Buildings of Britain*, 115; Yarwood, *The British Kitchen*, 57-9.

<sup>64</sup> Eveleigh, *Firegrates and Kitchen Ranges*, 3-4; Yarwood, *The British Kitchen*, 57-8; Ayres, *Domestic Interiors*, 16-7.

<sup>65</sup> *Ibid.*, 14.

combustion.<sup>66</sup> In Ireland, peat was the main fuel source, and it also did not require the use of andirons.<sup>67</sup>

In Newfoundland, immigrant traditions changed somewhat to suit the available materials the Newfoundland environment provided. Immigrants who had burned coal in their homeland initially abandoned it as a fuel in favour of cheap and easily available local wood. Later, coal was again adopted by some of the population, and this will be discussed in more detail in chapter six. Initially, however, wood was the main fuel used by Newfoundland inhabitants. This meant that immigrants in Newfoundland returned to the andirons their ancestors had used generations before in England. Such atavistic tendencies were common among immigrants to Canada, since they settled in fairly undisturbed natural environments, the like of which had not been experienced for generations in the highly modified cultural landscapes of their homelands. Those English who were still burning wood prior to immigration would have been familiar with andirons. It is probable that many English Newfoundland immigrants came into this category.

Peat was used on a limited basis in Newfoundland, but wood was the common fuel throughout much of the island.<sup>68</sup> Most Irish immigrants adapted to the natural environment of Newfoundland by switching from peat to wood as their principal fuel

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<sup>66</sup> Eveleigh, *Firegrates and Kitchen Ranged*, 3.

<sup>67</sup> Mannion, *Irish Settlements in Eastern Canada*, 163.

<sup>68</sup> Mannion, *Irish Settlements in Eastern Canada*, 163; Benedict Ryan, "Firewood Cutting at Renews: It's Role in the Survival of a Newfoundland Outport" *The Newfoundland Quarterly* 76 no. 3 (Fall 1980), 53.

source. This meant that many of them began using andirons to hold the burning wood. Thus, the immigrants largely changed their methods of heating and cooking to suit their new situation, abandoning the peat burning traditions with which they were familiar. In this way, the natural resources of Newfoundland caused a change in the Irish heating and cooking technology. Because wood was available, they used it as fuel, and because wood burned better when it was elevated to improve the draft from below, andirons were adopted to hold the burning wood. Thus, the material culture of the island's inhabitants to some extent reflected the natural resources that were available to the population.

It was not just the ready availability of wood in the Newfoundland setting that enticed immigrants to use this alternate fuel source. Firewood was an essential component of the cashless economy in Newfoundland, and it allowed the population to provide themselves with the warmth needed for survival without being dependent upon merchants or utility companies for their fuel. Wood was free for the taking, provided one was willing to spend the time and energy needed to cut and haul it, while imported coal had to be bought from merchants.

### **3.5 Eighteenth Century Use of Forest Resources**

The open hearth technology used by Newfoundland residents was a very inefficient method of heating and cooking. Roughly ninety five percent of the heat created by the

burning wood went directly up the chimney.<sup>69</sup> Very little of this heat actually warmed the room. Thus, enormous quantities of wood were required by the Newfoundland population, both for cooking food and for warming homes, although no one has been able to determine exactly how much wood the Newfoundland population consumed for fuel. Head has calculated that each Newfoundland family used fifteen cords of wood per year, but he stresses that this is a very conservative estimate, particularly since he was using data from the eighteenth century garrison at St. John's, where soldiers would most likely not have been cooking in their rooms.<sup>70</sup> The fuel wood needs of the soldiers thus do not necessarily match with those of a Newfoundland fishing household. Wynn has estimated that New Brunswick residents used between twenty five and thirty cords of wood per family per year.<sup>71</sup> Brewer states that "the typical household in colonial New England consumed up to forty cords of wood annually..."<sup>72</sup> All of these numbers are estimates however, and it is impossible to know exactly how much firewood a society consumed. As well, the differing climates of Newfoundland, New Brunswick, and New England must have influenced the varying fuel needs of the peoples living there, and the amount of wood required would have varied depending on the type of wood used. Newfoundland does not have the extensive hardwood or mixed forests found in other parts of North America. In contrast to areas such as Montreal, where maple, beech, cherry, and mixed

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<sup>69</sup> Government of Newfoundland and Labrador, Department of Mines and Energy, Energy Branch, *Heating With Wood in Newfoundland and Labrador*. (St. John's: Department of Mines and Energy, 1985), 7.

<sup>70</sup> C. Grant Head, "The changing geography of Newfoundland," 451.

<sup>71</sup> Wynn, *Timber Colony*, 19.

<sup>72</sup> Brewer, *From Fireplace to Cookstove*, 1.

wood accounted most of the fuel wood burned,<sup>73</sup> Newfoundland communities primarily used the faster and cooler burning softwood varieties. This would have influenced the amount of wood used by the Newfoundland population in relation to other areas of North America, since, in comparison with hardwood, more softwood was required to provide the same amount of heat for an equivalent length of time. Although Head has estimated Newfoundland wood use at fifteen cords per year, it would likely have been higher than that. A lower total does not seem probable for the period when the population was relying entirely upon wood heat from an open hearth.

It is useful to determine how many trees were required to supply this minimal fifteen cords of wood annually, and some generalized calculations can provide an approximate number of trees. In Newfoundland, firewood was measured in sticks. A stick was a limbed tree. In other words, it was a tree with all the branches cut off, essentially the tree trunk. The *Dictionary of Newfoundland English* defines a stick as “a timber-tree; the trunk of a tree used for [various] building purposes, fuel, etc.”<sup>74</sup> Sticks of wood were hauled out of the forests and stacked by each household. The sticks could then dry and be cut into appropriate sizes for burning. Figure 3.7 illustrates a contemporary pile of sticks drying beside a Newfoundland home. Stick size varied according to the size of the tree from which it was cut, but a rough average can be used. Head, Faris, and Mednis have all given average diameters and lengths of sticks of firewood.<sup>75</sup> Based on these

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<sup>73</sup> R. Sweeney, *Town/Country Relations: the case of firewood* (Montreal: n.p., 1988)

<sup>74</sup> *DNE*, 2<sup>nd</sup> ed., s.v. "sticks."

<sup>75</sup> Head, "Settlement Migration in Bonavista Bay," 99-100; James C. Faris, *Cat Harbour: A Newfoundland fishing settlement* (St. John's: Institute of Social and Economic Research Memorial



**Figure 3.7: Sticks of wood stacked outside a Newfoundland home**

Source: Dr. Jo Shawyer, Dept. of Geography, Memorial University of Newfoundland

figures, an average stick seems to have been approximately six inches in diameter and twelve feet long. Details on these measurements can be found in Appendix One.

Figure 3.8 shows a contemporary pile of firewood sticks near Highway 230 on the Bonavista Peninsula. These sticks, as well as those in most of the other wood piles seen on the peninsula, have very similar dimensions to the averages just mentioned.<sup>76</sup>

A cord of wood is a pile four feet high, eight feet wide, and four feet deep. There are several different ways of stacking sticks of firewood into a pile of these dimensions, and Appendix One provides further explanation on the different methods of determining the number of sticks of wood that fit into one cord. It should be noted that this was a generalized exercise, and in reality each stick is of different dimensions. However, on average, approximately 47 sticks of firewood were required to make up a cord of wood (Figure 3.9). Thus, if a Newfoundland family was using Head's conservative fifteen cords per year, they still would have been burning at least 705 sticks per year in their open hearth. That is 705 trees that would have had to have been cut from the surrounding forests annually simply to keep one family warm for the year.

The forests of Newfoundland were put under increasing demand as the population of the island grew. This was combined with the heavy use of forest resources for the items needed by the fishery, such as boats, houses, flakes, and stages. In some areas of the

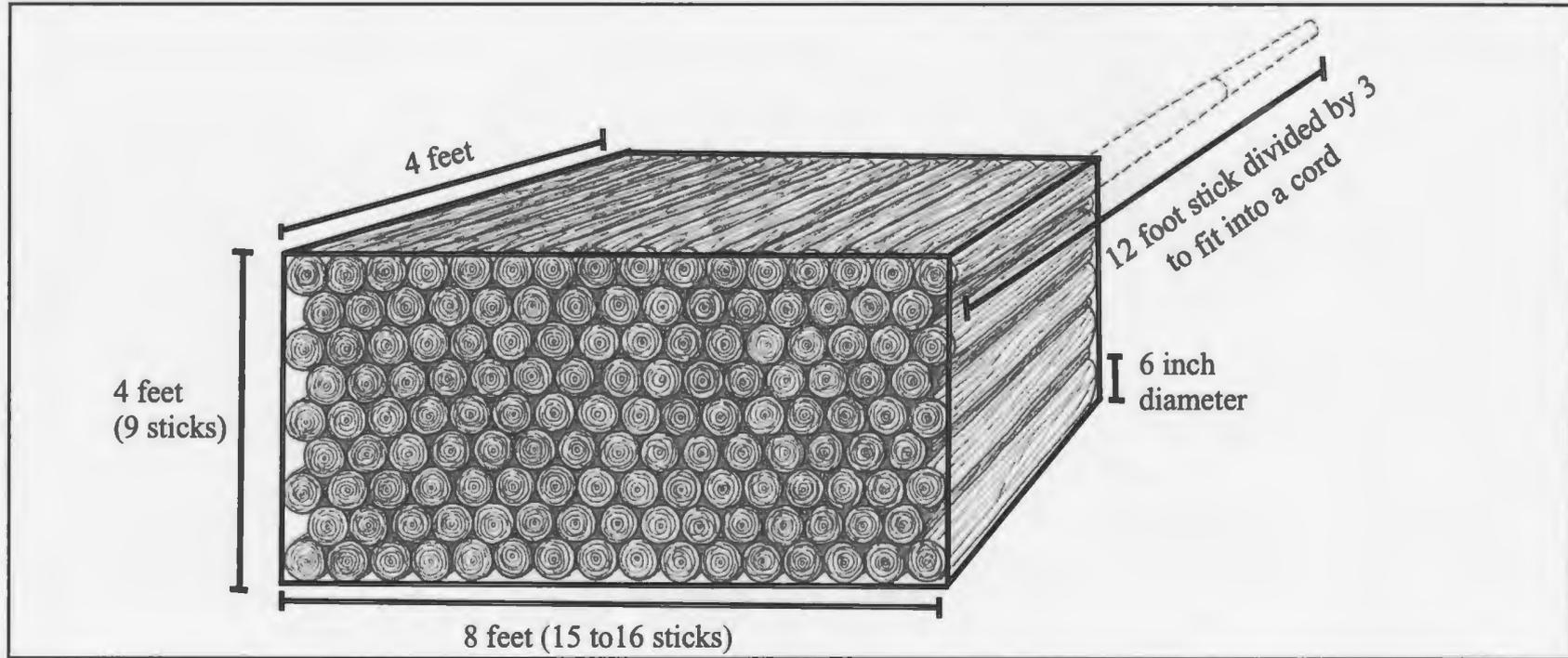
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University of Newfoundland, 1973), 31; R.J. Mednis *A Phytogeographical analysis of the occurrence of vegetation patterns on Fogo Island, Newfoundland-Labrador, Canada* (Ph.D. diss., Boston University, 1971), 32-33.

<sup>76</sup> Personal observation by author, 13-15 November 2004.



**Figure 3.8: A pile of average-sized sticks of firewood, stacked along Highway 230 in the Bonavista Peninsula in November 2004. These sticks are approximately similar to the dimensions given by Head, Faris, and Mednis of sticks being 4 to 8 inches in diameter and 10 to 14 feet long.**



**Figure 3.9: Calculating the number of sticks of firewood needed to make up one cord of wood**

island, this extensive use became problematic and wood shortages occurred. As the largest settlement on the island, St. John's had problems of wood scarcity, for both firewood and other purposes. Head has researched this situation, and found a variety of sources, from as early as the seventeenth century, mentioning problems of wood shortages. In 1680 it was noted that "...there is a Store of wood in all places for many ages and generally Neer at hand except in some particular places farr to fetch as at St. John's, by Reason of ye Many plantrs Residing and many ffishers resorting thither..."<sup>77</sup> Similarly, in 1684, Captain Francis Wheler commented, "at St. John's they go two miles to fetch their wood owing to the demand for fuel, but elsewhere there is no scarcity."<sup>78</sup> At the very beginning of the eighteenth century, it was hypothesized that in fifty years, wood shortages would be so severe in the St. John's area that ships' crews would have to resort to buying the timber they needed, because it would no longer be possible to obtain it from the local forests.<sup>79</sup> Towards the end of the eighteenth century, Palliser noted that the inhabitants' "great Consumption of Fewell in the Winter causes all Materials for the Stages Flakes and Huts, to be Scarce and dear, even dearer than the same articles are in England."<sup>80</sup>

The wood needs of residents of St. John's had apparently exhausted the area's forest resources fairly rapidly. This fits into the category described earlier as *consumption*

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<sup>77</sup> CO 1/46 , f. 33 ff, as quoted by C. Grant Head, *Eighteenth Century Newfoundland*, (Toronto: McClelland and Stewart, 1976), 19.

<sup>78</sup> "Captain Francis Wheler, R.N. of H.M.S. Tiger to William Blathwayt [Oct. 27, 1684] [Item 1907, Vol 11 (1681-1685) pp. 707-710 " in *Calendar of State Papers, Colonial: North America and the West Indies* [CD-ROM] (N.p.: Routledge, 2000)

<sup>79</sup> Head, *Eighteenth Century Newfoundland*, 19.

<sup>80</sup> Palliser, as quoted by Head, *Eighteenth Century*, 150.

*shortages*. Prior to extensive settlement in the area, forests had covered the hillsides around the harbour. There was thus a supply of wood that inhabitants could use, and since these forests surrounded much of the town itself, access to the wood was not a problem. However, as noted above, the forests around the settlement were being depleted, and wood shortages loomed. It is interesting to note that Palliser mentioned the cause of this shortage to be simply the use of the forests for fuel, and not for the stages, flakes, and huts for which "materials" were needed. Providing a supply of firewood was not the only incentive to cut down the forests of the area, and the need for timber to build structures associated with the fishery also put pressure on local wood resources. However, the fuel wood needs of the residents *were* enormous, and their effect on the surrounding forests should not be overlooked. Around St. John's these fuel wood needs, in combination with the wood requirements of the fishery, appear to have caused *consumption shortages*, creating problems for residents who were depending on wood from local forests to provide warmth throughout the winter months.

Smith states that over use of the forests, combined with fires, depleted the forest resources.<sup>81</sup> This undoubtedly was often the case, and the need for firewood and building materials decimated some of the smaller communities' local forests. However, it should not immediately be assumed that these communities were also victims of *consumption shortages*. The amount of wood initially available to a population must also be considered, and it seems to have been *site shortages* that caused the firewood scarcities in

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<sup>81</sup> Smith, "In Winter Quarters," 16.

some of these smaller areas. Prior to the introduction of motor boats in the twentieth century, fishing communities had to be located in close proximity to the fishing grounds. The wooden fishing boats had to be rowed or sailed out to the fishing grounds each day, sometimes several times a day, and there was a limit to the distance it was feasible to travel. Communities tended to be located as close to the grounds as possible, and thus not always in the best locations for obtaining firewood or shelter. These locations near the fishing grounds were often peninsula headlands and islands. Islands and peninsulas have less land area, and therefore potentially less wood, available within the distance that residents are willing, and able, to travel to procure firewood than do coastal settlements on an otherwise “straight shore.”<sup>82</sup> Even communities on such straight coasts in theory have access to only half of the wood available to an inland community. Thus, communities on islands and peninsulas have limited forest resources, and this was an issue for many Newfoundland communities. Feltham mentions that people on “the small outer islands” in Bonavista Bay, some of which were only a few acres in area, could not easily go inland from their homes to gather firewood as residents on the mainland were in the habit of doing. The small islands upon which they resided did not provide enough wood to meet their needs. Instead, inhabitants of these small islands used larger, well-wooded, uninhabited islands in the area as a source of fuel wood.<sup>83</sup> Residents of islands and peninsula headlands had limited wood supplies upon which they could draw, and they soon faced *site shortages*.

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<sup>82</sup> By “straight shore” is meant a coastline which is not markedly embayed. In Newfoundland, for example, the approximately 45 kilometre stretch of the northeast coast west of Cape Freels has been given the proper (geographical) name of the Straight Shore.

<sup>83</sup> John Feltham, *Bonavista Bay Revisited* (St. John’s: Harry Cuff Publications, 1992), 27.

To add to this problem, Damman has recognized two regions of the island that he refers to as barrens. The first, and less extreme, of the two is his Maritime Barrens ecoregion (Figure 3.2). This region includes most of the Avalon Peninsula and the Southern coast of the island. Damman describes the region as follows: “the ecoregion is characterized by extensive barren areas consisting mainly of dwarf shrub heaths, bogs, and shallow fens. Forests are most common in valleys, but they can be found occasionally on hill tops and slopes.”<sup>84</sup> Forests are by no means absent from the region, but forest resources are somewhat limited. The second barren region covers the “southernmost parts of the southeastern peninsulas, the Avalon and Burin Peninsulas, and the extreme coastal areas near Bay de Verde and Cape Freels.”<sup>85</sup> These areas have very little forest cover, and Damman has labelled them the Eastern Hyper-oceanic Barrens ecoregion (Figure 3.2). He describes these areas as “exposed coastal barrens completely without forest cover. The area is covered with a dense moss-lichen carpet, blanket bogs, and thickets of procumbent conifers less than 1 m high (tuckamoor).”<sup>86</sup> They contain very few trees for firewood or other purposes. The Maritime Barrens ecoregion contains the areas on the island most heavily populated in the eighteenth and nineteenth centuries, since it includes the area around St. John's, as well as Conception and Trinity Bays. Thus, the small land area of islands and peninsula headlands was combined with areas of barrens to create *site shortages* in many outport communities.

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<sup>84</sup> Damman, "Ecological subdivision of Newfoundland," 185.

<sup>85</sup> Ibid., 189-90.

<sup>86</sup> Ibid., 190.

It should also be noted that even in forested areas, the trees were often not as large near the coast as they were inland. Damman explains that in his Northshore ecoregion, “the quality and height of the forests deteriorate toward the coast and with increased wind exposure.”<sup>87</sup> Thus, though these coastal areas may be forested, the trees will not provide as much wood, and cleared areas will not regenerate as quickly, as the better quality forests inland. Though these coastal areas are desirable because of their access to fish resources, they are somewhat wanting in forest resources. *Site shortages* due to such conditions seem to have been the main type of fuel wood shortage in Newfoundland, because most communities were in coastal locations.

As a means of coping with these *site shortages*, many Newfoundland residents of the eighteenth and nineteenth centuries practiced winterhousing. Smith has documented this phenomenon among the Newfoundland population, a practice to which Newfoundland residents refer with the expressions, “going into winter quarters,” “going up in tilts,” and “shifting,” as well as “winterhousing.”<sup>88</sup> Winterhousing was a form of transhumance, in which residents moved between two distinct locations each year. Pope defines winterhousing as “the practice of seasonal residence inland, close to supplies of firewood.”<sup>89</sup> During the spring, summer, and fall, most inhabitants of Newfoundland lived in coastal fishing communities. Which often had limited forest resources. During

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<sup>87</sup> Ibid., 177.

<sup>88</sup> Smith, “Winter-houses and Winter Migrations;” idem, “In Winter Quarters;” idem, “Transhumance in Atlantic Canada.”

<sup>89</sup> Peter E. Pope, *Fish into Wine: The Newfoundland Plantation in the Seventeenth Century* (Chapel Hill: University of North Carolina Press, 2004), 443.

the winter months, these locations were temporarily abandoned as the citizens moved to their winter houses, usually in a less exposed, wooded inland area, although occasionally in another coastal location.

Mattie describes winterhousing as “a survival technique to cope with unusually harsh environmental and economic conditions along the coast,” thus highlighting the role the climate and natural resources played in inducing the population to practice this form of transhumance.<sup>90</sup> Access to winter game for food and fur, as well as freshwater fish were some of the reasons behind this yearly migration. However, the main reason that Smith identifies behind the process of winterhousing is a need for an adequate supply of firewood. He writes, “as the slow-growing coastal forests were depleted through overcutting and fires, time and effort expended to obtain fuel increased... It was often more economical to quit the outport after the close of fishing and move to a *locale* with a dependable supply of firewood and some shelter from the gales and cold.”<sup>91</sup> It was often difficult to obtain a sufficient supply of fuel wood in the coastal settlements, and thus the residents moved to inland locations where firewood was more abundant. “The need for firewood, and secondarily for building materials, seems to have been the critical variable in most cases in promoting winter migrations, particularly in those areas where the codfishery ended in early autumn,” Smith has determined.<sup>92</sup> A related benefit to the winter locations inhabited by the Newfoundland population was that the increased

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<sup>90</sup> Mattie, *Winterhousing in Newfoundland*, 551.

<sup>91</sup> Smith, "Transhumance in Atlantic Canada," 82-3.

<sup>92</sup> Smith, "In Winter Quarters," 16.

number of trees provided more shelter than exposed coastal sites, and thus it was somewhat easier to heat the winter houses because they were less exposed to the elements.<sup>93</sup> In the words of William Elder, an Anglican missionary who commented on the process of winterhousing on Fogo Island, "it is entirely for the sake of shelter & the abundance of wood that they remove to these winter quarters."<sup>94</sup>

Pope points out that initially, winterhousing was more of a transition towards stability than transience, since seventeenth century planters practiced this form of transhumance as an alternative to returning to Europe each winter.<sup>95</sup> Both Pope and Smith feel that the practice of winterhousing began in the seventeenth century,<sup>96</sup> and most of the Newfoundland population was practicing this form of transhumance from the early eighteenth until the late nineteenth century, although in some communities the phenomenon continued until the end of the Second World War.<sup>97</sup>

Although Smith, Pope, and Mattie are the only scholars who have discussed winterhousing in any detail, many other authors make reference to the process in their works. Murray emphasizes the importance of winter houses to Bonavista residents for cutting firewood and building materials for the upcoming year.<sup>98</sup> This provided residents of the exposed, barren coastal community with a means of obtaining the wood resources

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<sup>93</sup> Smith, "Transhumance in Atlantic Canada," 82-3.

<sup>94</sup> William Elder, as quoted by Smith, "Winter-houses and Winter Migrations," 595.

<sup>95</sup> Pope, *Fish into Wine*, 248-251.

<sup>96</sup> Smith, "Winter-houses and Winter Migrations," 594; Pope, *Fish into Wine*, 427.

<sup>97</sup> Smith, "In Winter Quarters," 22; idem, "Transhumance in Atlantic Canada," 83.

<sup>98</sup> Murray, *More Than Fifty Percent*, 99.

necessary to heat and feed themselves throughout the year. Faris mentions that the peninsula on which Cat Harbour (Lumsden) is located was at one time forested, but the trees were cut down for use by the earliest settlers in the area. Residents of the nineteenth and twentieth centuries had to travel to nearby forests on the mainland to gather firewood.<sup>99</sup> He writes that prior to the introduction of livestock in the early nineteenth century, “fishermen moved into the nearby forest each winter as they had no means for transporting winter fuel to the headland.”<sup>100</sup> Cokes explains that some families from the south coast wintered in the forests of Bay d’Espoir to “be near a source of fuel, to be nearer the caribou and also to make hoops, staves and shingles for sale, to cut fuel, and to saw logs to barter with the merchant for food and fishing supplies.”<sup>101</sup> Kendall and Kendall state that in the nineteenth century, the islands around Ramea were densely wooded, and “not only was there a supply of wood for fuel and building purposes but many of the early fishermen hauled up their boats in the fall and went to live in winterhouses among the sheltering trees.”<sup>102</sup> MacKinnon mentions that residents of the Codroy Valley had separate summer and winter houses, with the winter shelters located about six miles inland.<sup>103</sup> Newfoundlanders were not the only ones practicing this form of transhumance. Fishermen in Louisbourg did the same, as did the HBC men at

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<sup>99</sup> Faris, *Cat Harbour*, 30-1.

<sup>100</sup> *Ibid.*, 34.

<sup>101</sup> Edward Cokes, “The Spatial Patterns of Log Cutting in Bay D’Espoir, 1895-1922” (MA diss., Memorial University of Newfoundland, 1973), 27, 38.

<sup>102</sup> Victor Kendall and Victor G. Kendall, *Out of the Sea: A History of Ramea* (St. John’s, Harry Cuff, 1991), 2.

<sup>103</sup> MacKinnon, *Vernacular Architecture in the Codroy Valley*, 16, 30.

Churchill mentioned earlier.<sup>104</sup> The phenomenon also occurred in parts of Labrador, Quebec, and Prince Edward Island.<sup>105</sup> However, as Pope has stated, "site seasonality, whether in inner-bay winter-housing territory or on outer-headland summer fishing grounds, is an indispensable key to understanding early modern Newfoundland."<sup>106</sup> It was a central practice in the struggle to stay warm, and one which allowed the Newfoundland population to cope with firewood shortages brought on by a continuous search for fuel and initially sparse forest resources.

Thus, Newfoundland in the eighteenth and nineteenth centuries was experiencing fuel wood shortages in many areas, and this forced many residents to move to inland locations with more bountiful firewood supplies for the winter months. For most of the island, it appears to have been *site shortages* that prompted this inland retreat each year. St. John's was not the only area, however, that experienced *consumption shortages*. This was a problem in some of the other communities as well, such as those around Conception Bay. The Conception Bay communities differed from most other communities on the island, because there were too many people in the area to make winterhousing a feasible option. Shortages came later to these areas than to St. John's. Brown has mentioned that "by the early nineteenth century many of the older communities in Conception Bay had depleted the forest resources in their immediate area, and were having to go further afield for

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<sup>104</sup> Stephen J. Hornsby, *Nineteenth-Century Cape Breton: a historical geography* (Montreal: McGill-Queen's University, 1992), 92; Ball, "Timber," 54.

<sup>105</sup> Smith, "Transhumance in Atlantic Canada," 83.

<sup>106</sup> Pope, *Fish into Wine*, 252.

fuel.”<sup>107</sup> This was somewhat later than the references to shortages around St. John’s, and was around the same time as the first cast iron stoves were being introduced to the island.

The third type of wood shortages that has been identified, *access shortages*, seems to have played a very minor role in the Newfoundland context. Access shortages might occur when there was sufficient wood in an area to meet a population’s needs, yet due to physical or legal barriers, the residents could not gain access to the wood supply.

Potential physical barriers in Newfoundland may have been the numerous bogs and ponds, which might stand between a resident and the trees he wished to harvest.

However, Newfoundland residents had a seasonal cycle for resource use. The spring, summer, and fall were filled with the activities of the fishery and kitchen gardens, leaving little time to gather wood. The winter months were when the population had time to collect wood; during this time, frozen ponds and bogs, as well as snow cover on the rest of the ground, were easy to travel over, facilitating access to the forest resources. Those who gathered firewood on islands also cut wood during the winter, but waited until the surrounding ocean was free of ice, generally in April, before loading the wood into boats to transport it home.<sup>108</sup> Physical barriers to wood supplies were thus not generally a problem in Newfoundland.

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<sup>107</sup> Howard C. Brown, introduction in *Conception Bay South Past and Present* (n.p.: Conception Bay South Heritage Society, 1988), 1.

<sup>108</sup> Feltham, *Bonavista Bay Revisited*, 32.

Legal barriers were the other way in which access shortages might occur, but these also do not seem to have been problematic in Newfoundland. Because most of Newfoundland was not settled with a systematic land granting scheme in which large lots of land became the property of individuals, most of the island remained crown land. In 1911, for example, only 233, 320 acres, roughly 945 km<sup>2</sup>, are listed as occupied land.<sup>109</sup> This is slightly less than one percent of the area of the island. Thus, when an inhabitant wanted to cut trees in a local forest, the forest was likely public land, and no property rights would have restricted the inhabitant's access. This also meant that when residents moved inland to their winterhouses each year, they were not intruding on private property.

### **3.6 Summary**

Prior to the nineteenth century, the open hearth was the only method of cooking, and one of the principal methods of heating, available to residents of Newfoundland. The form of these hearths was brought across the Atlantic in the minds of immigrants moving to the island, and with a few modifications, was replicated in the new setting. Stone hearths contained an open fire used for both cooking upon, with the use of cast iron pots and pans, and for warming the home. Wood, and sometimes peat, was burned on a hearth stone or andirons, and as the only source of warmth in many homes, family life centred around the open hearth.

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<sup>109</sup> *Report on the Census of Newfoundland, 1911* (St. John's: J.W. Withers, 1914), xxviii.

The open hearth technology immigrants brought with them to Newfoundland was very inefficient in terms of the fuel consumed. As long as population numbers were low, and wood resources abundant, this was not problematic. However, the combined pressures on the forest for both building materials and firewood resulted in fuel wood shortages in some areas. The population was able to avoid the serious consequences of these shortages by expanding their forest resource base. This was done through the process of winterhousing, giving residents access to a new, generally superior, supply of wood each winter. Perhaps this phenomenon would have occurred even if there had not been wood shortages, given the access to game, furs, and freshwater fish that the winter locations provided.

Although firewood shortages clearly existed in some places on the island, Newfoundland residents do not appear to have been in a completely desperate situation because of wood scarcity. However, another significant pressure on the Newfoundland forests was the growing population, which was expanding very rapidly at the end of the eighteenth century. Thus, on the eve of the introduction of cast iron stoves to the island, the situation was one of a growing population and diminishing firewood resources.

## CHAPTER FOUR

### HEATING AND COOKING TECHNOLOGY IN THE FIRST HALF OF THE NINETEENTH CENTURY

#### 4.1 Introduction

The first record of a stove in the province of Newfoundland and Labrador occurs in George Cartwright's Labrador journal of 1770.<sup>1</sup> The reference to the first stove on the island portion of the province has yet to be determined, but by the beginning of the nineteenth century, cast iron stoves were being advertised in St. John's newspapers. This was just the start of a gradual shift from the open hearth to the cast iron stove as the main means of heating and cooking on the island. A new technology was now available to turn the forest resources of the island into the much needed heat for warming the homes of the population and for cooking their food. Most of the population of Newfoundland was using open hearth technology at the beginning of the nineteenth century, and cast iron stoves were still rare. However, by 1870, the population of the island, with some exceptions, had converted to this new technology, and while many people still used a fireplace for heating and social or gathering purposes, the open hearth for cooking had become a thing of the past.

The first stoves on the island were imports, and cast iron stoves were not manufactured in Newfoundland until 1857. Even after stoves were manufactured on a large scale domestically, imported models still constituted a large portion of the stoves found in the

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<sup>1</sup> O'Dea, "Cooking and Heating Technology," 16.

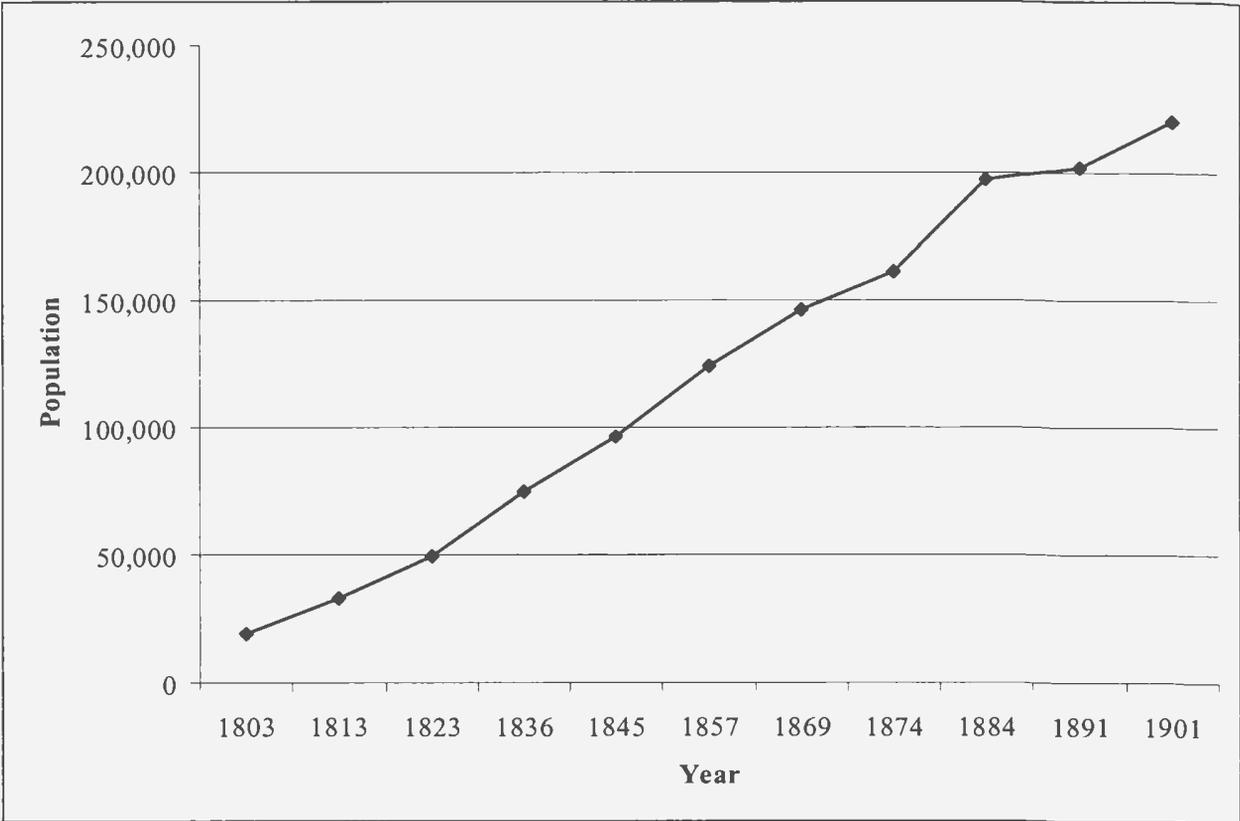
homes of Newfoundland residents. This chapter looks at these imports, as well as the timing of stove introduction and its adoption on the island. It begins with a discussion of the characteristics of the Newfoundland population in the nineteenth century, emphasizing both the population's rapid growth and the inhabitants' dependence upon Newfoundland's land and sea resources for the provision of most of the necessities of life. Following this, newspaper advertisements and merchant ledgers are examined, providing information on stove use on the island. The sources of these imported stoves are then identified, followed by a discussion of the methods of purchasing a stove in nineteenth century Newfoundland. The chapter concludes with reference to the Newfoundland use of forest resources during the time of stove introduction.

#### **4.2 Nineteenth Century Population Growth and Resource Use**

The distribution of the nineteenth century population of Newfoundland was similar to that of the eighteenth century. However, the population of the island experienced tremendous growth during the late eighteenth and early nineteenth centuries, as a result of the changing nature of the fishery. The migratory fishery collapsed during the Napoleonic Wars at the beginning of the nineteenth century, and a residential fishery took its place. The peak period of immigration to Newfoundland was from 1780-1830.<sup>2</sup> Numerous English and Irish immigrants were entering the colony each year, and combined with natural increase, the population of the island soared. Figure 4.1 demonstrates the rapidly growing nature of the Newfoundland population throughout this time, giving population

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<sup>2</sup> Mannion, introduction to *The Peopling of Newfoundland*, 5.



**Figure 4.1: Graph showing the growth of the Newfoundland population throughout the nineteenth century**

Source: Data from S. Ryan as cited in John J. Mannion, Introduction to *The Peopling of Newfoundland*, ed. John J. Mannion (St. John's: Memorial University of Newfoundland, 1977), 13. These population numbers include both the island portion of the province and Labrador, and can be found in Table A in Appendix Two.

numbers throughout the immigration peak in the early years of the nineteenth century, prior to the official censuses. Between 1803 and 1815, the population more than doubled, and by the end of the nineteenth century, it was more than ten times that at the beginning of the century, with 220,249 inhabitants in 1901.<sup>3</sup> Pressure on forest resource therefore also increased. Growth after the immigration peak was due both to immigration from England and Ireland and to natural increase.<sup>4</sup> Staveley has noted that population growth did not occur uniformly over the island, and residents of long-established, over-crowded communities, such as some of those on the Avalon Peninsula, moved to “the more thinly peopled outlying bays and peninsulas.”<sup>5</sup> Thus, nineteenth century population growth distributed the increasing pressures on natural resources unequally over the island.

As the population of Newfoundland grew, the number of dwellings on the island also increased, and this is of significance to a study of the inhabitants’ use of fuel wood resources. It is obvious that an increasing population put added pressure on the island’s forest resources, as more wood was needed for the fishery and for firewood. The relationship between dwelling numbers and the forest resources is equally as important, because the dwelling was the unit that had to be heated. Because this study concentrates on domestic heating and cooking, the other buildings in a community that were also

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<sup>3</sup> S. Ryan, "The Newfoundland Cod Fishery in the Nineteenth Century" Paper presented to the Canadian Historical Association, Kingston 1973, as cited in John J. Mannion, Introduction to *The Peopling of Newfoundland*, ed. John J. Mannion (St. John’s: Memorial University of Newfoundland, 1977),13.

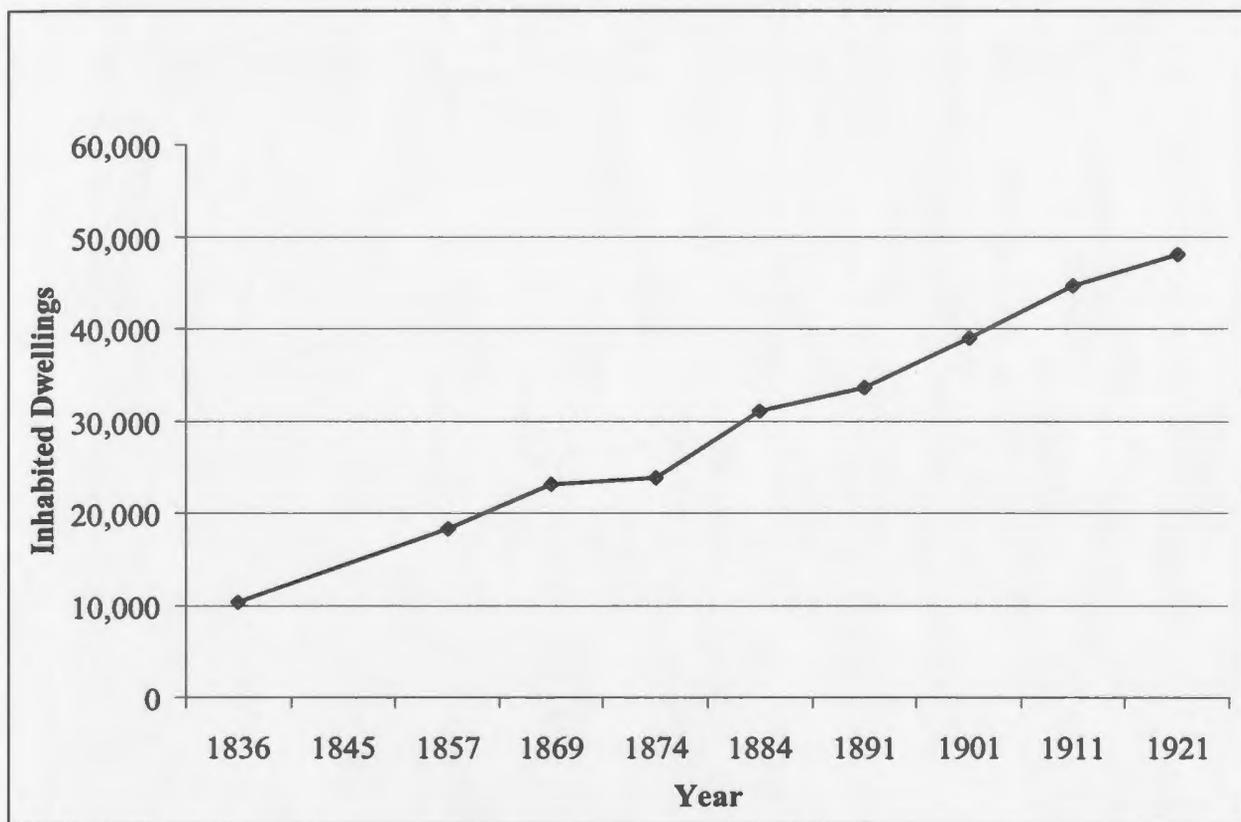
<sup>4</sup> Michael Staveley "Population Dynamics in Newfoundland: Regional Patterns" in John J. Mannion ed. *The Peopling of Newfoundland* (St. John's: Memorial University of Newfoundland, 1977). 53, 56.

<sup>5</sup> Staveley, "Population Dynamics in Newfoundland," 67.

heated with wood, such as schools, churches, and shops, are not studied here, and it is only the houses that are considered. The censuses of Newfoundland and Labrador from 1836 onwards record the number of inhabited dwellings on the island. These numbers are presented in Figure 4.2. They comprise only the inhabitants and dwellings of the island of Newfoundland, since Labrador has not been included in this study.

The most noticeable pattern in the number of inhabited dwellings on the island is that the numbers increase significantly, rising more than fourfold in less than a century. Each of these inhabited dwellings had to be heated, and the people living in each dwelling needed to cook their meals. Thus, an increase in the number of dwellings is a strong indication of increased pressure on the island's forest resources.

Another interesting trend is that the mean number of people per dwelling, calculated by dividing the population total by the number of inhabited dwellings, decreased noticeably throughout the nineteenth century. In 1836, there was an average of 6.64 people per dwelling, while by 1901 this number had declined to 5.57. The number of dwellings on the island was increasing more rapidly than was the population of the island. This pattern is significant to the population's use of firewood resources, since each dwelling required an open hearth or stove for heating and cooking, regardless of the number of people living in the dwelling. In most outport Newfoundland homes, the kitchen was the only



**Figure 4.2: Graph showing the number of inhabited dwellings in Newfoundland throughout the nineteenth century**

Source: Censuses of Newfoundland and Labrador, 1836 to 1935. The number of people per inhabited dwelling was calculated by dividing the population total by the number of inhabited dwellings. The numbers derived this way can be found in Table B in Appendix Two.

room that was heated on a regular, daily basis,<sup>6</sup> so a larger family with more bedrooms in their house would not necessarily have used more firewood for heating than would have a smaller family. Particularly large families may have had slightly higher fuel requirements for cooking, since a larger stove was sometimes needed to cook for more people. Single people may have had decreased firewood requirements for cooking, but in nineteenth century Newfoundland society, single children tended to live at home until they married, and widows and widowers often lived with one of their children. Thus, the number of single people living alone in Newfoundland society would have been minimal. It is then reasonable to assume that each household would use roughly the same amount of fuel wood, regardless of the number of people it contained. The decreasing household size combined with an increasing population, resulting in many more dwellings that had to be heated with wood from the island's forests.

Like the earlier migrant population of the island, the primary activity of this permanent Newfoundland population was fishing. Cod made up the bulk of the fishery, although salmon, herring, and, increasingly, seals and lobster were also targeted. Cod was salted, dried, and exported to the European market, as well as providing a dietary staple for the local population. Much of the residential fishery operated on a small scale, with labour increasingly divided among family members. The father and sons of a family would catch fish from their small, wooden boat, while the wife and daughters were responsible

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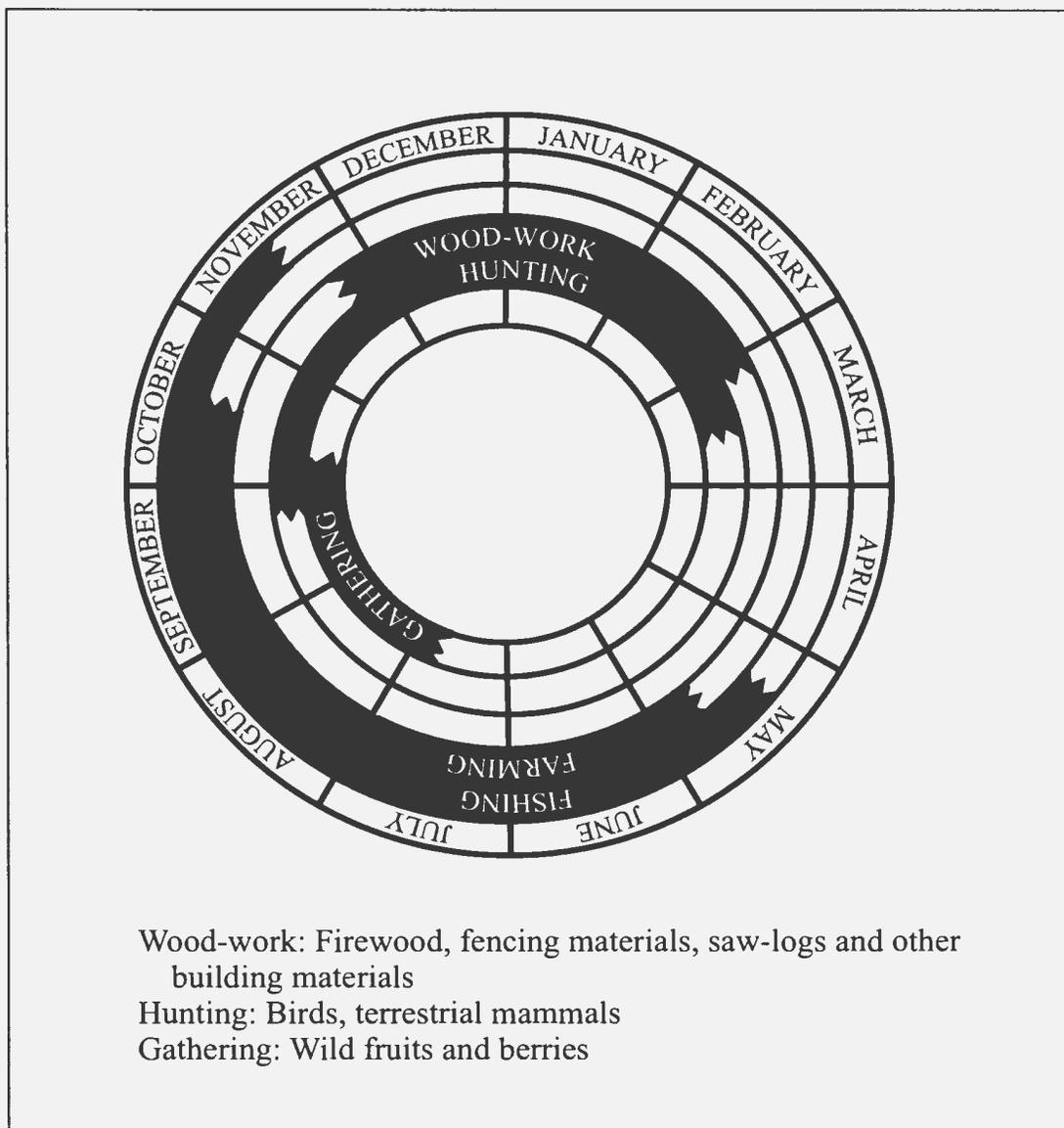
<sup>6</sup> Murray, *More Than Fifty Percent*, 104; Pocius, *A Place to Belong*, 232; Kendall and Kendall, *Out of the Sea*, 122; Mellin, *Tilting*, 92-4.

for cleaning and curing the caught fish once it was delivered to shore. The cured fish product was then usually traded to a local merchant.

Other staple resources of the island were also utilized, and, like the fish, these resources were very seasonal. Figure 4.3 demonstrates the way in which inhabitants combined various seasonal resources to make year round occupation of the island feasible, with wood being an important component of this annual cycle. The fishing season began approximately in mid-May, and continued until mid-November. This was the main economic activity of most families, and much time was devoted to it. The fishing season was also combined with subsistence farming, and during this time gardens were planted and tended, and hay was cut. Wild berries were gathered in the late summer and early fall, adding variation and nutrients to the local staples of potatoes, root vegetables, and fish. Hunting took place during the winter months, providing meat for family consumption, as well as furs for trading. The wood resources of the island were also tapped during the winter months, since it was then that time allowed and when the snow cover made hauling wood easier.<sup>7</sup> Wood for constructing or repairing buildings or fences was cut at this time, as was firewood. Wood was an important material for the Newfoundland population, and one upon which they relied heavily. Numerous products were made from the local forests. These included fences, homes, furniture, barns,

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<sup>7</sup> Chesley Sanger, "The Evolution of Sealing and the Spread of Permanent Settlement in Northeastern Newfoundland," in *The Peopling of Newfoundland*, ed. John J. Mannion (St. John's: Memorial University of Newfoundland, 1977), 137.



**Figure 4.3: Subsistence seasonal resource use of the Newfoundland population**

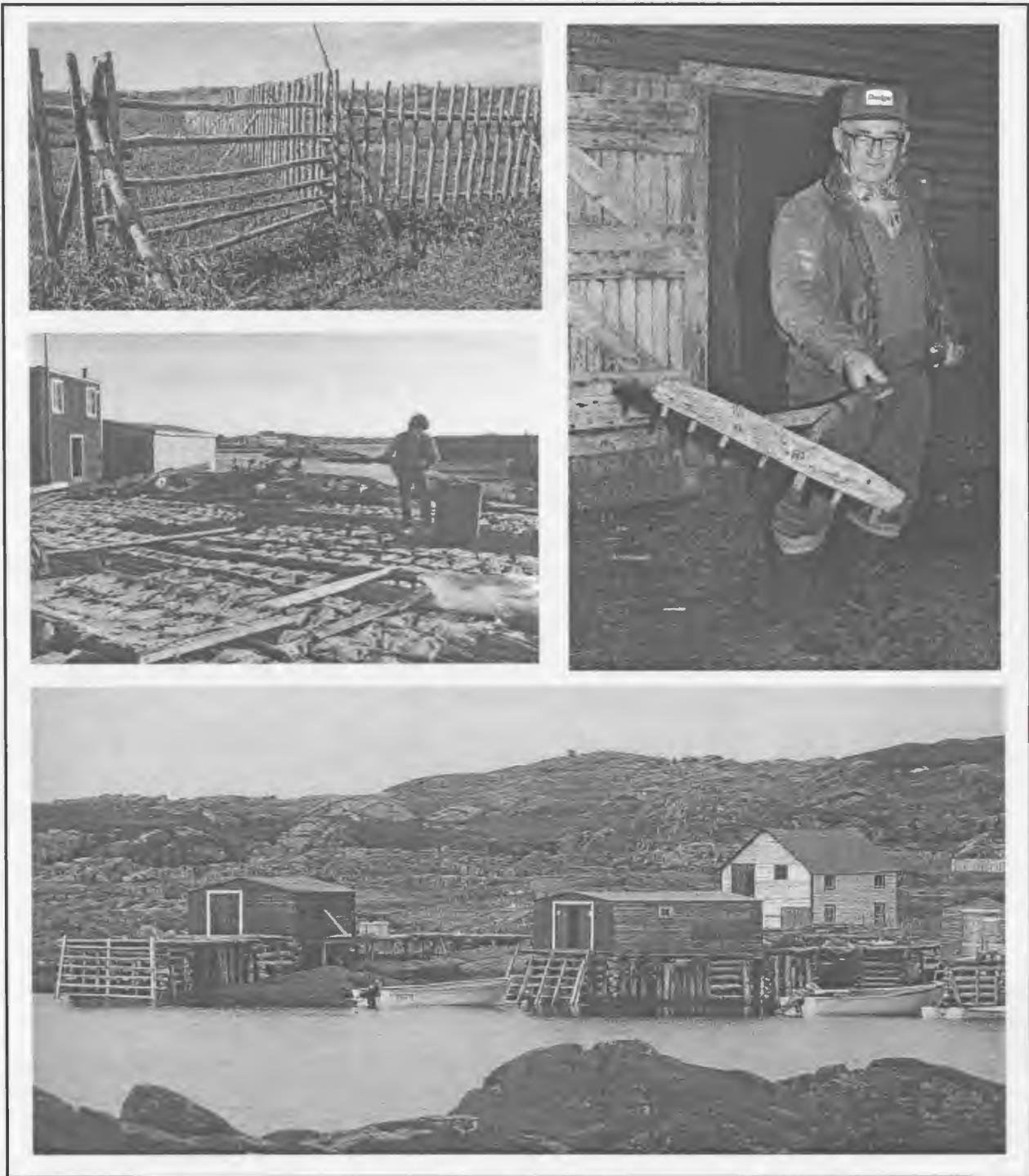
Source: Adapted from Chesley Sanger, "The Evolution of Sealing and the Spread of Permanent Settlement in Northeastern Newfoundland," in *The Peopling of Newfoundland* ed. John J. Mannion (St. John's: Memorial University of Newfoundland, 1977), 137.

agricultural implements, fishing flakes, boats, stages, slides, carts, barrels for exporting fish, and, of course, firewood. Some of these wooden products are illustrated in Figure 4.4. Wood was a free, and relatively easily obtained, resource. Anything residents were able to make out of wood reduced the amount of supplies that had to be purchased. Apart from barrels for fish, these wood products were not produced for export. They were part of a subsistence economy where citizens' efforts were focused upon meeting their basic needs. Newfoundland residents combined the assortment of resources available to them to create a subsistence work pattern based on a variety of resources and tasks.

Newfoundland inhabitants were practical, inventive people, and they made or produced as many of the staples of life as possible. Most families had a garden in which were grown a supply of potatoes, turnips, carrots, and cabbages for family consumption. The soils and climate of Newfoundland were not conducive to agriculture, and more delicate crops such as grains or fruit trees did not survive well under prevailing conditions.

Commercial agriculture was practiced on a small scale, particularly around St. John's and some of the larger towns, but this was limited. Most crops grown on the island were simply for family consumption, supplementing the fish cured during the summer months, and reducing the amount of provisions that had to be purchased from local merchants.

Those supplies that could not be gathered from the land or sea had to be purchased, and this was done through the local merchant. Most communities had a merchant firm present in the area, and smaller settlements were serviced by a firm in a neighbouring community. Often there was only one merchant in a community, and he was thus the



**Figure 4.4: Some of the many uses of wood in Tilting, Fogo Island. Clockwise from top left: fence, rake, fishing stage, and fishing flakes.**

Source: Robert Mellin, *Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales From a Newfoundland Fishing Village* (New York: Princeton Architectural Press, 2003) 29, 38, 181, 203.

only option for obtaining goods. The merchant firm would advance supplies to its customers on a credit basis, requiring in return that the season's catch be sold, at prices determined by the merchant, to the merchant to pay off the debt accumulated. In this way, Newfoundland residents obtained everything they could not gather or make, such as flour, salt pork, and shoes. Cash was rarely used, and transactions were almost always on a credit basis. By supplementing their subsistence activities with supplies from merchant firms, the Newfoundland population was able to meet its basic needs.

#### **4.3 Nineteenth Century Heating and Cooking Technology**

The earliest cast iron stoves on the island of Newfoundland were imported from Europe, the United States, and other parts of Canada, but records of these imports are scarce. Customs Returns for Newfoundland imports are available as appendices in the *Journal of the House of Assembly*, but stoves are not listed as a separate product until 1897.<sup>8</sup> Prior to this they presumably fell into the category of "Goods, Wares, and Merchandise, not otherwise described." The stove imports for 1897 onward are valuable information, but they do little to enhance the picture of stove sale and use at the beginning of the nineteenth century, when stoves were not yet common on the island. The Colonial Office (CO) Records from 1822 to 1900 were also examined, but they too did not record stoves as a separate category of imports prior to the inclusion of stoves in the Customs Returns.<sup>9</sup> Newfoundland does not have probate inventories like those Brewer and Field used in the

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<sup>8</sup> Newfoundland. House of Assembly, *Journal of the House of Assembly of Newfoundland* (St. John's: The House of Assembly, 1833-1925).

<sup>9</sup> Public Record Office, United Kingdom, *Colonial Office fonds Series 199 Newfoundland* (n.p.: Public Record Office England, 1822-1900.)

New England states and Lunenburg, Nova Scotia to look at the objects that eighteenth and nineteenth century citizens had in their homes.<sup>10</sup> Thus, stove use in Newfoundland cannot be determined through these legal documents. Newspaper advertisements and merchant ledgers contain information on the heating and cooking technology available to and used by the Newfoundland population, and these sources were consulted to provide a picture of stove introduction on the island.

#### 4.3.1 Newspaper Evidence of Imported Cast Iron Stoves

Imported stoves were listed in Newfoundland newspapers as early as 1810, and a selection of newspapers from the island was studied to give an indication of the timing of stove introduction and use, as well as the types of stoves used by the Newfoundland population. Throughout the nineteenth century, newspaper publication in Newfoundland was limited to St. John's and Conception Bay, with a few papers from other regions starting publication in the last three decades of the century. Three newspapers were examined in this exercise. *The Royal Gazette and Newfoundland Advertiser* was printed in St. John's, and ran from 1807 to 1924 under a variety of different publishers. *The Newfoundlander* was also printed in St. John's from 1827 to 1884. These specific papers were selected because they had an extensive coverage that began early in the nineteenth century. Thus, they were able to provide early information on stove use on the island, as well as patterns and changes in this use throughout the century. *Harbor Grace Standard*

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<sup>10</sup> Brewer, *From Fireplace to Cookstove*; Richard Henning Field, "Proxemic Patterns: Eighteenth-Century Lunenburg-German Furnishings and Interiors" *Material History Bulletin* 22 (Fall 1985): 40-48; Richard Henning Field, "Claiming Rank: The Display of Wealth and Status by Eighteenth-Century Lunenburg, Nova Scotia, Merchants" *Material History Review* 35 (Spring 1992): 1-20.

was published in Harbour Grace on Conception Bay, and ran from 1859 to 1934. Three other papers were published in Harbour Grace earlier than the *Standard*, but they ran for only two, twelve, and thirteen years respectively, and thus would not have provided the long term temporal patterns of interest here. It was not feasible to look at all of the issues for each year, so one year in every five was examined. Every issue of the three papers from each of the years chosen was scrutinized for advertisements relating to both open hearth and cast iron stove technology. Since the first issues of the earliest paper, *The Royal Gazette*, were available from 1810, the papers from this year, and from every fifth year after that, were examined. There were occasionally missing issues, and from time to time an entire year was absent, but in general the coverage of the papers was fairly complete. A missing issue or month was ignored, but when an entire year of a paper was missing, the next closest year was studied instead. *The Royal Gazette* was examined for the years 1810, 1815, 1830, 1836, 1840, 1845, 1850, 1855, 1860, 1865, 1870 and 1875. Issues of *The Newfoundlander* from 1830, 1834, 1845, 1851, 1855, 1865, and 1875 were studied. *Harbor Grace Standard* began printing in 1859, and issues from 1860, 1865, 1871, and 1875 were searched.

The advertisements in the chosen newspapers were examined for references to the use or sale of both stoves and open hearths. These advertisements included those of general merchants promoting their goods, those of merchants dealing specifically in stoves, and also of auctions. The advertisements for estate auctions were particularly useful in the first half of the nineteenth century when there were no stove merchants on the island.

These auctions, like that illustrated in Figure 4.5, gave information on the type of heating and cooking technology already in use in Newfoundland. The use of stoves could be found in advertisements by the mention of the actual stoves themselves, along with associated stove products, such as stove pipes, an essential part of any cast iron stove, and stove lead, also called stove blacking or stove polish.

The use of an open hearth was generally indicated only through the sale of utensils and implements used on a hearth, since the hearth itself was a home-made, built-in structure that was not sold as a separate commodity. However, sales of bake pots, grid irons, fenders, and fire irons, such as those listed in Figure 4.6, indicated that some type of open fire was in use in a household. There was some ambiguity involved in identifying the hearth or fireplace items. Those utensils designed for cooking on an open hearth, such as bake pots, jacks, and grid irons, meant that an open hearth was in use for cooking in a household. Since fires for cooking also heated a home, it can be assumed that the open hearth was also one of the sources of heat in the house, and in many homes it would have been the only source of heat. Those implements that were not specific to cooking were more difficult to place. For example, fire irons were used both in open hearths and in fireplaces. Thus, the sale of a set of fire irons does not necessarily specify the cooking situation in a home. Possibly the set was used to hold burning logs in an open hearth, and cast iron pots were suspended above the fire irons to cook a family's meals. However, this same set of fire irons could also potentially have been used in a parlour or bedroom

**SALE at AUCTION,**  
 By **GEORGE LILLY,**  
 On *Monday the 9th July next,*  
 At the House now occupied by Mrs.  
**STREET,** At 11 o'Clock,  
 A variety of  
**HOUSEHOLD FURNITURE,**  
 Among which are the following Articles, viz.—

14 Drawing-room Chairs,  
 3 Saus-wood Card and Tea Tables,  
 1 Sofa, 2 Pier Glasses,  
 1 Sideboard, 1 Screen,  
 2 Elegant Knife Cases,  
 1 Do. full set Table Ware,  
 1 Do. - do. Tea China, 2 Urns,  
 2 Sets China,  
 1 Mahogany Bedstead and Curtains,  
 2 Sets Curtains,  
 2 Sets Window Hangings,  
 3 Do. 1 Chest Drawers,  
 1 Oil case Floor Cloth,  
 1 Parlour Carpet,  
 Fenders and Fire Irons,  
 1 8-day Clock, 1 Hall Globe,  
 1 Bell Glass,  
 2 Small Bedsteads,  
 A quantity of Glass-ware,  
 Candlesticks, Suppers and Stand,  
 1 Warming Pan,  
 Knives and forks,  
 1 Platewarmer, 2 Tea Caddies,  
 1 brass-front Jack,  
 1 Dutch Oven, - Bell-metal Skillets,  
 1 Napkin Press, 1 Mangle,  
 1 Clothes Press,  
 1 Turning Lathe,  
 Kitchen-Tables and Chairs,  
 1 Haster, - 2 elegant Tea Waters,  
 15 Dish covers; and a quantity of Kitch-  
 en utensils,  
 1 Supper Tray, with Dishes and Plates,  
 1 Set dining Tables, 2 Work ditto,  
 1 Round Tea do. 1 Small do.  
 1 doz. Chairs,  
 1 Set double plated Harness for Gig,  
 quite new,  
 1 Common Ditto,  
 3 Fowling pieces, 1 pair Pistols,  
 Cucumber Frame, Baskets, &c. &c.

Figure 4.5: 1810 estate auction mentioning fire irons, fenders, a Dutch oven, and a brass-front jack

Source: *Royal Gazette* 14 June 1810

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Sales at Auction.

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**THIS DAY,**

At 11 o'clock,

AT THE HOUSE OF

*Mr. R. Pearce,*

Opposite the Premises of Messrs. HUNTERS & Co.

**1** SET Mahogany Dining Tables,  
4 Mahogany Tables, (different sizes,)

1 Chest Drawers, 1 Sofa,

Chairs, Fenders and Fire Irons,

Dressing Tables, Dressing Glasses,

Wash-hand Stands,

1 Mahogany Bedstead and Curtains,

2 Feather Beds,

1 Eight-day Time Piece,

1 Shower Bath, Kitchen Utensils,

And sundry other Articles.

ALSO,

A lot of BOOKS.

R. PERCHARD,

*Auctioneer.*

May 13.

Figure 4.6: 1830 auction listing fenders and fire irons for sale

Source: *The Newfoundlander* 13 May 1830

fireplace, and if this was the case, it was used for heating, and it is impossible to know whether the family used an open hearth or a cook stove to meet their cooking needs.

References to items for open hearths, fireplaces, and stoves found in the newspaper advertisements are listed in Tables 4.1 to 4.4. Table 4.5 contains a summary of this information. Implements which, as mentioned above, could have been used for either an open hearth or a fireplace are included in Table 4.1, “Implements associated with the use of a fireplace for heating,” since their use in a fireplace cannot be distinguished from their use on an open hearth. In either case, whether on an open hearth or a fireplace, they would have been used for heating, so it is more accurate to place them in this category than to assume that they had also been used on a cooking fire. Each reference is recorded in terms of its mention of a particular product, not of the individual numbers of those products. For example, an estate auction in 1810 listed “3 sets polished Steel Fire Irons” among the furniture to be sold.<sup>11</sup> This is recorded as one reference to fire irons, not three. Also, merchants quite often placed the same advertisement in a paper for months at a time. Only the first reference to this advertisement is recorded, and subsequent ones ignored. The point should be made, however, that the advertisements were often frequent and long-running. For the purposes of this study, the term 'reference' will be used to refer to the mention of an item in a newspaper advertisement. Three distinctly different items, such as a cooking stove, a heating stove, and a set of fireirons, that are all found in one advertisement would constitute three references. However, a cook stove in an

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<sup>11</sup> *The Royal Gazette and Newfoundland Advertiser* (St. John's), 14 June 1810.

**Table 4.1**  
**Implements Associated with the use of a *Fireplace for Heating***

Year	Fenders	Fire Irons	Cast Iron Fireplaces	Grates	Other *	Total
1810	4	5	2		3	14
1815	1	1	1	1		4
1830	6	7		2		15
1834/36	2	3		1		6
1840						0
1845			1		1	2
1851	3	2	1		1	7
1855	9	8	2	1		20
1860/61		1		2		3
1865	6	6	1	2	1	16
1870/71	1	1		2	1	5
1875		1		1		2

\* The category “Other” includes such implements as fire screens, fire guards, hearth brushes, and mantle pieces.

**Table 4.2**  
**Implements Associated with use of a *Stove for Heating***

Year	Heating Stove	Stove Pipes	Other *	Total
1810				0
1815	2			2
1830	2			2
1834/36	2	1	1	4
1840	1			1
1845	4			4
1851	5	2		7
1855	6	4	1	11
1860/61	1	2		3
1865	5	1		6
1870/71	5		1	6
1875	2			2

\* The category “Other” includes products such as dumb stoves and stove lead. A dumb stove was a hollow cast iron stove in which a fire was generally not lit. Instead, pipes from a cooking or heating stove in another room, generally on a lower floor of the house, brought warmed air into the dumb stove. The heat from the air was transferred to the cast iron body of the dumb stove and then radiated into the surrounding room.<sup>12</sup>

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<sup>12</sup> Peirce, *Fire on the Hearth*, 188-92; Curtis and Curtis, *Antique Woodstoves*, 34.

**Table 4.3**  
**Implements Associated with the use of an *Open Hearth for Cooking***

<b>Year</b>	<b>Bake Pots</b>	<b>Cranes</b>	<b>Grid Irons</b>	<b>Jacks</b>	<b>Kitchen Grates</b>	<b>Other *</b>	<b>Total</b>
1810	1			2			3
1815	2		2				4
1830	3					1	4
1834/36			1			1	2
1840							0
1845							0
1851				1			1
1855							0
1860/61		2			2	1	5
1865							0
1870/71			1				1
1875							0

\* The category “Other” includes references to advertisements, such as property rentals, in which, from the description, a hearth was obviously in use, but no specific implements are mentioned.

**Table 4.4**  
**Cooking Stoves**

<b>Year</b>	<b>Cooking Stoves</b>	<b>Total</b>
1810	1	1
1815	1	1
1830	3	3
1834/35		0
1840	1	1
1845	1	1
1851	4	4
1855	1	1
1860/61	3	3
1865	5	5
1870/71	4	4
1875	3	3

**Table 4.5**  
**Summary of Implements Found in Newspaper Advertisements**

<b>Year</b>	<b>Fireplace for Heating</b>	<b>Open Hearth for Cooking</b>	<b>Stove for Heating</b>	<b>Stove for Cooking</b>
1810	14	3	0	1
1815	4	4	2	1
1830	15	4	2	3
1834/36	6	2	4	0
1840	0	0	1	1
1845	2	0	4	1
1851	7	1	7	4
1855	20	0	11	1
1860/61	3	5	3	3
1865	16	0	6	3
1870/71	5	1	6	4
1875	2	0	2	3

advertisement that runs identically in consecutive issues of a newspaper will be considered one reference to a cook stove.

It is difficult to distinguish any firm patterns in stove use and adoption from the newspaper advertisements, but a few comments can be made. References to the open hearth as a means of cooking generally end in 1834, although one jack is listed in 1851, five implements are mentioned in 1860, and one grid iron in 1870. Figure 3.6 displays one of these references from 1860, in which Gleeson's Ironmongery Store lists cranes and dog irons among its items for sale. Mannion and O'Dea have both cited the mid-nineteenth century as the time by which cast iron stoves had replaced the open hearth.<sup>13</sup> These 1860 and 1870 references fit slightly outside of this pattern. However, these sales in the second half of the nineteenth century are consistent with Mills' comments that cast iron stoves were not introduced to the Trinity Bay area until the 1860s, becoming common around 1870.<sup>14</sup> These sales demonstrate that not only were some members of the Newfoundland population still using an open hearth to cook upon at this time, but they were also intending to continue doing so, since they were still investing in the equipment necessary for such cooking. It must be kept in mind that advertisements in a newspaper are not concrete evidence that citizens actually bought the goods advertised. What they do communicate, however, is that in the eyes of the merchants, people were

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<sup>13</sup> Mannion, *Irish Settlements in Eastern Canada*, 163; O'Dea, "Cooking and Heating Technology," 15.

<sup>14</sup> Mills, "Folk Architecture in Trinity Bay," 83; David Mills, interview by author, St. John's, Newfoundland, 24 November 2004.

still buying utensils for the open hearth, and doing so in large enough numbers that it was worthwhile for the merchants to advertise such goods in the newspapers.

Some form of open fire was used by a number of inhabitants for heating throughout the entire time period of newspapers examined. The number of references to implements associated with a heating fire fluctuate widely throughout the entire time period, but no clear increase or decrease in the values emerges. Overall, the advertisements seem to indicate a fairly constant use of fireplaces for heating. At the beginning of the nineteenth century, this heating fire was often the same fire that was built in the open hearths for cooking upon for the majority of the population.<sup>15</sup> The heating and cooking fires were one in the same. However, wealthier citizens, as well as those in urban areas like St. John's, often had fireplaces in multiple rooms in a home, and these would have been used only for heating. A significant number of implements for a heating fire were still mentioned during the second half of the nineteenth century, when cook stoves were in common use throughout the island. Some of these implements may have been used with the open hearths mentioned above, but it is likely that the majority of these items were for heating fireplaces. Although the cook stoves that replaced the open hearth were also used to heat a home, fireplaces were used for supplemental heating in wealthier residences, just as they had been while open hearths were the main means of cooking. These fireplaces would have had both a heating and a social or gathering function, but would not have been used for cooking upon. In other words, they would have been used to

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<sup>15</sup> Mills, "Folk Architecture in Trinity Bay," 83-86; Mannion, *Irish Settlements in Eastern Canada*, 152.

warm a room and to provide a cozy atmosphere and mild entertainment, but they would not have been used for preparing meals. Many of the references to implements for fireplaces in the second half of the nineteenth century were likely for this type of fireplace. References to open fires for heating, whether in an open hearth or a fireplace occur throughout the entire time period examined.

Advertisements for heating stoves also occur throughout the entire time period, and references to them are more common in the second half of the nineteenth century than in the first. There were thirteen initial references to heating stoves in the advertisements from 1810-45. This number grew to thirty five references in the 1851-75 period. This was not due to the fact that all three newspapers covered the later time period, while only two covered the earlier years. The advertising content of *The Royal Gazette* changed mid-century, and no references to heating or cooking implements of any form were found in it after 1840. Thus, although all three papers in theory covered the second half of the nineteenth century, only two of them actually contributed information on the heating and cooking situation. Heating stoves were apparently becoming more common on the island throughout the nineteenth century. In the first half of the twentieth century, it was usual for an outport household to have two stoves; a cook stove in the kitchen provided most of the heat a family needed, while a heating stove in the parlour was lit only when special guests arrived.<sup>16</sup>

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<sup>16</sup> Mellin, *Tilting*, 92-4; Pocius, *A Place to Belong*, 232, 250; Murray, *More Than Fifty Percent*, 104, 108.

References to the use of stoves for cooking also occur in the newspapers throughout the entire time period. Because the newspaper record does not begin until the early nineteenth century, at which time cast iron stoves are already listed with some regularity in the advertisements, it is not possible to gain an impression of when the first stoves began entering the island. However, working with the available data, cast iron cooking stoves had obviously been introduced to Newfoundland prior to 1810, at which point they are listed in the newspaper advertisements. There seems to be some uncertainty in the early advertisements about what to call this new cooking technology, and this results in descriptions such as that found in the advertisement in Figure 4.7, which lists "a second hand kitchen apparatus, (good as new), with an excellent oven and shelves."<sup>17</sup> This 1830 advertisement appears to be referring to some form of cooking stove or range, although a standard terminology for the objects does not yet seem to have emerged, implying that they were still relatively new items on the market. Some of the cooking appliances for sale in the early part of the nineteenth century are described as ranges, and it is difficult to tell from the use of the term whether it refers to the built in cast iron and brick ranges found in the homes of the wealthy in England and transferred to Newfoundland, or whether it referred to free-standing cast iron cook stoves, as the term range came to mean later in the United States. Some of these ranges appear to have been of the free-standing kind, since they are listed among such portable items as parlour grates, with no reference to installation.<sup>18</sup> Others, however, are obviously the built-in type, such as that depicted in

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<sup>17</sup> Advertisement for "T.W. Jackson, Anchor-Smith," *The Royal Gazette and Newfoundland Advertiser* (St. John's) 23 February 1830.

<sup>18</sup> See for example the advertisement of "Brown, Hoyles, & Co." *The Royal Gazette and Newfoundland Advertiser* (St. John's) 27 April 1830.

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**On Sale.**

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BY

**T. W. JACKMAN,**  
*Anchor-Smith,*

AT HIS SHOP,

**I**RON and Wood-stocked **ANCHORS,**  
from 1 to 5 Cwt.

A Wrought Iron Sealing Cambouse,  
complete,

Saddle Hoop Mast Winches,

Windlass Welps, and Windlass Spills,  
complete,

→ A second hand Kitchen Apparatus, (good  
as new,) with an excellent Oven and  
Shelves,

A set of Dead Eyes, 8 inch, and Iron  
Work, fitting for a Vessel 150 tons.

N. B.—Bell Hanging executed on the  
shortest notice.

February 23, 1830.

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Figure 4.7: 1830 advertisement including a second hand kitchen apparatus, demonstrating uncertainty as to what to call the new technology of cooking stoves.

Source: *Royal Gazette* 23 February 1830

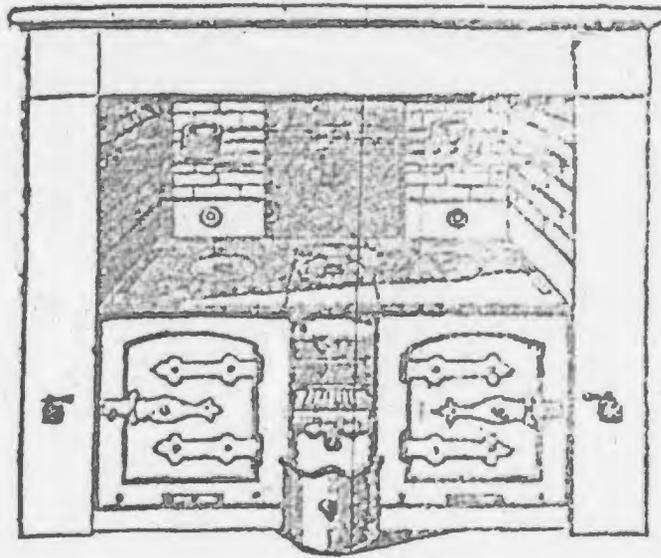
Figure 4.8, which was advertised as “the Best and Cheapest Range in the Market...” and which was obviously intended to be bricked into an open hearth.<sup>19</sup> More references to cook stoves occur later in the century, implying that they were becoming increasingly common among the Newfoundland population. From 1810 to 1845 there are only seven references to cook stoves, while from 1851 to 1875 there are eighteen different advertisements mentioning cooking stoves.

Despite the early advertisements for cast iron stoves, the new technology does not appear to have been in common use among the population during the first half of the nineteenth century. The advertisements list fifteen estate auctions prior to and including 1851. Of these, four list heating stoves among the items for sale and one lists a cook stove. In comparison, thirteen have references to the use of an open hearth or fireplace for heating and six to the use of an open hearth for cooking. Stoves apparently were still not the most common heating and cooking methods at this time. These estate auctions are not representative of the entire population, however, since they tend to be of the more wealthy estates. The estate auction of a deceased woman in 1830 is an example. The 331 piece set of dinnerware and the 33 chairs included among her possessions, indicate her wealth and social status. No stoves of any type are listed, and the only references to heating or cooking are “3 Brass Fenders and Fire Irons.”<sup>20</sup> Perhaps the less wealthy members of society were using cast iron stoves at this time, although this does not seem

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<sup>19</sup> Advertisement for “The Original Royal Leamington Range Manufactory,” *The Newfoundlander* (St. John's) 7 May 1875.

<sup>20</sup> *The Royal Gazette and Newfoundland Advertiser* (St. John's) 29 June 1830.



*THE ORIGINAL ROYAL*  
**LEAMINGTON RANGE**  
**MANUFACTORY,**  
AVON STREET, WARWICK, ENGLAND.

The Best and Cheapest RANGE in the Market,  
commanding the principal London Trade.

Orders direct to the Manufactory or to the  
Subscriber,

**GEORGE GEAR,**  
158 and 340 WATER STREET.

N. B.—The above Kitchens can be made with  
Ovens either right or left hand or to any size re-  
quired.

May 7.

**Figure 4.8: Advertisement for a Leamington Range. This range was not a free standing, portable cook stove, but was intended to be bricked into an open hearth.**

Source: *The Newfoundlander* 7 May 1875

likely given the high cost of stoves. However, the advertisements do not provide enough information to determine this. Also, there is no guarantee that all of an individual's possessions are listed in an estate auction notice, or sold at the auction. It is possible that stoves were considered fixtures that belonged to a house, and thus remained with the house when it was sold. However, this does not necessarily seem to have been the prevailing viewpoint, since several stoves are listed in the estate auctions.

#### **4.3.2 Evidence of Cast Iron Stoves from Commercial Records**

While the newspaper advertisements give valuable information about the products available to a population at a given time, they do not specify what the inhabitants were actually buying. Merchant ledgers provide a much clearer indication of what the population actually purchased, and therefore used. Each merchant firm kept a record of the goods bought and sold. These records are usually in the form of ledgers, in which each customer is listed, along with the articles purchased from, and the items sold to, the merchant. In general, cod was the main product that the customer sold to the merchant, but other fish, furs, wooden barrels, and firewood are also recorded in the ledgers. Items purchased from the merchant are too numerous and diverse to list, but include such articles as fabric, shoes, flour, nails, salt pork, and cooking utensils. Since the local merchant was often the only means through which a resident could obtain goods, the entire inventory of the goods a customer purchased during a year could, in theory, be found in the merchant ledgers. However, there is no way to determine if a customer was

dealing with only one merchant, or was in fact, trading goods to and buying items from, more than one merchant in a community.

Another benefit of studying merchant ledgers for data on the consumption patterns of the population is that local merchants were the means through which the average citizen obtained goods. The newspapers were directed at a select audience, since one had to be literate in order to read the advertisements it contained. Thus, the newspaper advertisements just discussed were not aimed at the majority, and therefore do not represent the consumption habits of the everyday Newfoundlander. Merchant ledgers do not discriminate in this way, since they record the sales to all customers of a firm, regardless of their literacy level, geographic location, or economic status. They provide information on what all types of people purchased and used.

A collection of merchant ledgers is available for study in the Maritime History Archive at Memorial University of Newfoundland, and some of these were selected for close examination, to determine the buying patterns of Newfoundland citizens in relation to heating and cooking technology. Only a handful of the numerous ledgers created on the island throughout the nineteenth century have survived and are held in the archive. The majority of those in the archive are from the larger merchant firms, and they tend to be from firms in or around the St. John's area. Thus, the extant ledgers are not a representative sample of those that once existed. In addition, most of the surviving ledgers cover only a few years: this creates a challenge in trying to determine the timing

and sequence of the transition from open hearths to cast iron stoves. However, it was still possible to get a variety of ledgers from different regions of the province, and for roughly similar time periods.

The ledgers chosen for study were selected on two criteria. They should cover as many different regions of the province as possible, particularly in areas distant from St. John's. This was a difficult task, since many of the surviving ledgers are from firms on the Avalon Peninsula. However, ledgers from Trinity and Bonavista were also available for examination. It was also desirable to look at ledgers from two different time periods: one when the stove was present but had still not completely replaced the open hearth, and the second when stoves were common throughout the island. Ledgers from the 1830s and 1840s represent the first time period, and from the 1870s the second. The merchant firms chosen, their location, and the dates covered by their ledgers are listed in Table 4.6. As in the newspaper advertisements, sales of items that indicated the nature of heating and cooking technology used by the customer were recorded from the ledgers. These included both heating and cooking stoves, as well as products that would have been used with a stove, such as stove pipe and stove lead. Implements used with a fireplace or open hearth were also recorded, such as bake pots and grates. The results of this search are listed in Table 4.6.

References to purchases of heating and cooking equipment are sparse, and alone they do little to provide a picture of the methods in which Newfoundlanders met their heating and

**Table 4.6**  
**Heating and Cooking Implements Sold in Merchant Ledgers**

Merchant Firm	Date	Location	Bake Pots	Fireplace Implements	Heating Stoves	Cooking Stoves	Stove Products
Goodridge & Sons	1839	Renews	5	2			1
	1840			2			1
George Forward	1843-44	Carbonear	3		2		
James Ryan	1870	Bonavista	1			7	10
Grieve & Bremner	1875	Trinity					
C & A Dawe	1876	Bay Roberts		1	9	1	
	1877						

cooking needs. However, when combined with the patterns noted in the newspaper advertisements, this information from the merchant ledgers helps clarify and pinpoint a change in cooking and heating technology on the island during the nineteenth century. Bake pots were essential in determining the use of an open hearth in this exercise, since they were the only cooking utensil sold in the ledgers that was used only on the open hearth. Many other pots and pans were sold, but based on the ledger description, it was impossible to distinguish those used on open hearths from those used on cook stoves. Bake pots, however, were one of the main methods of baking on the open hearth, yet were later abandoned in favour of the oven contained in cook stoves.<sup>21</sup> Eight bake pots were sold in the ledgers from the 1830s and 1840s, yet only one was sold during the 1870s. This gives an indication that the open hearth was used extensively during the first half of the century, but had been mainly replaced by 1870. Sales of the item that replaced it, the cast iron cook stove, confirm this transition. No cooking stoves were sold in the ledgers of the 1830s and 1840s, but eight were sold in those of the 1870s. These numbers point toward a transition throughout the nineteenth century from the open hearth to the cast iron cook stove as the main means of cooking.

Other fireplace implements are also more prevalent in the ledgers of the first half of the century than in those from the second half. As with the newspaper advertisements, it is impossible to distinguish between some of the implements used in fireplaces intended

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<sup>21</sup> Canifer, "The Days of the Dog-Irons," *The Newfoundland Quarterly* 5-6, no. 4 (December 1906): 4.

only for heating, and those used in open hearths for both heating and cooking. Again, these uncertain implements have been grouped into the heating category, since all fires played a function in heating a home, regardless of whether they were used for cooking. Four items fit into this category of fireplace implements during the 1830s and 1840s, two grates and two hearth brushes, but the only entry in this category from the 1870s ledgers is a single grate. These numbers may imply a decrease in the use of open fires for heating throughout the nineteenth century, but the sales of implements are not substantial enough to indicate a distinct pattern.

The situation of heating stoves as represented in the merchant ledgers is more distinct than that of the fireplace. Two heating stoves were sold during the 1830s and 1840s, while nine were sold during the 1870s. Other stove products, such as stove pipes, brushes, and stove lead indicate an increased use of cast iron stoves throughout the century, although it is impossible to ascertain whether these products were bought for use with a cook stove or a heating stove.

Table 4.7 presents the items listed in the inventories of the Thomas Street Bird and Joseph Bird firm from 1832 to 1840. These numbers were not included in Table 4.6, because most of the inventories were for the firm's location in Forteau, Labrador. However, the Bird firm also had posts in communities along the west coast of the island of Newfoundland, particularly in the Bonne Bay area. Thus, it is interesting to look at the supplies in the Forteau inventories, since the firm's locations on the island likely had

**Table 4.7**  
**Items listed in the Bird Inventories of Forteau**

<b>Date</b>	<b>Bake Pots</b>	<b>Fireplace Implements</b>	<b>Heating Stoves</b>	<b>Cooking Stoves</b>	<b>Stove Products</b>
1832			4		
1833			1		
1834					
1835			11		
1836			1		
1837			2		
1838	1	1	6		1
1839			6		
1840	1				

similar supplies, and perhaps goods were shifted from one location to another as needed. Thirty one heating stoves are listed in the nine inventories examined. There was a clear turnover in inventory between the years, since the stoves usually had substantially different prices, and were often listed as “new inventory.” Therefore, it was not the same unsold stoves being counted each year. This suggests that the population of Labrador was buying heating stoves in significant numbers at this time.

During the first half of the nineteenth century, heating stoves may have perhaps been more commonly used among residents of European descent in Labrador than on the island portion of the province. One could speculate that this may have been due to the more extreme physical environment of Labrador. Colder winter temperatures may have made the purchase of a heating stove far more attractive in Labrador than on the island. The inefficient open hearth could still provide enough warmth for survival in the comparatively mild winters experienced in Newfoundland, while the climate of Labrador provided added incentive to purchase a stove. Alternately, it could be simply because a good sales record exists for the Forteau region in the 1830s.

Another crucial source of information afforded by the merchant ledgers is the *price* of stoves in relation to household income. Clearly the price of such a major domestic acquisition was an important factor in their diffusion. For example, three cook stoves

were sold by the Ryan firm of Bonavista in 1870.<sup>22</sup> These stoves cost £6, £6 10s, and £7 10s respectively. Such a price would have made up a significant portion of a fisherman's yearly income. The annual income of the customers in the ledger varied substantially; some had an income of less than £20, while others had more than £100 for the year. However, most customers of the Ryan firm had annual incomes of approximately £40 to £60.<sup>23</sup> For the customers in the ledger with average incomes, a cook stove would account for ten to fifteen percent of their apparent yearly income. Thus a stove would have been a significant purchase for a fishing family which likely had little disposable income to begin with. In general, most of the goods listed in the ledger are food supplies, and in comparison with the cost of such essentials, a stove was an enormous monetary commitment. For example, five gallons of molasses and twenty five pounds of pork each cost 18s 9p, while a yard of calico could be purchased for 1s 3p, and a fur cap for 5s 3p.<sup>24</sup> It was thus a significant commitment for a family to decide to purchase a cast iron stove. However, Mannion has mentioned that the high price of the stove cannot alone explain its slow acceptance. The social role of the open hearth as a gathering place in the home, and as a symbol of hospitality, also helped to maintain the hearth as an important feature in the Newfoundland home until the mid-nineteenth century.<sup>25</sup>

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<sup>22</sup>"Ledger 1870," item 1.01.014 in Series 1 "James Ryan Ltd. (Bonavista), 1857-1965" from the James Ryan Ltd (Bonavista) fonds, Maritime History Archive, Memorial University of Newfoundland.

<sup>23</sup> There is no way of guaranteeing that the customers listed in the ledger sold all of their catch to the Ryan firm. Some may have sold some of their fish to one merchant, and the remainder to another. There is no way to discern this, however.

<sup>24</sup> "Ledger 1870," item 1.01.014 in Series 1 "James Ryan Ltd. (Bonavista), 1857-1965" from the James Ryan Ltd (Bonavista) fonds, Maritime History Archive, Memorial University of Newfoundland, pp. 5, 9, 47.

<sup>25</sup> Mannion, *Irish Settlements in Eastern Canada*, 163.

### **4.3.3 Summary of the Nineteenth Century Heating and Cooking Technology**

The patterns in heating and cooking technology indicated by the newspaper advertisements and merchant ledgers cannot be firmly established from the available data, since not all areas of the island are covered by these sources, and since the temporal coverage is also sporadic. Nonetheless, some general comments can be made on the trends indicated by a study of the sources. Throughout the nineteenth century, the population of Newfoundland gradually shifted from an open hearth as the main means of heating and cooking to a cast iron cook stove, supplemented in many homes by a separate heating stove or fireplace. Sales of bake pots indicate that the open hearth was prevalent during the first half of the nineteenth century, but its use decreased as cook stoves became common. Some inhabitants were still using an open hearth in the second half of the century, however, and they were buying the implements and utensils necessary for one. The advertisements in newspapers confirm this trend, with far fewer references to open hearth utensils in the later years of the century. A few scattered references indicate that some of the population was still cooking on an open hearth as late as 1870. Cook stoves had been introduced to the island by 1810, when they are mentioned in the newspapers. They were relatively scarce during the first few decades of the century, but by 1870 they appear to have replaced the open hearth in most homes on the island.

The situation of fireplaces and heating stoves was somewhat similar. Open fires, whether in a hearth or fireplace, were the main method of heating a home during the first half of the nineteenth century, a pattern discernible in the estate auctions and the sales of

fireplace implements. Cast iron heating stoves were available to the population early in the century, however, and some inhabitants were purchasing them. These stoves became more common in the second half of the century, and sales in the 1870s were greater than those in the 1830s and 1840s. Some citizens continued to use an open fire to heat their home, supplementing a cook stove with a parlour fireplace, and references to fireplaces occur regularly throughout the second half of the nineteenth century as well.

#### 4.3.4 Comparison with Other Parts of North America

The introduction of cook stoves to Newfoundland, and the adoption of these stoves by the population seem to have been fairly similar to other parts of North America, although Newfoundland's use of heating stoves differed somewhat from some of these areas. Pennsylvania Germans brought cast iron heating stoves with them when they immigrated to the United States, and stove manufacturing began in America in the eighteenth century, producing cast iron stoves adapted from the continental European precedents as early as 1720.<sup>26</sup> These first stoves were heating stoves, and cooking was still done on the open hearth. However, in 1760, American manufacturers introduced the first stove intended for cooking upon.<sup>27</sup> Although cook stoves were present in the United States in the eighteenth century, the new technology was at first unpopular. People believed closed stoves created stale air which could injure the health of a home's occupants.<sup>28</sup> As well, people enjoyed the sight of an open fire, and worried that they would forget to feed

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<sup>26</sup> Brewer, *From Fireplace to Cookstove*, 33.

<sup>27</sup> *Ibid.*

<sup>28</sup> *Ibid.*, 26.

wood into a stove if they could not see the fire.<sup>29</sup> It was not until the middle of the nineteenth century that most of the population of the New England states was using a cast iron cook stove to meet their cooking and heating needs.<sup>30</sup> This is approximately the same time as determined above.<sup>31</sup> The merchant ledgers and newspaper advertisements roughly confirm such a date for Newfoundland. A primary difference between the Newfoundland and American situations is that in the United States, heating stoves were present for more than a century before cook stoves were invented, while in Newfoundland, both heating and cooking stoves seem to have been introduced at approximately the same time. Brewer credits the early presence of cast iron heating stoves in America to the transfer of technology from Europe with the Pennsylvania Germans.<sup>32</sup> Since immigrants to Newfoundland were primarily from the United Kingdom, where the open hearth was still the main method of both heating and cooking at the beginning of the nineteenth century,<sup>33</sup> these immigrants did not introduce stoves to Newfoundland.

The situation in Quebec was similar to that in the United States, with the Forges du Saint Maurice producing heating stoves for the population soon after its establishment in

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<sup>29</sup> Ibid.

<sup>30</sup> Ibid., 123.

<sup>31</sup> Mannion and O'Dea also identified the mid-nineteenth century as the time by which the cast iron stove was commonly used in Newfoundland. (Mannion, *Irish Settlements in Eastern Canada*, 163; O'Dea, "Cooking and Heating Technology," 14)

<sup>32</sup> Brewer, *From Fireplace to Cookstove*, 26-7.

<sup>33</sup> Mannion, *Irish Settlements*, 140-1; Eveleigh, *Firegrates and Kitchen Ranges*, 19-21; West, *The Fireplace in the Home*, 94.

1736.<sup>34</sup> In fact, the potential ability of a forge to make “stoves and necessities for the colony” was one of the arguments colonial officials used in their attempts to gain approval for an ironworks at the St. Maurice site.<sup>35</sup> However, these first stoves produced were intended only for heating, and the St. Maurice ironworks did not begin producing cook stoves until the 1820s.<sup>36</sup> Thus, the population of Quebec had access to heating stoves much earlier than Newfoundland, although the introduction of cook stoves seems to have been similar in both colonies.

McIlwraith mentions that cast iron stoves were introduced in Ontario in the 1830s when improved inland transportation allowed them to reach the rural population,<sup>37</sup> and Ennals states that both cook stoves and heating stoves became widely available in Acadian communities in New Brunswick and Nova Scotia after 1860.<sup>38</sup> Again, these times do not vary widely from the Newfoundland situation.

#### 4.3.5 The Origins of Imported Stoves

Information on the source of imported stoves, both for heating and cooking, in Newfoundland is limited, since, as mentioned earlier, stoves were not listed as a separate commodity in the Customs Returns of the island until 1897. However, newspaper

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<sup>34</sup> Roch Samson, *The Forges du Saint-Maurice: Beginnings of the Iron and Steel Industry in Canada 1730-1883* (Ottawa: Department of Canadian Heritage - Parks Canada, 1998), 7.

<sup>35</sup> *Ibid.*, 3.

<sup>36</sup> *Ibid.*, 232.

<sup>37</sup> Thomas F. McIlwraith, *Looking for Old Ontario* (Toronto: University of Toronto Press, 1997), 13.

<sup>38</sup> Peter Ennals, “The Folk Legacy in Acadian Domestic Architecture: A Study in Mislaid Self Images” in *Dimensions of Canadian Architecture*, Society for the Study of Architecture in Canada: Selected Papers, vol. 6, ed. Shane O’Dea and Gerald L. Pocius (Ottawa: Society for the Study of Architecture in Canada, 1984), 10.

advertisements and a variety of secondary sources give some indication of the origins of these stoves. The Atlantic Canada Newspaper Survey (ACNS) is an online database of advertisements from nineteenth century newspapers in Atlantic Canada.<sup>39</sup> The database was searched for Newfoundland references to stoves and fireplace implements, and these advertisements augmented those mentioned earlier, which had been searched for references to heating and cooking technology in Newfoundland. The ACNS does not provide complete coverage of all nineteenth century newspapers in Newfoundland. The project intended to index the leading newspaper of the most important community in each of the four Atlantic provinces, and more papers could be added if wished. Apparently several newspapers were indexed for Newfoundland, but due to financial constraints, the ACNS project was never completed.<sup>40</sup> I was unable to discover which newspapers are currently in the database and how they were selected.<sup>41</sup> Thus, it would be inappropriate to use the advertisements found on the ACNS in conjunction with those searched manually for determining the timing of stove introduction and use, since the number of references to different items was important, and there was no guarantee that the ACNS advertisements were a representative sample. However, the ACNS advertisements were useful in determining origins of imported stoves in Newfoundland. All ACNS references

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<sup>39</sup> Atlantic Canada Newspaper Survey [online]. Last modified 27 April 2002 [cited 28 February 2003]. Available from World Wide Web: <<http://daryl.chin.gc.ca:8000/BASIS/acns/user/www/sf>>

<sup>40</sup> Peter Rider, "Re:Atlantic Canada Newspaper Survey" [e-mail] (11 March 2005)

<sup>41</sup> Communication with Gerald Pocius, the contact for the Newfoundland portion of the project, did not resolve the problem. Gerald Pocius, "Re: Atlantic Canada Newspaper Survey" [e-mail] (9 November 2004). Contact with Peter Rider, Atlantic Provinces Historian and Curator Canadian Museum of Civilization provided insight into the intended coverage of the database, leaving current coverage unknown. (Peter Rider, "Re:Atlantic Canada Newspaper Survey" [e-mail] [11 March 2005]). CHIN was also unable to answer the question. (Sarah LaRose, "Re: message # 03-51 Atlantic Canada Newspaper Survey" [e-mail] [30 March 2005])

to stoves of particular origin were verified by checking the original advertisement before including them in this study.

There appear to have been three main sources of imported stoves in Newfoundland, and these were Europe, the United States, and other parts of Canada. Britain was a significant source of European stoves in Newfoundland. Two newspaper advertisements from the nineteenth century list ships with cast iron stoves among their cargo arriving in Conception Bay from Liverpool.<sup>42</sup> Cast iron stoves from Manchester arrived in St. John's via Halifax in 1833,<sup>43</sup> and "London Manufactured Goods," including grates, stoves, and ranges, were advertised in 1845.<sup>44</sup> George Gear and Robert Peace, both prominent St. John's stove merchants in the second half of the nineteenth century, advertise stoves of English origin. Gear lists nine different makes of cook stoves and ranges "of British manufacture" as well as "English and American grates."<sup>45</sup> Peace advertises that he has "also stoves of all other kinds worth having, both English and American...."<sup>46</sup> The presence of stoves of British origin in Newfoundland is not surprising, given the predominance of other goods of British manufacture on the island. Chang states that the Newman firm received its main supplies of manufactured goods from London, Plymouth, Portsmouth, Liverpool, Bristol, and Dartmouth.<sup>47</sup> She also

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<sup>42</sup> *Star & Conception Bay Journal* (Carbonear) 3 October 1838 and 17 October 1838.

<sup>43</sup> *The Royal Gazette and Newfoundland Advertiser* (St. John's) 20 August 1833.

<sup>44</sup> *The Times and General Commercial Gazette* (St. John's) 3 May 1845.

<sup>45</sup> *The Day Book* (St. John's) 8 September 1863.

<sup>46</sup> *The Day Book* (St. John's) 21 October 1863.

<sup>47</sup> Margaret Ann Chang, "Newfoundland in transition: the Newman trade and Robert Newman and Company, 1780-1805" (MA diss., Memorial University of Newfoundland, 1974), 94.

mentions that most of the ironmongery the Newmans imported came from Bristol.<sup>48</sup> Mannion confirms this pattern for the origins of Newfoundland goods, stating that “England supplied mainly manufactured items, and Ireland dominated the supply of provisions.”<sup>49</sup>

Other parts of Europe also exported stoves to Newfoundland on occasion. Several vessels with a provenance in Hamburg included stoves among their cargo during the nineteenth century.<sup>50</sup> This is not unexpected, since Germans began manufacturing cast iron heating stoves in the late fifteenth century. Though the Netherlands, France, and Scandinavian countries were also producing stoves centuries before Britain, there is little evidence that stoves from these countries were used on the island of Newfoundland. Import statistics for the year 1900-01 list \$6.00 worth of stoves entering Newfoundland from Norway, and in the same year, \$197.00 worth of stoves from Sweden.<sup>51</sup> This seems to be a one time occurrence, however, and nowhere else are Scandinavian stoves mentioned.

The United States was another source of imported stoves to Newfoundland. Benjamin Franklin began experimenting with improved forms of heating technology in

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<sup>48</sup> Chang, "Newfoundland in Transition," 94.

<sup>49</sup> John Mannion, "The Waterford Merchants and the Irish-Newfoundland Provisions Trade, 1770-1820," in *Négoce et industrie en France et en Irlande aux XVIIe et XIXe siècles: actes du Colloque Franco-Irlandais d'Histoire, Bordeaux, Mai 1978* (Paris: Éditions du Centre National de la Recherche, 1980), 27.

<sup>50</sup> *The Newfoundlander* (St. John's) 5 September 1827; *Patriot and Terra-nova Herald* (St. John's) 21 November 1859.

<sup>51</sup> Newfoundland. House of Assembly, *Journal of the House of Assembly of Newfoundland 1900-01* (St. John's: The House of Assembly, 1901)

Pennsylvania in the first half of the eighteenth century, and his ‘Pennsylvania Fireplace’ was being manufactured soon after. Numerous inventors during the next two centuries took out patents on a variety of cast iron fireplaces and stoves, drawing on Franklin’s ideas, continental European precedents, and their own innovations. Foundries were scattered across the country, many of which were producing stoves for the growing population, and exports from these American foundries helped supply the Canadian market. Parlour stoves were received from Boston in 1855.<sup>52</sup> The Gear and Peace advertisements quoted earlier mention stoves of American manufacture, and the Rutherford Brothers ran an advertisement for several weeks in the *Harbor Grace Standard* promoting “on consignment American cooking stoves.”<sup>53</sup> The United States was the leader in the development of cast iron stoves in North America, and the first full-function cook stoves were developed there, a technology that was introduced to Britain as well.<sup>54</sup> Thus it is not surprising that some of this American technology found its way to Newfoundland.

Nova Scotia and Quebec appear to have been main sources of Canadian stoves in Newfoundland. MacKinnon, in discussing the vernacular architecture of the Codroy Valley, on the west coast of Newfoundland, mentions that perhaps the reason for a lack of evidence of stone chimneys in the Valley is that by the time inhabitants migrated from Cape Breton Island to the Codroy Valley, cast iron stoves were becoming common in

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<sup>52</sup> *The Newfoundlander* (St. John's) 4 January 1855.

<sup>53</sup> *Harbour Grace Standard* 15 February 1860.

<sup>54</sup> Eveleigh, *Firegrates and Kitchen Ranges*, 28; Brewer, *From Fireplace to Cookstove*, 62.

Eastern Canada. Citizens of Cape Breton were importing stoves from Quebec, the United States, and Great Britain.<sup>55</sup> Eventually Nova Scotia foundries also made stoves.

MacKinnon suspects that the Cape Breton immigrants were accustomed to stove technology prior to arriving in Newfoundland. They brought with them, if not the stoves themselves, at least the desire for them.

Several foundries were established in Nova Scotia before one appeared in Newfoundland. Halifax, Pictou, New Glasgow, and Windsor all had foundries that manufactured cast iron stoves prior to the establishment of Newfoundland's first stove-producing foundry in 1857.<sup>56</sup> Many more stove foundries sprang up in Nova Scotia in the 1860s, including those in Bridgewater, Dartmouth, Yarmouth, and Truro.<sup>57</sup> A newspaper advertisement from 1867 lists stoves arriving on a vessel from Halifax, possibly where these stoves were produced.<sup>58</sup> Thompson & Sutherland, a stove manufacturer in North Sydney, appointed G.W. Gent as the agent for their stoves in Trinity, NL in 1913, indicating a direct transfer of cast iron stove technology from Nova Scotia to Newfoundland.<sup>59</sup> Gent advertised the firm's stoves in the local newspaper throughout the next two years (Figure 4.9).<sup>60</sup> In addition, two prominent foundries in Sackville, NB also produced cast iron

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<sup>55</sup> MacKinnon, *Vernacular Architecture in the Codroy Valley*, 20-1.

<sup>56</sup> George MacLaren, *The Romance of the Heating Stove* (Halifax: Nova Scotia Museum, 1972), [19]

<sup>57</sup> *Ibid.*

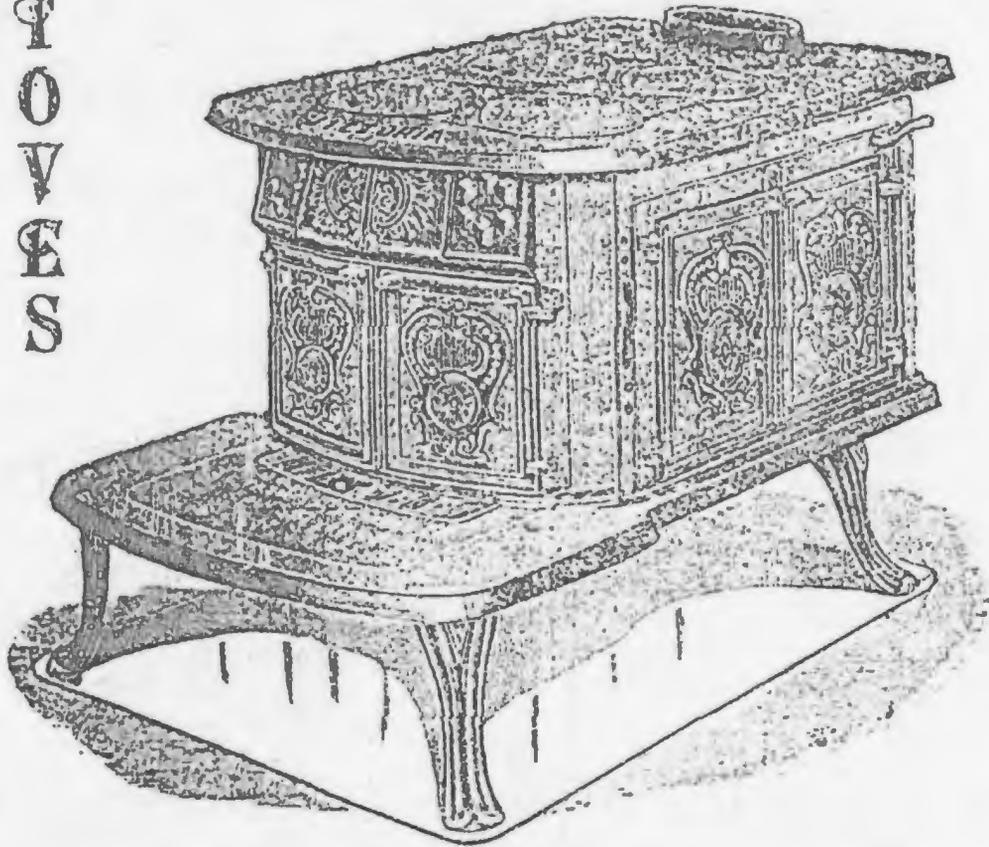
<sup>58</sup> *The Morning Chronicle* (St. John's) 12 November 1867.

<sup>59</sup> *Trinity Enterprise*, 29 November 1913.

<sup>60</sup> *Trinity Enterprise* 4 April 1914 and 25 September 1915.

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STOVES!



Having been appointed Agent for Thompson & Sutherland, Ltd. of North Sydney, I am prepared to sell you any Stove or Range made by that well known Company at the lowest possible price.

Our "OUR OWN" and "QUEEN COOK" are two splendid kitchen stoves, while the "Arctic Hot Blast" and "Silver Oak" are two of the best Hall or Parlor Stoves that can be made. Catalogue can be seen at my store.

G. W. GENT,

Trinity, N.F., Sole Agent for  
THOMPSON & SUTHERLAND, Ltd., North Sydney.

Figure 4.9: 1913 advertisement of G.W. Gent, stove agent in Trinity for Thompson & Sutherland of North Sydney

Source: *Trinity Enterprise* 29 November 1913

stoves in the nineteenth and twentieth centuries, and there are references to stoves from these foundries making their way to the Newfoundland market.<sup>61</sup>

Quebec also supplied stoves for the Newfoundland market. An advertisement in 1819 declares that Baine, Johnston & Co. “Have just Received per Schr Providence, from Quebec, An Assortment of very fine STOVES, which they will sell at a very small advance on Cost.”<sup>62</sup> The Forges du Saint Maurice seem to have been one of the primary producers of stoves for the Quebec population, and as mentioned above, they began production in 1736. While Quebec was under French rule, much of the iron produced by the forges was reserved for French consumption. However, once the British gained control of the colony, more iron was made into manufactures for the colony, and some of the stoves produced through this were shipped to other British colonies.<sup>63</sup> Other manufacturers eventually began also making stoves in Canada, and between 1835 and 1845, there were at least sixty nine “makers or inventors of heaters” in Upper Canada and twenty five in Lower Canada.<sup>64</sup> The specific foundry from which Newfoundland imports originated is unclear, but stoves from Quebec were obviously making their way onto the island.

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<sup>61</sup> For example, Levi Diamond’s advertisement in the 29 March 1909 issue of the *Trinity Enterprise* promotes an Enterprise cook stove to the Newfoundland market.

<sup>62</sup> *Newfoundland Mercantile Journal* (St. John’s) 11 November 1819.

<sup>63</sup> Samson, *The Forges du Saint-Maurice*, 231

<sup>64</sup> Marcel Mousette, *Le chauffage domestique au Canada, des origines à l’industrialisation* (Quebec City: Presses de l’Université Laval, 1983) quoted by Samson, *The Forges du Saint-Maurice*, 405.

#### 4.3.6 Methods of Obtaining a Stove

There were four ways in which a Newfoundland resident could obtain a stove. Probably the most common method was to purchase one from a general merchant for cash or credit. These merchants could order stoves from one of the stove merchants in St. John's, purchase those that had been imported to the island by large merchant houses and foundries, or order them directly from a local manufacturer, such as the United Nail and Foundry in St. John's. Another way in which inhabitants of St. John's could purchase stoves was through auctions, such as the estate auctions mentioned earlier. After stove merchants, who dealt specifically in heating and cooking equipment, were established in the larger settlements of the island in the mid nineteenth century, people had a third option, ordering stoves directly from these merchants, who bought both imported and locally manufactured stoves from local foundries. These merchants also solicited their wares among the rural population of the island, with advertisements claiming, "Orders from the Outports punctually attended to."<sup>65</sup> The fourth way in which residents of the island could obtain stoves, although not a very common method, was through lotteries. Twice in 1815 George Burton advertised in *The Royal Gazette* that he was having a lottery (Figures 4.10 and 4.11). Among the prizes available in the first lottery was listed "1 Patent Kitchen Range, with Oven &c."<sup>66</sup> The second lottery Burton held included two Canadian stoves among its prizes, as well as a register stove, also known as a register grate.<sup>67</sup> These lotteries are particularly interesting, because they demonstrate that stoves

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<sup>65</sup> Advertisement of John Sheehan *Harbor Grace Standard* 19 September 1860.

<sup>66</sup> *The Royal Gazette and Newfoundland Advertiser* 9 March 1815.

<sup>67</sup> *The Royal Gazette and Newfoundland Advertiser* 4 May 1815.

## THE SUBSCRIBER

HAVING a number of valuable Articles on hand, belonging to different Consignments, intends closing the Sales of them by a LOTTERY. Among others are the following Prizes: -

1 Handsome Piano Forte

20 Silver Watches; 1 Gold ditto,

→ 1 Patent Kitchen Range, with Oven &c.

1 Mahogany Celleret,

2 Handsome sets of China, &c. &c.

Copies of the SCHEME can be had at his AUCTION ROOM, where TICKETS are selling *Twenty Shillings* each, and where the several Articles can be seen.

N.B. As several Tickets are already disposed of, the Drawing will soon take place.

G. BURTON

**Figure 4.10: 1815 advertisement for a lottery with a patent kitchen range as one of the prizes. The original advertisement has been re-typed for clarity.**

Source: *Royal Gazette* 9 March 1815

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## LOTTERY.

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**T**HE Subscriber purposes disposing of a number of valuable Articles by **LOTTERY**, amounting to £ 311 Sterling. Among others are the following *PRIZES, — viz. —*

- 2 Gold Watches, 9 Silver ditto,
- 1 Mahogany Sideboard,
- 1 Lady's elegant purple silk Velvet Dress, trimmed with Gold.
- 1 Ditto black ditto ditto, trimmed with Lace.
- 1 Ditto purple ditto Pellisse,
- A variety of Ladies' Mantles and Bonnets,
- 1 Register Stove, & 2 Canadian ditto,
- 2 Pair plated Candlesticks, with silver edges. &c. &c. &c.

→ The Dresses, can be seen at Mrs. Dalton's, opposite Messrs. Trimingham & Co's. where Tickets are selling at 20s. each; and the Watches, Furniture, &c. at his Auction Room, where Tickets can be had also.

**GEORGE BURTON.**

St. John's, 27th April, 1815.

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Figure 4.11: 1815 advertisement for a lottery including two Canadian stoves and a Register stove among its prizes

Source: *Royal Gazette* 4 May 1815

were not common possessions at this time. If each household already owned a stove, there would have been little reason to participate in a lottery for the chance of winning one. The stoves, like the other prizes of gold and silver watches and a “Handsomeness Piano Forte,”<sup>68</sup> were rare among the population at this time, and thus were worth trying to win.

#### **4.4 Nineteenth Century Use of Forest Resources**

At the beginning of the nineteenth century, when cast iron stoves were introduced to Newfoundland, much of the population was using wood from the surrounding forests as their principal fuel source. This continued throughout the nineteenth century, although some of the population began burning coal, a transition that will be examined in chapter six. Prior to the introduction of cast iron stoves, winterhousing was practiced by many Newfoundland inhabitants as a means of obtaining a sufficient supply of firewood. By the late nineteenth century this phenomenon had begun to decline, and it is not a coincidence that this was at approximately the same time as cast iron stoves were commonly being used on the island. Smith mentions that the introduction of cast iron stoves and coal-burning grates was one of the factors that led to the decline of winterhousing.<sup>69</sup> These stoves were more effective at heating a home than were the open hearths they replaced, both because the stoves were more fuel efficient than open fires, and because the cast iron plates of the stove absorbed heat from the fire and radiated it into the room. Thus, a smaller fire was needed in the stoves to keep a home at a comfortable, or, as was often the case, bearable, temperature. Thus, when the provision

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<sup>68</sup> *The Royal Gazette and Newfoundland Advertiser* 9 March 1815.

<sup>69</sup> Smith, "In Winter Quarters," 23.

of sustained warmth was the main goal, it was much more effective to light the fire in a cast iron stove than in an open hearth or fireplace. The more fuel-efficient properties of a stove meant that less fuel wood was needed to warm a dwelling and cook meals, so the yearly migration into the woods for fuel became less essential.

There were many other factors that allowed the population of Newfoundland to remain in their outport homes year round. The establishment of schools and churches in many communities, which expanded and grew in numbers in the nineteenth century (Table 4.8) enticed citizens to stay in their coastal dwellings throughout the winter, and cast iron stoves were one of the factors that allowed them to do so. Other reasons include the increase in the number of horses and oxen in the nineteenth and twentieth centuries, which could haul wood further than men or dogs.<sup>70</sup> Early census data on draft animals is unreliable, but data from later in the nineteenth century shows a steady increase in the number of horses in Newfoundland (Table 4.9). Figure 4.12 illustrates the use of horses to pull firewood as late as the end of the twentieth century. In the twentieth century, motor boats also made it easier to haul wood longer distances.<sup>71</sup> Also, more airtight houses, resulting from access to a wider array of building materials and tools, reduced fuel consumption.<sup>72</sup> Thus, the cast iron stoves were one of a number of factors that allowed the population of Newfoundland to discontinue the practice of winterhousing.

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<sup>70</sup> Smith "In Winter Quarters," 23-4; Faris, *Cat Harbour*, 34.

<sup>71</sup> Smith, "In Winter Quarters," 23-4.

<sup>72</sup> Ibid.

**Table 4.8**  
**The Growing Number of Schools and Churches in Nineteenth Century**  
**Newfoundland**

<b>Year</b>	<b>Schools</b>	<b>Churches</b>
1836	78	86
1857	280	173
1869	no data	218
1874	no data	225
1884	564	374
1891	635	427
1901	766	517

Source: Censuses of Newfoundland and Labrador 1836-1901.

**Table 4.9**  
**The Growing Number of Horses in Nineteenth Century Newfoundland**

<b>Year</b>	<b>Horses</b>
1874	1,057
1884	5,536
1891	6,138
1901	8,851

Source: Censuses of Newfoundland and Labrador 1836-1901



**Figure 4.12: A horse hauling firewood in the community of Tilting on Fogo Island**

Source: Mellin, *Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales From a Newfoundland Fishing Village* (New York: Princeton Architectural Press, 2003), 57.

#### 4.5 Summary

Although the newspaper advertisements and merchant ledgers do not provide a definitive picture of the heating and cooking technology used during the nineteenth century, some general comments can still be made based on the information they supply. During the nineteenth century, Newfoundland residents switched from an open hearth to a cast iron stove as the main means of heating and cooking. The open hearth was widespread during the first half of the century, but after cook stoves were introduced at the beginning of the century, its use decreased. Although a few residents were still using an open hearth in 1870, cook stoves were the common means of heating and cooking at this time.

Open fires, in both open hearths and fireplaces, were the customary method of heating a home throughout the first half of the nineteenth century. Cast iron heating stoves were available early in the nineteenth century, if not before, and some residents chose to buy them. These heating stoves seem to have become more common during the second half of the century, when they were used to supplement the heat provided by a cook stove. The fireplace did not completely disappear in the same way as did the open hearth, however, and some inhabitants continued to use this supplemental form of heating.

Brewer writes that, in the New England states, “there was a clear connection between the availability of affordable fuel and the decision to acquire a stove.”<sup>73</sup> She examines documentation from the late eighteenth century in which people specifically state that

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<sup>73</sup> Brewer, *From Fireplace to Cookstove*, 37.

they adopted cast iron stoves because a scarcity of fuel wood led to high prices. In Newfoundland the situation was not as straightforward. As discussed previously, firewood shortages existed in some areas of the island, and it seems logical that these shortages would have enticed some members of the population to purchase more fuel efficient wood stoves. However, only two advertisements of those examined in the newspapers mention the fuel saving qualities of the stoves promoted. In one of these advertisements, illustrated in Figure 4.13, Gleeson's Ironmongery Store in St. John's writes, "special attention of housekeepers is called to the Kitchen Range and Oven ... which in the saving of time and fuel is invaluable."<sup>74</sup> The other advertisement promotes the Enterprise cook stove as "a fuel saver and good baker."<sup>75</sup> The fuel saving qualities of these new devices do not seem to have been foremost in the minds of the public, since other advertisements do not mention them. Rural citizens had found methods of coping with firewood shortages, mainly through the practice of winterhousing. The fuel saving properties of cast iron stoves perhaps enticed the rural population to purchase stoves, but it may have been more for the fact that this allowed them to stay in outports year round than for the actual decrease in fuel requirements. In urban areas, firewood shortages were more acute, since the population did not practice winterhousing. There is still little evidence that these shortages convinced the inhabitants to buy stoves however, but it is likely that the decreased fuel costs associated with a stove were taken into consideration when purchasing one.

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<sup>74</sup> Advertisement for Gleeson's Ironmongery, *Harbor Grace Standard* 4 January 1860.

<sup>75</sup> Advertisement for Levi Diamond, *Trinity Enterprise* 29 March 1909.

## Gleeson's Ironmongery Store,

ESTABLISHED 1810.

This Establishment is now heavily supplied with the Tools and Implements required by the Labouring and Mechanical classes, viz:

HATCHETS, Hammers, Chisels, Pickaxes, Mattocks,  
Wrought Iron and Steeled SHOVELS, warranted not to crack, break, or split in the eye, Locks, Hinges, &c.,—and all the other Furniture and Materials required by Architects, Builders, and Joiners.

### A MANUFACTURING SMITHY

is attached, and is now in "Full Blast," under the superintendance of a skilful mechanic, where the Sealer, Fisherman and Mariner can be supplied with Anchors, Grapnels, Bogies, Cod and Dip-net Irons, and all the other Iron plant required for the prosecution of the Seal, Cod, and Herring fisheries.

Special attention of House-keepers is called to the Kitchen Range and Oven, with Rebounder attached, which in the saving of time and fuel is invaluable. Parlour, Bed-room, and Drawing-room Grates, neatly finished, Kitchen Fenders, Kitchen Grates, with falling bar, Cranes, &c.

Ploughs, Churns, Manure and Stable Forks, and all other Implements required by the Farmer, Mower and Roadmaker.

Fairbanks' Scales, Union platform, Even and Spring Balances—these articles are used and approved of throughout America. The advertiser being Agent for the Manufacturer any order for Scales and Weights of any description will be promptly executed.

The requirements of SPORTSMEN have been faithfully attended to in the selection of the best material, viz: Hall's Rifle and Sporting POWDER, Walker's Central Fire CAPS, for fowling pieces, and Hat Caps for large guns, SHOT, &c., &c.

### GLEESON'S IRONMONGERY STORE

is conducted upon the economic and self-relying principles, the Proprietor and his Family attending to the details of the business, is under low rent, and has'nt to pay any charge whatever that must come, out of profits, either to Jews, Bankers, Brokers, Commission Agents, nor Auctioneers.

Admiral's Beach, Water Street,  
St. John's, Nov. 16.

Figure 4.13: 1860 advertisement for Gleeson's Ironmongery in which the fuel saving qualities of a kitchen range are explicitly mentioned

Source: *Harbour Grace Standard* 4 January 1860

## CHAPTER FIVE

### LOCALLY MANUFACTURED STOVES

#### 5.1 Introduction

The cast iron stoves discussed in the previous chapter were imported to Newfoundland from a variety of locations. However, not all stoves used during the nineteenth century were manufactured elsewhere, and products from Newfoundland foundries joined those from Europe, the United States, and other parts of Canada in heating the homes of the island. Newfoundland foundries began manufacturing cast iron stoves in 1857, and therefore both imported and domestically manufactured stoves were available on the island from this date onwards. This chapter discusses local stove manufacturing foundries, their products, and the use of these products by Newfoundland residents.

#### 5.2 Population Characteristics

The market for these stoves has already been discussed in chapter four in terms of population characteristics, as have the methods by which Newfoundland residents obtained the supplies needed for survival. These traits need not be repeated here. The essential characteristics to keep in mind are the dispersed, coastal nature of Newfoundland communities, and the rapid growth rate of the population, at least until the 1880s, after which growth was more restrained.<sup>1</sup>

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<sup>1</sup> Staveley, "Population Dynamics in Newfoundland," 59.

### 5.3 Newfoundland Foundries

Founding is defined as “the process of remelting metals and casting them in molds.”<sup>2</sup>

This process was widely used with lead throughout European occupation of Newfoundland, and archaeological excavation of the plantation at Cupids, established in 1610, provides evidence of lead melting and casting.<sup>3</sup> Cast lead objects, such as cod jiggers, for example, played an important role in the residential fishery. The first *iron* foundry to be established on the island was erected by C.F. Bennett, from Dorset, England,<sup>4</sup> in combination with the brewery, distillery, flourmill, sawmill, and forge he built on Mullins River, beside present day Victoria Park in downtown St. John’s, in 1827.<sup>5</sup> However, there is no evidence that this foundry produced cast iron stoves. Figure 5.1 illustrates the location of Bennett's premises, as well as those of the other foundries in St. John's mentioned in this chapter.

Two decades later, Bennett brought John Angel Sr. from Halifax to manage a more substantial foundry for him, but this new foundry also does not seem to have manufactured stoves. It produced instead, various items of ironwork associated with the fishing industry.<sup>6</sup> There is some dispute about the specific date that John Angel arrived in Newfoundland, and whether the foundry existed prior to his arrival or he built it after

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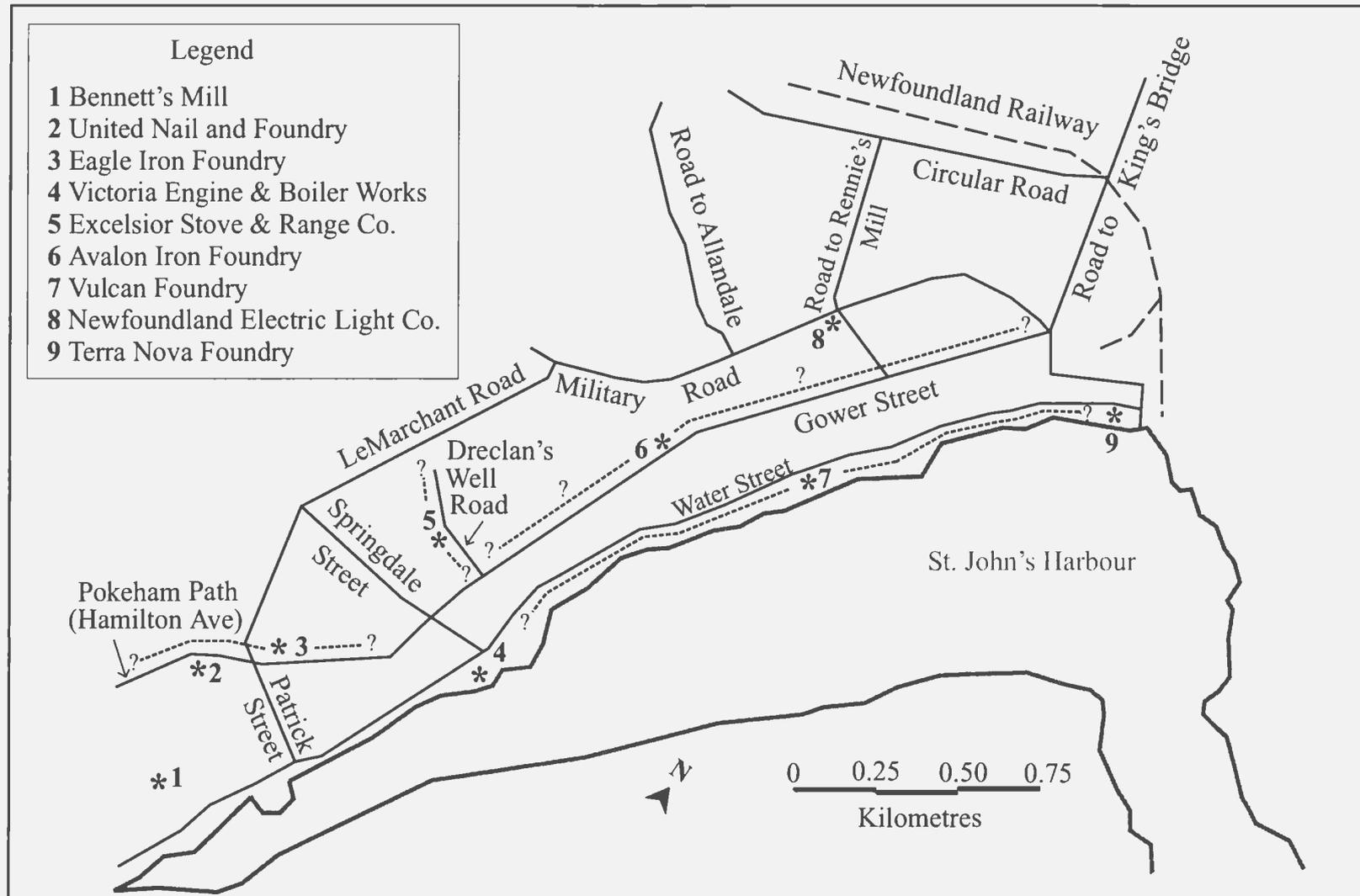
<sup>2</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* Joseph R. Smallwood ed. (St. John’s: Newfoundland Book Publishers, 1981-1994) s.v. “Foundries, Smithies, and Nail Manufacture,” p. 348.

<sup>3</sup> *Ibid.*

<sup>4</sup> *Encyclopedia of Newfoundland and Labrador Vol. 1* s.v. “Bennett, Charles Fox,” p. 175.

<sup>5</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. “Foundries, Smithies and Nail Manufacture,” p. 349.

<sup>6</sup> Anchors, grapnels, barking kettles, and general ship’s ironwork were among those items produced for the fishery for Bennett’s foundry. (*Ibid.*)



**Figure 5.1: Map showing the location of St. John's foundries and the Newfoundland Electric Light Company at the end of the nineteenth century. City directories were used for determining the locations of the foundries, but some listings in the directories mentioned only a street name, without a street number. The estimated locations of such foundries are illustrated with a dotted line and question marks.**

reaching St. John's.<sup>7</sup> Regardless of the specific timing of the events, John Angel Sr. and his sons James and John Jr. had arrived in St. John's by 1850, and were operating Bennett's new foundry.<sup>8</sup> Bennett's Mill, as his complex was referred to, burned down in 1856.<sup>9</sup> Bennett rebuilt his premises, and simultaneously, the Angel family built its own foundry nearby, on Pokeham Path, now called Hamilton Avenue, beside what was to later become Alexander Street.<sup>10</sup> Figure 5.2 depicts this location as it stands today, with duplex homes occupying the space where pig iron was once resmelted and cast into stoves. The Angels' foundry was known as the New Angel Foundry, and, among other items, it manufactured cast iron stoves.<sup>11</sup> In 1867, John Angel Jr, who had been training as a pattern maker in the United States, returned to Newfoundland to join the family business.<sup>12</sup> John Angel Sr. retired in 1870, and his sons combined the New Angel Foundry with Bennett's rebuilt foundry, naming the product the St. John's Iron Foundry Company.<sup>13</sup> This combined foundry produced cast iron stoves, as well as ship's

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<sup>7</sup> John Lawrence Joy, "The Growth and Development of Trades and Manufacturing in St. John's, 1870-1914" (MA diss, Memorial University of Newfoundland, 1977), 157; *Industry '67: centennial perspective* ([Toronto]: Canadian Manufacturers' Association, 1967), 186; Margaret de Young "Time Line for Angel Foundry Business in Newfoundland" (St. John's: PANL, n.d); "The Newfoundlander September 2, 1847" in "Bennett B115" Series 2, "Name Files 1500-1850," Keith Matthews fonds, Maritime History Archive, Memorial University of Newfoundland.

<sup>8</sup> De Young, "Time Line for Angel Foundry" 1. *Industry '67*, 186; *Dictionary of Newfoundland and Labrador Biography* ed. Robert H. Cuff (St. John's: H. Cuff, 1990) s.v. "Angel, James," p. 5; *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 349. "Angel, Hon. James" *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Angel, Hon. James" p. 47.

<sup>9</sup> *Dictionary of Newfoundland and Labrador Biography* s.v. "Bennett, Charles James Fox", p. 19.

<sup>10</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 349.

<sup>11</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 349.

<sup>12</sup> *Ibid.*; Joy, "Trades and Manufacturing," 157.

<sup>13</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 349.



**Figure 5.2: Former location of the United Nail and Foundry on the corner Hamilton Avenue and Alexander Street**

hardware.<sup>14</sup> The company became The Newfoundland Consolidated Foundry Company Limited in 1886, when it was combined with Victoria Engine and Boiler Works, the machine portion of the Angels' foundry operation located at the harbour side, and with several smaller foundries.<sup>15</sup> In 1930, the Newfoundland Consolidated Foundry Company was joined with St. John's Nail Manufacturing, a company established in 1883, to form the United Nail and Foundry (UNF), under the management of James Angel and later, Frederick William Angel.<sup>16</sup> John Bartlett Angel took over the position of foundry president in 1937,<sup>17</sup> and he ran the company until it closed in 1982.<sup>18</sup> In 1949 the Angel firm formed a new company to take over Thompson and Sutherland Company Foundry in North Sydney, NS.<sup>19</sup> This is the same Thompson and Sutherland that were advertising an agent in Trinity in 1913 (chapter four and Figure 4.9). The new firm was known as the Angel Manufacturing and Supply Co. Ltd, with James A. Angel managing.<sup>20</sup> The United Nail and Foundry continued to produce iron castings until 1982 when the firm was placed in receivership.<sup>21</sup> The UNF was torn down the following year, signifying the end of cast iron founding in Newfoundland.<sup>22</sup> It is common practice among the archival and library

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<sup>14</sup> Ibid.

<sup>15</sup> Joy, "Trades and Manufacturing," 157-8. de Young, "Time Line for Angel Foundry," 1.

<sup>16</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 350; Joy, "Trades and Manufacturing," 159; de Young, "Time Line for Angel Foundry," 2; *Dictionary of Newfoundland and Labrador Biography* s.v. "Angel, James," p. 5.

<sup>17</sup> Marilyn Pumphrey and Ron Pumphrey, *Who's who in & from Newfoundland & Labrador : a living history* (St. John's: M. & R. Pumphrey, 1998), 3; *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Angel, Frederick William," p. 47.

<sup>18</sup> Pumphrey and Pumphrey, *Who's Who*, 3.

<sup>19</sup> de Young, "Time Line for the Angel Foundry," 2

<sup>20</sup> Ibid.

<sup>21</sup> Ibid.: *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 350.

<sup>22</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 350; de Young, "Time Line for the Angel Foundry," 2.

staff in Newfoundland to refer to the numerous Angel foundries by their most recent name, the United Nail and Foundry, and this practice will be continued here. Thus, for the purposes of this study, the term United Nail and Foundry, or UNF, refers not only to the Angel firm operating from 1930 to 1982, but also to its predecessor foundries run by the Angel family.

Several other foundries existed in St. John's throughout the nineteenth and twentieth centuries. A few small foundries were in production briefly in the 1870s and 1880s. These included Alexander R. Leask's foundry, the Avalon Iron Foundry, the Excelsior Stove and Range Company, and The Eagle Iron Foundry.<sup>23</sup> However, most of these enterprises closed not long after opening, and two unnamed small foundries, possibly two of those just mentioned, were incorporated into the Newfoundland Consolidated Foundry in 1886.<sup>24</sup> Very little information exists on these small, short-lived foundries. The Excelsior Stove and Range Company, for example, is listed in the 1885 city directory with a foundry on Dreclan's Well Road and warerooms at the corner of George Street and Queen Street.<sup>25</sup> However, this company is not listed in the succeeding directories. Similarly, the Avalon Iron Foundry Company, which manufactured stoves, among other items, is advertised in the 1885 directory, but is not in later ones.<sup>26</sup> Two longer lasting

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<sup>23</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 349.

<sup>24</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 349; Joy, "Trades and Manufacturing," 157.

<sup>25</sup> John Sharpe comp., *Directory for the towns of St. John's, Harbor Grace, and Carbonear, Newfoundland, for 1885-86: containing much useful information relating to the colony* (St. John's: n.p., 1885).

<sup>26</sup> Sharpe, *1885 Directory*, 22.

foundries were the Victoria Engine and Boiler Works, part of the Angels' foundry enterprise, and the Terra Nova Foundry.<sup>27</sup> However, these foundries will not be discussed in detail since they produced boilers, engines, and ship's hardware items, and did not manufacture stoves at any point during their operation.<sup>28</sup>

The other major stove-producing foundry in Newfoundland was the Trask foundry. In 1926, William Trask transferred his family's founding business from Yarmouth, NS to St. John's, where it was located on the Southside, at Millbridge.<sup>29</sup> In 1937 Trask opened a new foundry on Blackmarsh Road, which produced stoves, fire grates, and municipal castings, such as sewer grates and manhole covers.<sup>30</sup> The foundry was destroyed by fire in 1961, but the firm continued to operate until 1982 by selling castings made elsewhere on contract.<sup>31</sup>

Domestic cast iron founding in Newfoundland was limited to this handful of foundries in St. John's, and to the Corner Brook Foundry, which ran from 1926 to 1976, and manufactured equipment for the mills in Corner Brook, as well as municipal castings. The island provided a limited population for the foundries to serve, and although tariff protection allowed these foundries to capture the Newfoundland market, they were

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<sup>27</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 349; de Young, "Time Line for the Angel Foundry," 1.

<sup>28</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 349.

<sup>29</sup> *Ibid.*

<sup>30</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," pp. 349-50.

<sup>31</sup> *Ibid.*, 350.

unable to expand further.<sup>32</sup> Joy explains that “the encouragement of secondary manufacturing in Newfoundland was an attempt to foster import substitution.”<sup>33</sup> The *Encyclopedia of Newfoundland and Labrador* confirms Joy’s comments, stating that “with the exception of scrap metal all raw materials had to be imported, while all major manufacturers depended on heavy tariffs on imports of finished metal goods to retain a hold on the home market. Given the disadvantage of high transportation costs and the lack of a domestic supply of raw materials manufacturers could only hope to supply the small home market for metal goods...”<sup>34</sup> Stove manufacturers in Newfoundland were thus able to gain much of the domestic market, but were unable to expand further, since they did not have the easy access to raw materials required for economical production. Despite such limitations, the UNF still managed to expand into a large, successful foundry. In 1880, the foundry employed thirty five workers at its Hamilton Avenue location, while in 1967, eighty workers were employed at the same location.<sup>35</sup> Figures 5.3 and 5.4 show plans of the foundry from the 1880 and 1967 *Insurance Plan of the City of St. John’s, Newfoundland*, demonstrating building additions that had been added as the foundry expanded.

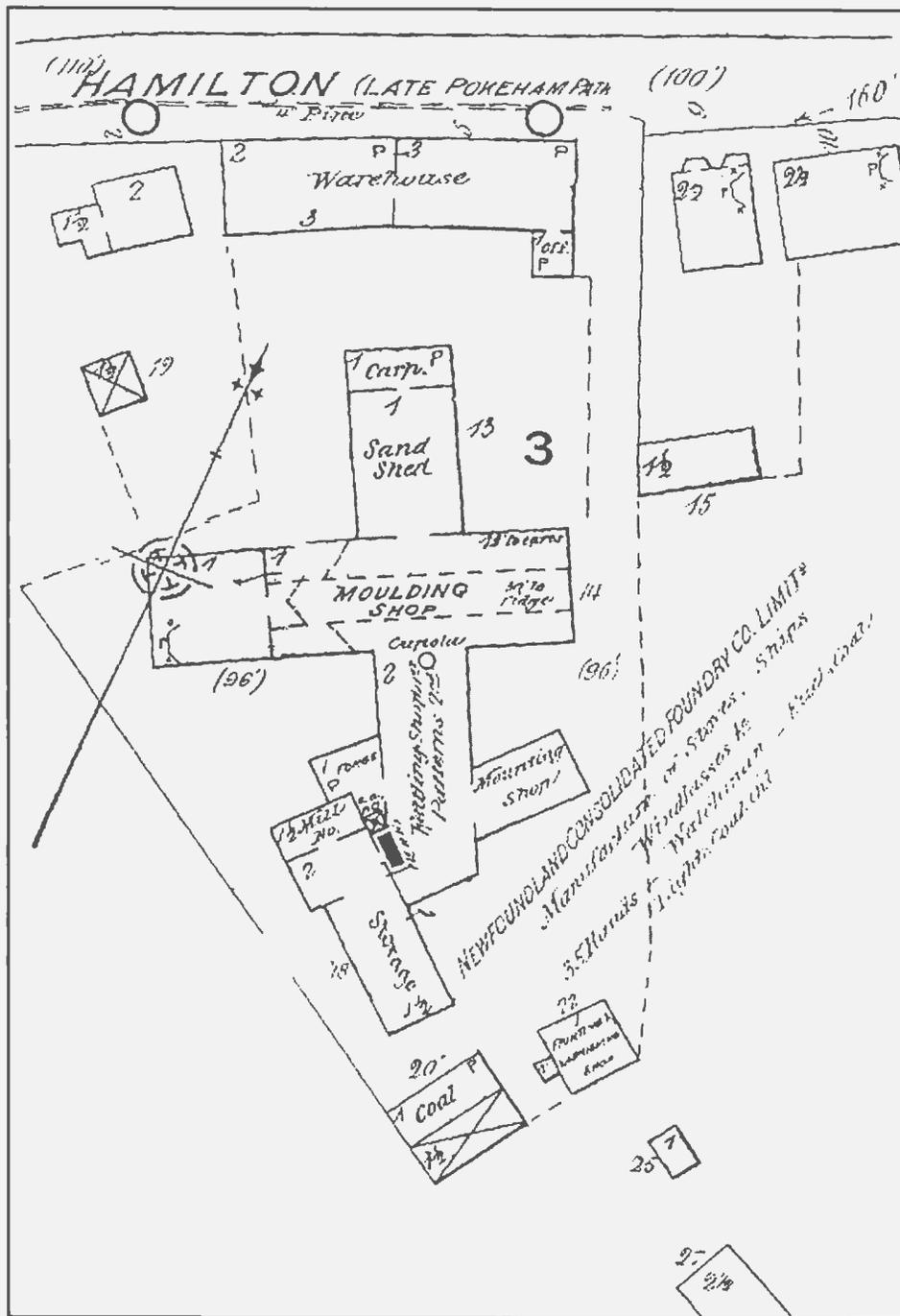
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<sup>32</sup> Joy, "Trades and Manufacturing," 2.

<sup>33</sup> *Ibid.*, 18-19.

<sup>34</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. “Foundries, Smithies, and Nail Manufacture,” pp. 346-7.

<sup>35</sup> Charles E. Goad, *Insurance Plan of the City of St. John’s, Newfoundland* (St. John’s: n.p., 1880), p. 3 block 3; Beaureau, *Insurance Plan of the City of St. John’s, Newfoundland* (St. John’s: n.p., 1967), p. 29 block 3.



**Figure 5.3: Plan of the United Nail and Foundry in 1880**

Source: Charles E. Goad, *Insurance Plan of the City of St. John's, Newfoundland*. (St. John's: n.p., 1880), p 3, block 3.



### **5.3.1 Records of Stoves Sold by the UNF**

The United Nail and Foundry was the only major foundry in Newfoundland that was producing cast iron stoves between 1870 and 1926, and thus almost all domestically manufactured stoves sold on the island during this time were manufactured by the UNF. Newfoundland foundries were not exporting stoves, and the records of stoves sold in Newfoundland are therefore also records of stoves used in Newfoundland. Imported stoves were also sold on the island, augmenting the domestically manufactured supply. The Provincial Archives of Newfoundland and Labrador (PANL) have an extensive collection of materials that were acquired from the UNF when the firm closed, and these were searched for information on the foundry's production and sale of cast iron stoves. The Store Books of the UNF listed each day the products that were sold on credit, the customers to whom they were sold, and the prices of the goods sold. These books exist for the years 1886 to 1912. The company experienced several fires throughout its history, and presumably ledgers from earlier years were destroyed in a fire.<sup>36</sup> Cash Books record the cash transactions of the foundry, but they do not exist for years prior to 1909. Cash transactions are occasionally recorded in the Store Books, so perhaps Cash Books were not used prior to this date.

Since the Store Books are the earliest source of information on UNF stove production, they were examined in detail. Six years of Store Books were chosen from those existing. These encompass the start of the data set, in 1886, and skip years of large disasters, such

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<sup>36</sup> "Finding Aid 175" for the "United Nail and Foundry Company Limited Fonds" MG 2, Provincial Archives of Newfoundland and Labrador.

as the fire of 1892, which may have lead to anomalous data for that year. The years studied were 1886, 1887, 1896, 1897, 1906, and 1907. One challenge in using these sources was that some of the Store Books may have potentially been missing. In 1886 and 1887, there are two sets of books for each year, and each book only records every second day. If, for example, one book records November first, third and fifth for 1886, the second book would record the sales for November second, fourth and sixth of the same year. Thus, information from both books was combined to provide complete coverage of the year. For the years 1896, 1897, 1906, and 1907, the books still list only every second day, but no complementary set of books with the alternate days exists. This is the case for all of the Store Books from 1888 to 1912. 1886 and 1887 are the only years for which two complementary sets of books exist. There are two potential explanations for this situation. One is that the other years also had two sets of books, and the second set has gone missing, possibly destroyed in one of the company's fires. The other option is that there was only ever one set of books, and the firm's record keeping practices changed in 1888.<sup>37</sup> This means that although the number of stoves sold by the UNF in 1886 and 1887 can be considered fairly complete data, the numbers for other years are more uncertain. However, the number of stoves sold, as recorded in the Store Books, does not vary widely between the 1886-7 books and the 1896-7 books. This leads

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<sup>37</sup> Consultation with the archival staff did not resolve this issue. The potentially missing books were never a part of PANL's collection, and thus would have gone missing prior to the archives' acquisition of the materials. The archivists also were unsure of the firm's record keeping strategies, and thus were not able to confirm or deny the possibility that the UNF may have only recorded sales every second day during the years in question. It should be noted that the sets of books for 1886 and 1887 list different products, so one book was not a "back-up copy" of the other. They are also in the same handwriting, so there is no possibility that two different clerks had different ledgers. This situation was also not resolved following consultation with Roger Angel, son of the last president of the UNF, John Bartlett Angel, and former employee of the UNF (Roger Angel, interview by author, 29 November 2004, St. John's, Newfoundland.)

one to suspect that the books from 1896 onwards contain a complete listing of the stoves sold by the firm, and it was simply the record keeping practices that changed.

Regardless, these books provide the only information currently available on the numbers and types of stoves sold in Newfoundland around the turn of the century, and are thus worthy of study. Delivery Books existed for the years 1914-17. The Delivery Books from 1916 and 1917 were studied to complement the store ledgers. They recorded the deliveries of purchases to the customers, and since most customers appear to have had their purchases delivered, the data gathered from these books is fairly equivalent to that from the Store Books.

Each of the Store and Delivery Books selected was examined for sales of stoves, and these sales were recorded. Only the sales of cooking or heating stoves were recorded; stoves for use on ships, cast iron fireplaces, and stoves with an obviously commercial function, such as cooper's stoves and laundry stoves, were not included in the data. The sales for each customer were recorded by stove model, and these were amalgamated to give monthly and yearly totals of stove purchases. This data is listed in yearly totals in Appendix Three. Table 5.1 provides a summary of this information, listing the total number of heating stoves and cooking stoves sold each year, as well as the number of dwellings on the island per stove sold. Price lists and lists of the best selling stoves, from the UNF collection in PANL, were consulted to determine which models of stoves fit into

**Table 5.1**  
**Summary of Stoves Sold by the UNF 1886-1917**

<b>Year</b>	<b>Total</b>	<b>Heating</b>	<b>Cooking</b>	<b>Other</b>	<b>Dwellings per</b>
	<b>stoves sold</b>	<b>stoves sold</b>	<b>stoves sold</b>	<b>stoves sold</b>	<b>stove sold</b>
1886	1,717	435	929	353	18.1
1887	1,880	548	934	398	16.5
1896	2,290	703	1,098	489	14.7
1897	1,820	573	815	432	18.5
1906	4,109	1,528	2,083	498	9.5
1907	4,102	1,359	2,038	705	9.5
1916	2,954	1,038	1,537	379	15.1
1917	2,751	899	1,480	372	16.3

which category: heating or cooking.<sup>38</sup> Those stoves for which it was not possible to determine whether they were heating or cooking stoves are listed as other/unknown. Because the specific function and use of these “other” stoves is not known, some of them may not have been used for domestic purposes. It should be noted that while many of the stoves sold by the UNF were also manufactured by the foundry, the company also imported and sold stoves that were manufactured elsewhere.<sup>39</sup> Thus, some of the stoves sold by the UNF and listed in the Store Books and Delivery Books were most likely not produced locally, but were instead imported stoves. However, there is not enough information to distinguish between the two.

Heating stoves were used primarily for heating purposes, and food was rarely cooked on these models of stoves. They did not contain an oven. Some had one or two potholes that could have been used for small amounts of cooking, such as boiling a kettle, but they were not intended to meet a family’s entire cooking needs. Many had no cooking facilities at all. They were usually used to supplement heat provided by a cook stove, and in most Newfoundland homes, they were used only on special occasions.<sup>40</sup> Popular heating stoves sold by the UNF were the *Franklin*, *Herald*, *Scout*, and *Lion* models of stoves.<sup>41</sup> An *Our Franklin* and a *Twilight Herald* are illustrated in Figures 5.5 and 5.6.

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<sup>38</sup> "Revised Price List 1930-32" MG 2.341 in "United Nail and Foundry Company Limited," Provincial Archives of Newfoundland and Labrador.

<sup>39</sup> Roger Angel, interview by author, 29 November 2004, St. John's, Newfoundland.

<sup>40</sup> Pocius, *A Place to Belong*, 250; Murray, *More Than Fifty Percent*, 108.

<sup>41</sup> "Revised Price List 1930-32" MG 2.341 in "United Nail and Foundry Company Limited," Provincial Archives of Newfoundland and Labrador.



**Figure 5.5: An *Our Franklin* model heating stove sold by the United Nail and Foundry c. 1940s.**

Source: Memorial University Library website  
<<http://www.library.mun.ca/qeii/cns/photos/geog2700.php>> 14 April 2005



**Figure 5.6: A *Twilight Herald* model heating stove sold by the United Nail and Foundry c. 1940s.**

Source: Memorial University Library website  
<<http://www.library.mun.ca/qeii/cns/photos/geog2700.php>> 14 April 2005

Cook stoves were designed for the cooking of food, and included an oven as well as pot holes that allowed cooking pots more direct access to the heat from the fire. They also often had such features as warming shelves and water reservoirs. Figures 5.7 to 5.9 depict three of the common models of cook stoves manufactured by the UNF at the end of the nineteenth and beginning of the twentieth century. Though these stoves were designed for cooking upon, they also provided heat, since the fire used for warming pots and pans also emitted heat into the rest of the house. In many nineteenth century outport Newfoundland homes, cook stoves were the main source of heat for the home.<sup>42</sup> The situation was somewhat different in downtown St. John's where a cast iron stove in the kitchen was used for cooking, and fireplaces, sometimes equipped with coal grates, were used for heating in other rooms of the house.

Patterns are difficult to find in the UNF stove sales because the numbers are quite variable, and also because the figures for 1896 through 1907 may be incomplete records of the stoves sold by the company. The total number of stoves in the sample sold each year varies from 1,717 in 1886 to 4,109 in 1906. Totals are fairly similar for the years 1886, 1887, 1896, and 1897. They range from 1,717 stoves sold in 1886 to 2,290 stoves sold in 1896. Both 1887 and 1897 have similar sales of 1,880 and 1,820 stoves respectively, leading one to wonder if perhaps the 1896 to 1907 figures are complete after all. The totals roughly double for the years 1906 and 1907 however, when 4,109 and 4,102 stoves were sold. This is an enormous increase in the number of stoves sold during

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<sup>42</sup> Mellin, *Tilting*, 92-4; Pocius, *A Place to Belong*, 232; Murray, *More Than Fifty Percent*, 104.



**Figure 5.7: An *Ideal Cook* model cook stove with no nickel trim c. 1940s**

Source: Memorial University Library website  
<<http://www.library.mun.ca/qeii/cns/photos/geog2700.php>> 14 April 2005



**Figure 5.8:** A *King Edward* model cook stove sold by the United Nail and Foundry, with much ornamentation and nickel trim c. 1940s.

Source: Memorial University Library website  
<<http://www.mun.ca/qeii/cns/photos.geog2700.php>> 14 April 2005



**Figure 5.9: A *Waterloo* model cook stove manufactured by the United Nail and Foundry c. 1940s**

Source: <<http://www.antiquestoves.com/cookstov.htm>> 14 April 2005

these years. The numbers drop again in 1916 and 1917 to 2,954 and 2,751 respectively. These sales from the second decade of the twentieth century are still higher than those of the late nineteenth century, but are much lower than those of ten years previous. The UNF manufactured munitions during the First World War,<sup>43</sup> and the decrease in stove sales may have been because the foundry concentrated on manufacturing war materials at this time.

The percentage of each type of stove sold also varies over time, but is much more consistent than the totals themselves. In all years, cook stoves comprised the majority of stoves sold, ranging from a low of 44.8 percent in 1897 to 54.1 percent in 1886. The percentage of the total that was heating stoves varied from 25.3 percent in 1886 to 37.2 percent in 1906. In most years the percentage of heating stoves was slightly above 30 percent. Unknown types of stoves ranged from 12.1 percent to 23.7 percent. Since many folk accounts emphasize that the cook stove was the main method of heating the home, it is interesting to notice that cook stoves only account for roughly 50 percent of the totals. Newfoundlanders were apparently buying significant numbers of heating stoves to supplement the heat provided by their cook stove. Fireplaces were also used to provide additional heat, but these figures do not reflect the use of fireplaces in Newfoundland.

The proportion of stoves sold to the number of inhabited dwellings on the island is listed in Table 5.1. Since censuses do not exist for the years for which UNF stove data was

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<sup>43</sup> *Encyclopedia of Newfoundland and Labrador Vol. 1* s.v. "Frederick William Angel," p 47; *Industry* 67, 186.

gathered, the number of inhabited dwellings was taken from the census prior to the date from which the stove data originates. For example, data from the 1884 census was compared to UNF data from 1886 and 1887 to arrive at the number of inhabited dwellings on the island per stove sold. The numbers of dwellings per stove sold are quite striking. These numbers range from 18.5 dwellings per stove in 1897 to 9.5 dwellings per stove in 1906 and 1907. This is particularly interesting in light of the fact that by this time, stoves were the common method of cooking and heating on the island, and most households already had a stove.<sup>44</sup> Thus, those being purchased during the time period covered by the UNF data were either replacements for existing stoves, were stoves for use in newly built homes, or were additional stoves in an existing home, perhaps warming a room that previously had not had a stove in it. At 9.5 dwellings per stove, this would mean that on average, each family was buying a new stove approximately every ten years. Not all years had this high proportion, and, as well, some of these stoves would have been used in the newly built dwellings that were increasing the number of homes on the island. However, it does appear that, on average, a family would buy a new stove approximately every fifteen years. This roughly corresponds with the experience of a resident of a farm on the edge of St. John's, whose family's stoves each lasted for approximately twenty years.<sup>45</sup> Another point to note is that it is not possible to discern from these figures in which areas of the island these stoves were used. As discussed later, many of the stoves sold by the UNF were sold to stove merchants in St. John's who

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<sup>44</sup> Mannion, *Irish Settlements in Eastern Canada*, 163; O'Dea, "Cooking and Heating Technology," 15; Mills, "Folk Architecture in Trinity Bay," 83.

<sup>45</sup> Aly O'Brien, interview by author, 28 May 2003, St. John's, Newfoundland.

would then take care of distributing these stoves to various customers around the island. It is therefore possible that residents in one area were buying a new stove every five years, while those of another region of the island bought a new stove on average only every twenty years.

These numbers indicate an average turnover rate of a decade and a half for cast iron stoves. Stoves did wear out and needed replacing. Mellin, in interviewing residents of the community of Tilting, came across one participant who mentioned that his family had gone through a dozen Comfort models of stoves in their kitchen.<sup>46</sup> Minhinnick discusses how stoves in Ontario were first used in the kitchen of the home, then retired to the summer kitchen, and eventually were used in the sugar shanty.<sup>47</sup> Stoves did crack with use and the heat from the fire, and although some home remedies for the cracks existed, such as attempting to stop them with wood ash, salt and water, it was necessary to replace cast iron stoves from time to time.<sup>48</sup> Design flaws also required that stoves be replaced. For example, some stoves with elevated ovens had a tendency to tip over, creating a large cleaning job, if not a house fire. A side view of one of the UNF's Waterloo cook stoves, shown in Figure 5.10, illustrates how the elevated oven was not situated over the body of the stove, but was instead placed behind the main portion of the stove. It is not surprising that such stoves occasionally tipped over when the oven was heavily loaded, making the

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<sup>46</sup> Mellin, *Tilting*, 120.

<sup>47</sup> Jeanne Minhinnick, *At Home in Upper Canada* (Toronto: Clarke, Irwin, & Co., 1983), 94.

<sup>48</sup> *Ibid.*; Brewer, *From Fireplace to Cookstove*, 88-9.



**Figure 5.10: Side view of a Waterloo cook stove manufactured by the United Nail and Foundry c. 1940s**

Source: <<http://www.antiquestoves.com/cookstov.htm>> 14 April 2005

stoves top heavy. Such problems would have provided an incentive to purchase a new stove, assuming finances allowed it.

The stoves manufactured by the UNF in the nineteenth and early twentieth centuries were made of cast iron. Pig iron, bars of smelted iron produced in a forge, was imported and resmelted, at which point it was poured into moulds to form stove plates. These plates were then assembled into complete stoves. The number of plates required to make a complete stove varied widely per model. For example, an *Our Franklin* model heating stove was composed of only 29 different pieces, while the *Nafco Special* model cook stove consisted of 130 different parts.<sup>49</sup> Use and time resulted in rusting of the cast iron stove plates, so stove polish was used to keep the stoves rust free and aesthetically pleasing.<sup>50</sup> Since stove polish was highly flammable, a stove could not have a fire in it while being polished, and this made the task difficult and inconvenient during the winter months. In Ontario, if not elsewhere, this problem was alleviated by brushing off the stove, and rubbing it with waxed paper as a substitute for blacking a warm stove.<sup>51</sup> Ornate relief work in stove moulds provided embellishment of the cast iron on most stoves produced by the UNF, and nickel trim was also used for decoration. The low cost, practical stoves had no, or very little, nickel trim. The *Ideal Cook* stove depicted in Figure 5.7 exemplifies a stove without any nickel trim on it, and its only ornamentation comes from designs in the cast iron. In contrast, the *King Edward* model illustrated in

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<sup>49</sup> Roger Angel, interview by author, 29 November 2004, St. John's, Newfoundland.

<sup>50</sup> Brewer, *From Fireplace to Cookstove*, 87.

<sup>51</sup> Minhinnick, *At Home in Upper Canada*, 94.

Figure 5.8 has plenty of nickel trim, and was one of the more expensive, elaborate cooking stoves produced by the UNF. In the fall of 1907, the UNF was selling *King Edward* stoves to its customers for \$22.00 each, while the *Ideal Cook* stoves ranged from \$12.60 to \$15.50 depending on the size.<sup>52</sup> Nickel trim could also be polished to maintain its appearance, adding another task to the list of household chores.<sup>53</sup>

While cast iron was the most common material from which to make stoves, other materials were also used. Early Newfoundland newspapers advertise a stove with a marble front and a copper stove, along with the typical cast iron models.<sup>54</sup> Towards the middle of the twentieth century, steel became a common metal for making heating stoves. A UNF advertising pamphlet of November 1941 promotes six different heaters manufactured by the company, all of which are described as “steel body, brick lined top to bottom.”<sup>55</sup> One such heating stove, an *Improved Eclipse* model, is illustrated in Figure 5.11. Porcelain enamel became a common material for cook stoves in the middle of the twentieth century, and large enamelled panels were often added to the basic cast iron stove. These enamels could be tinted various colours, and the model illustrated in Figure 5.12 came with a choice of white or cream enamel.<sup>56</sup>

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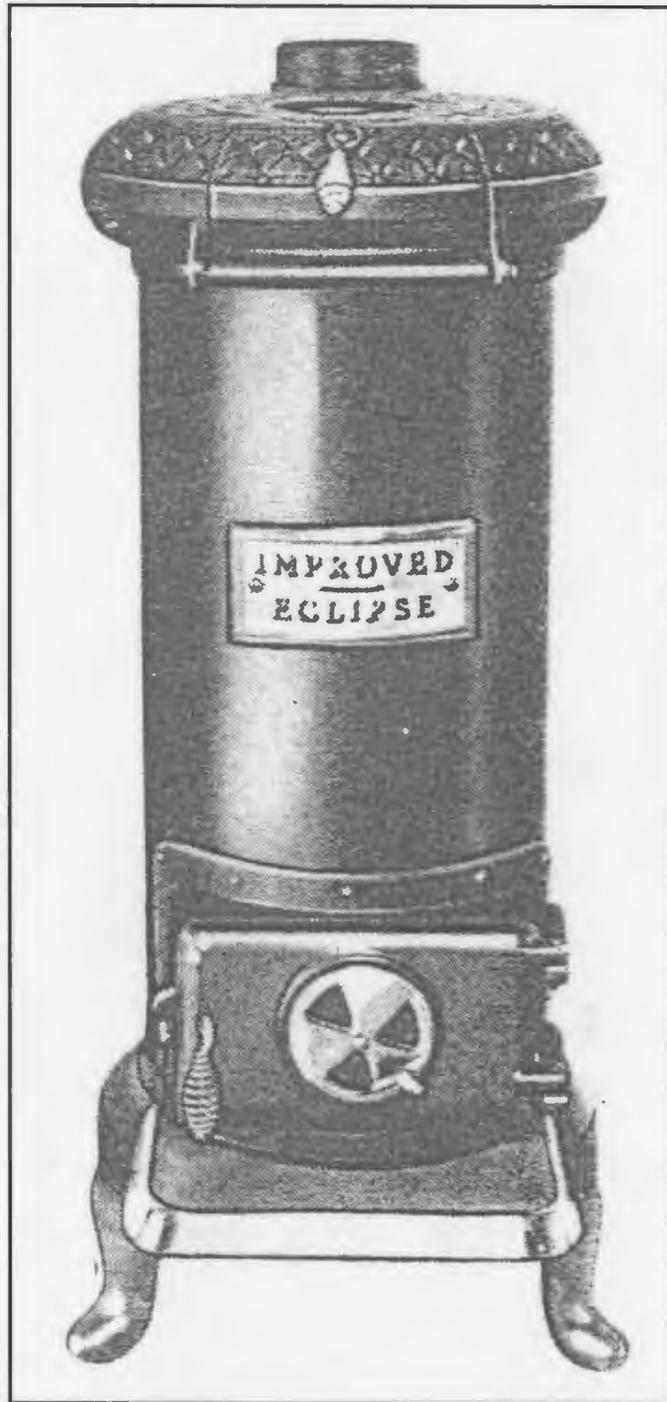
<sup>52</sup> "Store Book 1907-08" MG 2.50 in "United Nail and Foundry Company Limited," Provincial Archives of Newfoundland and Labrador.

<sup>53</sup> Minihinnick, *At Home in Upper Canada*, 94.

<sup>54</sup> *Newfoundland Mercantile Journal* (St. John's) 14 September 1816; *Public Ledger* (St. John's) 15 July 1828.

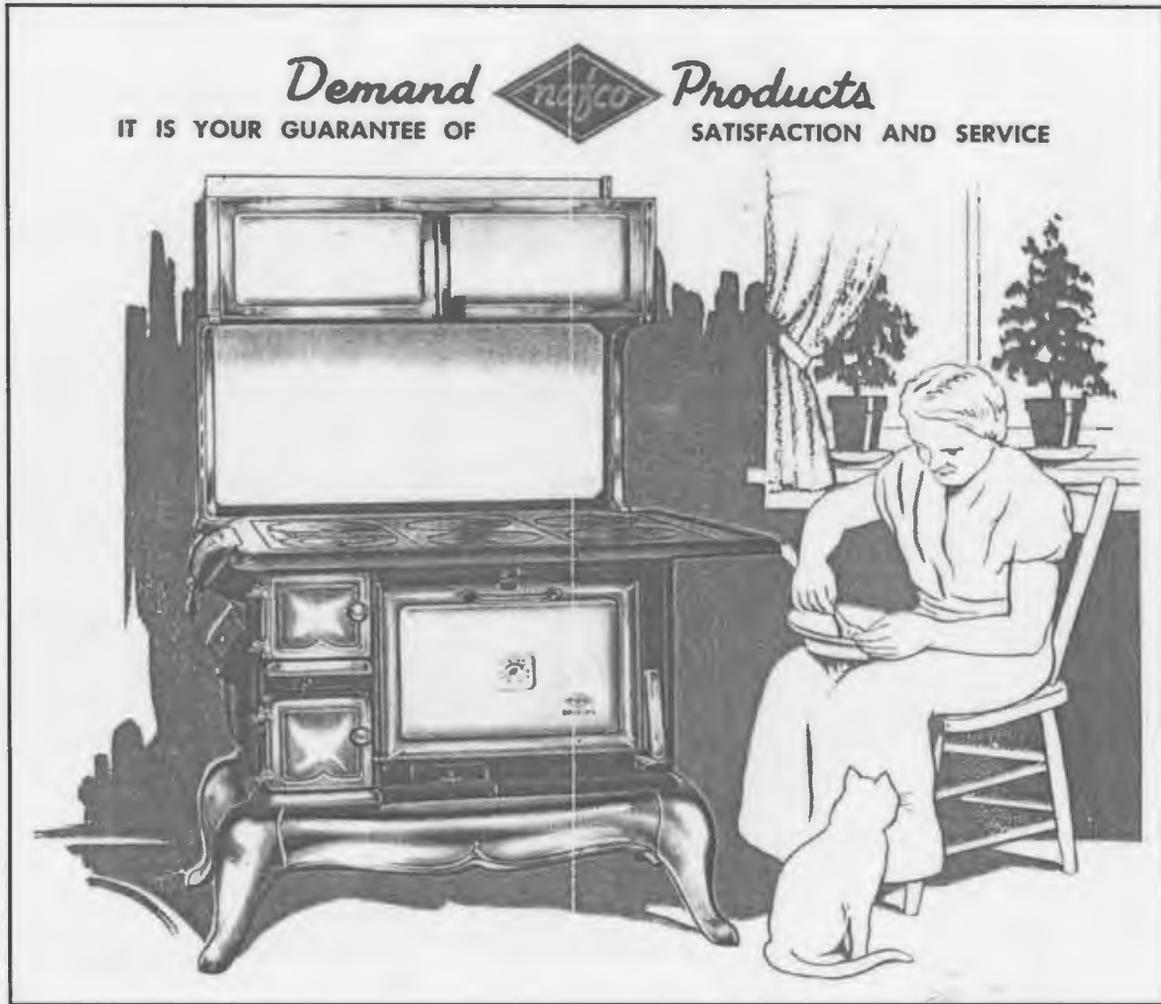
<sup>55</sup> United Nail & Foundry Co. Limited. Pamphlet 3 (St. John's, n.p., 1941).

<sup>56</sup> United Nail & Foundry Co. Limited. Pamphlet 12-46. (St. John's, n.p., c. 1940).



**Figure 5.11:** An *Improved Eclipse* model heating stove with a steel body and brick lining, 1941.

Source: United Nail and Foundry Co. Ltd. Advertising pamphlet 3. (St. John's: n.p., November 1941.)



**Figure 5.12: A *Nafco Special* model cook stove, produced by the United Nail and Foundry c. 1940**

Source: United Nail and Foundry Co. Ltd advertising pamphlet 12-46. (St. John's: n.p., c. 1940)

Most of the cast iron stoves manufactured on the island were produced in St. John's, yet the majority of the Newfoundland population lived in communities far from the capital city. Thus, the stoves manufactured in St. John's had to be transported to communities around the island. To look at this distribution network for domestically manufactured stoves, we begin with the customers who bought the stoves directly from the UNF. The principal customers were merchants in various locations around the island. The locations of these merchants can be discovered through the use of city and island directories from the nineteenth and twentieth centuries. These directories were consulted in combination with the list of customers gathered from the UNF Store Books and Delivery Books. Some names listed as customers in the UNF books could not be found in the directories, but most merchants were listed. Often these merchants were listed in the directories as stove and range salesmen, but some were tinsmiths, and others general merchants. The merchants, their locations, and their yearly totals of stove sales are listed in Tables 5.2 and 5.3.

Because a substantially different set of customers is recorded in the UNF records of 1886 and 1887 than in the records of later years, the data from these years are listed in a separate chart. Nonetheless, similar patterns in the distribution of these customers around the island can be noted. The customers of the foundry were not individuals, but were instead merchants. The majority of these merchants were located in the St. John's area. In 1886 and 1887, thirteen of the firm's twenty customers were situated in St. John's. The directories did not provide information on the location of four of the customers. The only customers who were located outside of St. John's were Kennedy and Strathie in

**Table 5.2**

**UNF Customers with their Locations and Numbers of Stoves Bought, 1886 and 1887. Stoves listed in this table are a combination of heating, cooking, and unknown models of stoves. Thus, the total listed in the 1886 column of this table is equal to the total number of stoves sold by the UNF in 1886 listed in Table 5.1.**

<b>Merchant</b>	<b>Location/Area</b>	<b>Stoves</b>	<b>Stoves</b>
	<b>Serviced</b>	<b>bought</b>	<b>bought</b>
		<b>in 1886</b>	<b>in 1887</b>
Allen, H	St. John's	43	1
Andrews, Robert	Burgeo/La Poile	3	0
Avalon Foundry Co	St. John's	3	0
Callahan, R	St. John's	263	218
Collins, Wm J	unknown	15	22
Cooper, Joseph	unknown	16	0
Gear and Co	St. John's	293	341
Gushue, F	St. John's	129	106
Goudie & Diamond	St. John's	290	395
Hunt, Wm	unknown	17	46
Kennedy, CL	Harbour Grace	74	100
Malcolm, Wm	St. John's	27	18
Monroe, M	St. John's	16	2
McCoubrey & Clouston	St. John's	193	209
Norris, JW	St. John's	18	13
Peace & Co	St. John's	164	267
Pennock, JW	St. John's	62	55
Pippy, Wm G	St. John's	64	87
Sarissere, Mons.	unknown	7	0
Strathie	Harbour Grace	20	0
<b>Total</b>		<b>1717</b>	<b>1880</b>

**Table 5.3**

**UNF Customers with their Locations and Numbers of Stoves Bought, 1896-1917.**  
**Stoves listed in this table are a combination of heating, cooking, and unknown models of stoves. Thus, the total listed in the 1896 column of this table is equal to the total number of stoves sold by the UNF in 1896 listed in Table 5.1.**

Merchant	Location/Area Served	1896	1897	1906	1907	1916	1917
Brien	Brigus	27	17	67	40	22	16
Bulger	St. John's	0	0	1	0	0	0
Callahan, R*	St. John's	264	179	252	348	355	365
Cash		6	38	9	0	6	5
Clouston, John	St. John's	0	7	96	110	109	56
Clouston, WJ*	St. John's	376	296	1001	1078	712	723
Diamond, L*	St. John's	491	343	450	514	356	400
Facey, S	Twillingate	11	20	81	45	53	70
Gear and Co*	St. John's	348	251	838	747	566	343
Gordon, George	Harbour Grace	3	0	119	122	19	5
Goudie*	St. John's	141	132	0	0	0	0
Gushue, F*	St. John's	93	56	32	22	9	11
Jackman, D	Bell Island/St. John's	0	83	43	70	59	44
Janes, A	unknown	0	0	0	0	5	1
Kennedy, CL*	Harbour Grace	33	17	68	65	9	8
Lawrence, J	Bonavista	5	11	73	84	22	16
Malcolm, Wm*	St. John's	16	17	5	6	0	0
Maher, R	St. John's	0	0	17	11	37	62
Mahoney & Guinan	Burin	0	0	0	9	51	46
McCoubrey, G*	St. John's	139	111	136	52	0	0
McCoulney, A	St. John's	0	0	17	6	10	2
Miles, L	Walkham's Bridge	0	0	5	6	0	0
Moakler, T	unknown	0	0	0	0	2	0
Norris, JW*	St. John's	6	3	10	2	0	0
Pennock, JW*	St. John's	165	85	246	228	145	177
Pippy, Wm G*	St. John's	162	151	308	265	181	191
Phillips, J	St. John's	2	0	188	174	86	84
Prowse, W	St. John's	2	3	6	10	0	0
Ruby, K	St. John's	0	0	0	0	46	48
Sheehan	St. John's	0	0	1	0	16	13
Stafford, W	St. John's	0	0	0	0	7	27
Woods, AJ	B. Roberts/Hr Grace/Carbonear	0	0	40	88	71	38
<b>Total</b>		<b>2290</b>	<b>1820</b>	<b>4109</b>	<b>4102</b>	<b>2954</b>	<b>2751</b>

\* Also present in Table 5.2

Harbour Grace, and Andrews in the Burgeo/La Poile area. Andrews and Strathie do not seem to have been regular customers of the UNF, since they purchased minimal numbers of stoves, and had disappeared from the records by 1896. Kennedy continued to purchase stoves from the foundry throughout the entire time studied, and is listed as a “stoves and tinware” merchant in the 1908-9 Directory.<sup>57</sup> Of the thirty one customers during the 1896-1917 time period, two could not be found in the directories, but they sold only two and six stoves respectively, and therefore accounted for an insignificant proportion of those sold by the UNF. Twenty one of the customers were from St. John’s, but there were more customers in other locations around the island than there had been in 1886-7. Four of the customers were from the Conception Bay area, one was from Bonavista, one from Walkham’s Bridge, in the Bonavista North District, one from Twillingate, and one from Burin. Thus, in general, most of the customers who bought stoves directly from the United Nail and Foundry were located in the St. John’s area, although the number of those who were located elsewhere on the island was increasing over time.

The UNF customers in St. John’s often dealt specifically in stoves, stove implements, and cooking utensils. Thus, most general merchants in small communities around the island, like those whose ledgers were examined for sales of stoves and hearth implements in chapter four, seem to have purchased stoves for their outport customers from these St.

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<sup>57</sup> *McAlpine's St. John's directory, 1908-1909: containing a directory of citizens and business and street directories : also directories of citizens of Harbor Grace and Carbonear and classified business firms of Newfoundland* (Halifax: McAlpine, 1908).

John's stove merchants, rather than directly from the UNF. From the numbers listed above, the UNF does not appear to have required orders of a minimum number from its customers, since some customers bought only a few stoves each year. However, the UNF was oriented towards production and wholesale, and the job of retail sales was left to the stove merchants. Thus, these merchants were the ones who would have been able and willing to explain the various options and benefits of the different stove models to potential patrons, and were the ones who were advertising their wares in the island's newspapers, attracting the attention of outport merchants. Figures 5.13 and 5.14 show examples of advertisements of two UNF customers who dealt primarily in stoves and tinware.

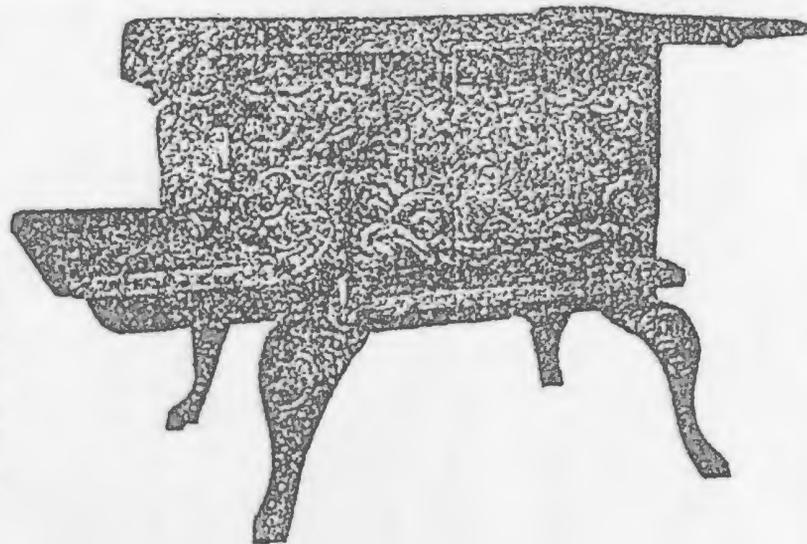
Once ordered from either the UNF or the stove merchants, the cast iron stoves had to be transported to the end user, and coastal boats and railways were the main methods of doing this. Occasionally, notes were made in the UNF Store Books regarding freight rates and the method of shipment. Throughout the years examined, there were thirteen references to stoves being shipped by coastal boat, and at times more than one stove was sent on each shipment, such as the fourteen stoves shipped to Lawrence on the Schooner Nellie Burns in December of 1907.<sup>58</sup> In contrast, only one stove is recorded as being shipped on a train.<sup>59</sup> Coastal boats seem to have been the primary method for shipping stoves, although the data are too sporadic to conclusively determine this. All of the

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<sup>58</sup> "Store Book, 1907-08".MG 2.50 in "United Nail and Foundry Company Limited," Provincial Archives of Newfoundland and Labrador

<sup>59</sup> "Store Book, 1887-88" MG 2.34 in "United Nail and Foundry Company Limited," Provincial Archives of Newfoundland and Labrador.

# THE Bright ACORN STOVE!



We believe we are offering the best in the market, both in workmans hip, value and finish Nickered parts. Good baker.

Sold only in St. John's by

## Wm. J. Clouston,

184 Water St., corner Market House Hill

We can supply you with any part in one hours notice at 7c. per lb.

Price of Stove, sent to Trinity or Bonavisa, freight paid by WM. J. CLOUSTON..... **\$19.00.**

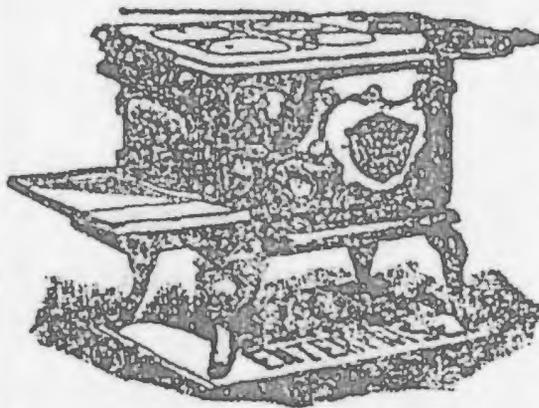
Figure 5.13: 1909 newspaper advertisement for Wm. J. Clouston, a stove merchant in St. John's, who purchased stoves from the United Nail and Foundry

Source: *Trinity Enterprise* 31 July 1909

# No. 3 Enterprise Cook Stove

COAL or WOOD.

Price, \$91.00, freight  
paid by Co-vental star.



A FUEL SAVER and  
GOOD BAKER.

Fitted with Tea Pot Stand,  
Towel Rack, Ash Pan,  
Large Oven, heavy Grates  
and Linings.

☐ Beautiful design, Nickel  
Trimings.

*All Orders receive prompt  
and careful attention*

## LEVI DIAMOND,

270 Water Street, St. John's

P. O. BOX 174.

Figure 5.14: 1909 advertisement for Levi Diamond, a St. John's stove merchant, who bought stoves from the United Nail and Foundry

Source: *Trinity Enterprise* 29 March 1909

merchants who purchased these stoves for which shipping is mentioned were established in locations outside of St. John's. Hunt's location is unknown, but the others were Kennedy (Harbour Grace), Brien (Brigus), Lawrence (Bonavista), Facey (Twillingate), and Miles (Walkham's Bridge). Why these specific shipments of stoves were noted in the Store Books is unclear, since these merchants purchased many other stoves from the UNF, and these other stoves also required transportation to the merchants' outport locations. Since all of the merchants who were listed with the above mentioned shipments were not from St. John's, it appears that stoves purchased through intermediary stove merchants were not shipped directly from the foundry to the outports. They were first delivered to the shop of the stove merchant in St. John's, and from there bought and shipped to the outport.<sup>60</sup> Coastal boats seem to have been the main method of transporting stoves to outport communities, and freight rates are listed in the *Coastal Mail Service Act* of 1911. In this act, the freight on "Stoves and fittings" is \$1.00, on "Stoves, without fittings" and "Small Stoves and fittings" is \$0.50, and on "Small Stoves" is \$0.30.<sup>61</sup> Presumably the term "fittings" includes stove pipes, and possibly pots and pans, which were sometimes purchased in conjunction with a stove. The archival records relating to the Newfoundland railway that are now property of the Railway Coastal Museum in St. John's are still being catalogued, and therefore could not be examined for reference to shipment of stoves.<sup>62</sup>

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<sup>60</sup> This hypothesis was confirmed by communication with Roger Angel, a former employee of the UNF, who mentioned that stoves from the UNF were first shipped to stove dealers and then shipped to individual customers by the stove dealers. (Roger Angel, interview by author, 29 November 2004, St. John's, Newfoundland.)

<sup>61</sup> *Coastal Mail Service Act, 1911, Statutes of Newfoundland 1911*, c 9, p 65.

<sup>62</sup> Pamela Coristine, "Re: Railway shipping records" [e-mail] (19 January 2005).

### 5.3.2 The Origins of Stove Manufacturing Knowledge in Newfoundland

The technology of cast iron stoves did not originate in Newfoundland, and thus knowledge of the processes for producing them arrived on the island from other locations, where cast iron stoves were already being manufactured. There is little information on the origins of this technology in Newfoundland, but the United States and Nova Scotia appear to have been the main sources. Since the Angel family came to St. John's from Halifax specifically to operate Bennett's foundry, they must have had knowledge of the founding process and stove production prior to coming to the island. Although John Angel Sr. was originally from England,<sup>63</sup> he spent at least a decade in Halifax before arriving in Newfoundland, and his son James was born there in 1838.<sup>64</sup> Whether he acquired his knowledge of founding in Nova Scotia or England is unclear. The Trask Foundry was transferred directly from Yarmouth, NS to Newfoundland, and this was another avenue through which Nova Scotian founding technology apparently reached the island. As an interesting note, founding practices may have also flowed the other way, from Newfoundland to Nova Scotia, since John Bartlett Angel took over the Thompson and Sutherland Company Foundry in North Sydney in 1949.<sup>65</sup>

The only direct evidence of a transfer of technology from the United States to Newfoundland is the fact that John Angel Jr. joined the family company in St. John's in

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<sup>63</sup> *Industry '67*, 186.

<sup>64</sup> *Dictionary of Newfoundland and Labrador Biography* s.v. "Angel, James," p. 5; de Young.

<sup>65</sup> de Young, "Time Line for Angel Foundry," 2.

1867, after training as a pattern maker in New York.<sup>66</sup> However, since the United States was the main North American innovator in terms of founding technology, it is very likely that ideas and methods from America came to Newfoundland, either directly or through Nova Scotia. Another potential source of ideas for the local foundries was the imported stoves that were sold on the island, and thus the ideas from Europe and Quebec, along with those from Nova Scotia and the United States, may have influenced Newfoundland founding procedures.

#### **5.4 Early Twentieth Century Use of Fuel Wood Resources**

Because stoves were manufactured in Newfoundland throughout the second half of the nineteenth century, the information on fuel wood use in the previous chapter is also relevant to the time during which stoves were produced domestically. However, one important source of information on the use of Newfoundland forests as fuel does not appear to have been discussed by other scholars of the subject. This is found in the Censuses of Newfoundland and Labrador for the years 1911 and 1921.<sup>67</sup> During these years, Newfoundland census takers recorded the amount of firewood gathered in the communities they enumerated, and this data on firewood can be used to look at patterns of forest use for fuel wood.

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<sup>66</sup> *Encyclopedia of Newfoundland and Labrador Vol. 2* s.v. "Foundries, Smithies, and Nail Manufacture," p. 349; Joy, "Trades and Manufacturing," 157.

<sup>67</sup> *Census of Newfoundland and Labrador, 1911* (St. John's: J.W. Withers, 1914); *Census of Newfoundland and Labrador, 1921* (St. John's: [Colonial Secretary's Office], 1923)

#### **5.4.1 Firewood Data from the Censuses**

The island of Newfoundland was divided into eighteen political ridings, which doubled as enumeration districts for census purposes. For each district, the amount of firewood gathered in 1910 and 1920 is recorded by settlement. Neither the censuses before nor after these years provide data on firewood use. As well as demographic information on the inhabitants, the censuses also contain data on the residents' economic production, such as agricultural products, products of the fishery, and forest products. The category of 'firewood cut' falls into this final category, and lists the number of sticks of firewood gathered by each of the settlements in the year preceding each census (1910 and 1920). It is somewhat improbable that most people would have kept a record of how many sticks of firewood they harvested each year, but generations of experience gathering wood would have allowed them to make a reasonable estimate.

For the purposes of this study, it is more useful to look at the quantity of firewood collected by the average household, rather than the aggregate amounts for each community or district. Community size varied widely, but the amount of wood recorded, and presumably consumed, per dwelling gives a common unit of measurement that can be compared over the island. The dwelling was the logical unit to use since it was the unit that had to be heated, and stove sales have also been examined in relation to the dwellings of the island.

The number of sticks of firewood gathered in a district was divided by the number of inhabited dwellings in the district, to produce the mean number of sticks of firewood

gathered per dwelling within the district. Because not all settlements had information on firewood gathering recorded for them, the numbers of occupied dwellings in these settlements were subtracted from the number of occupied dwellings in the entire district. This resulted in numbers for each district of the amount of firewood cut in that district and the number of dwellings in only the settlements that had contributed to the district's firewood data. Both censuses had the same number of districts, and the same district boundaries, so that data derived for them is comparable. From this, the average number of sticks of firewood gathered per dwelling in each district was derived, and the results are displayed in Tables 5.4 and 5.5.

The districts of St. John's East and St. John's West each consisted of approximately half of the city of St. John's, as well as the surrounding communities, to the east and west of the city respectively. These two districts were amalgamated in this study, because practices of procuring firewood would have been citywide, and not limited to only the eastern or western portion of the city. The data from this amalgamated region is displayed in Table 5.6. The censuses listed firewood data in the St. John's districts for approximately twenty percent of the dwellings in the area, and the region illustrates a pattern very different from that of much of the rest of Newfoundland. Thus, it will be discussed separately here.

It is important to keep in mind that the unit of measurement, a stick, may not have been a constant unit. As mentioned earlier, a stick is a tree with the branches removed. Each

**Table 5.4**  
**Firewood Cut in 1910**

District	Firewood cut	Dwellings inhabited	Dwellings with wood data	% dwellings with wood data	Sticks per dwelling	Cords per dwelling
Carbonear	83,300	1,063	404	38	206	4.4
Port-de-Grave	292,610	1,548	1,225	79	239	5.1
Harbor Grace	410,860	2,449	1,620	66	254	5.4
Bay-de-Verde	651,901	1,980	1,863	94	350	7.4
Bonavista Bay	2,197,230	4,275	4,188	98	525	11.2
Harbor Main	990,750	1,879	1,860	99	533	11.3
Burin	931,625	2,243	1,656	74	563	12.0
Fogo	915,500	1,655	1,593	96	575	12.2
Twillingate	1,913,350	4,138	3,053	74	627	13.3
Burgeo & LaPoile	275,000	1,473	421	29	653	13.9
Fortune Bay	956,427	1,847	1,257	68	761	16.2
St George	1,069,427	1,993	1,266	64	845	18.0
Ferryland	1,089,620	1,194	1,059	89	1,029	21.9
Placentia & St Mary's	2,705,250	3,089	2,567	83	1,054	22.4
Trinity Bay	4,429,027	4,130	3,272	79	1,354	28.8
St Barbe	2,481,846	1,802	1,716	95	1,446	30.8
<b>Total</b>	<b>21,393,723</b>	<b>36,758</b>	<b>29,020</b>			
<b>Mean</b>				<b>77</b>	<b>688</b>	<b>14.6</b>

Source: Census of Newfoundland and Labrador, 1911 (St. John's: J.W. Withers, 1914).

**Table 5.5**  
**Firewood cut in 1920**

District	Firewood cut	Dwellings inhabited	Dwellings with wood data	% of dwellings with wood data	Sticks per dwelling	Cords per dwelling
Harbor Grace	192,280	2,323	1,577	68	122	2.6
Burgeo & LaPoile	126,615	1,622	766	47	165	3.5
Port-de-Grave	233,165	1,440	1,268	88	184	3.9
Bay-de-Verde	420,990	2,072	1,550	75	272	5.8
Burin	671,511	2,499	2,234	89	301	6.4
St George	658,437	2,305	2,111	92	312	6.6
Twillingate	1,428,868	4,864	4,060	83	352	7.5
Carbonear	341,910	960	950	99	360	7.7
Fortune Bay	809,037	2,135	1,884	88	429	9.1
Bonavista Bay	1,552,790	4,657	3,442	74	451	9.6
Harbor Main	605,535	1,829	1,246	68	486	10.3
Fogo	887,290	1,803	1,639	91	541	11.5
Ferryland	780,959	1,290	1,125	87	694	14.8
Placentia & St Mary's	2,200,333	3,237	2,876	89	765	16.3
St Barbe	1,620,600	2,084	2,043	98	793	16.9
Trinity Bay	3,061,890	4,551	3,807	84	804	17.1
<b>Total</b>	<b>15,592,210</b>	<b>39,671</b>	<b>32,578</b>			
<b>Mean</b>				<b>83</b>	<b>439</b>	<b>9.3</b>

Source: Census of Newfoundland and Labrador, 1921 (St. John's: [Colonial Secretary's Office], 1923)

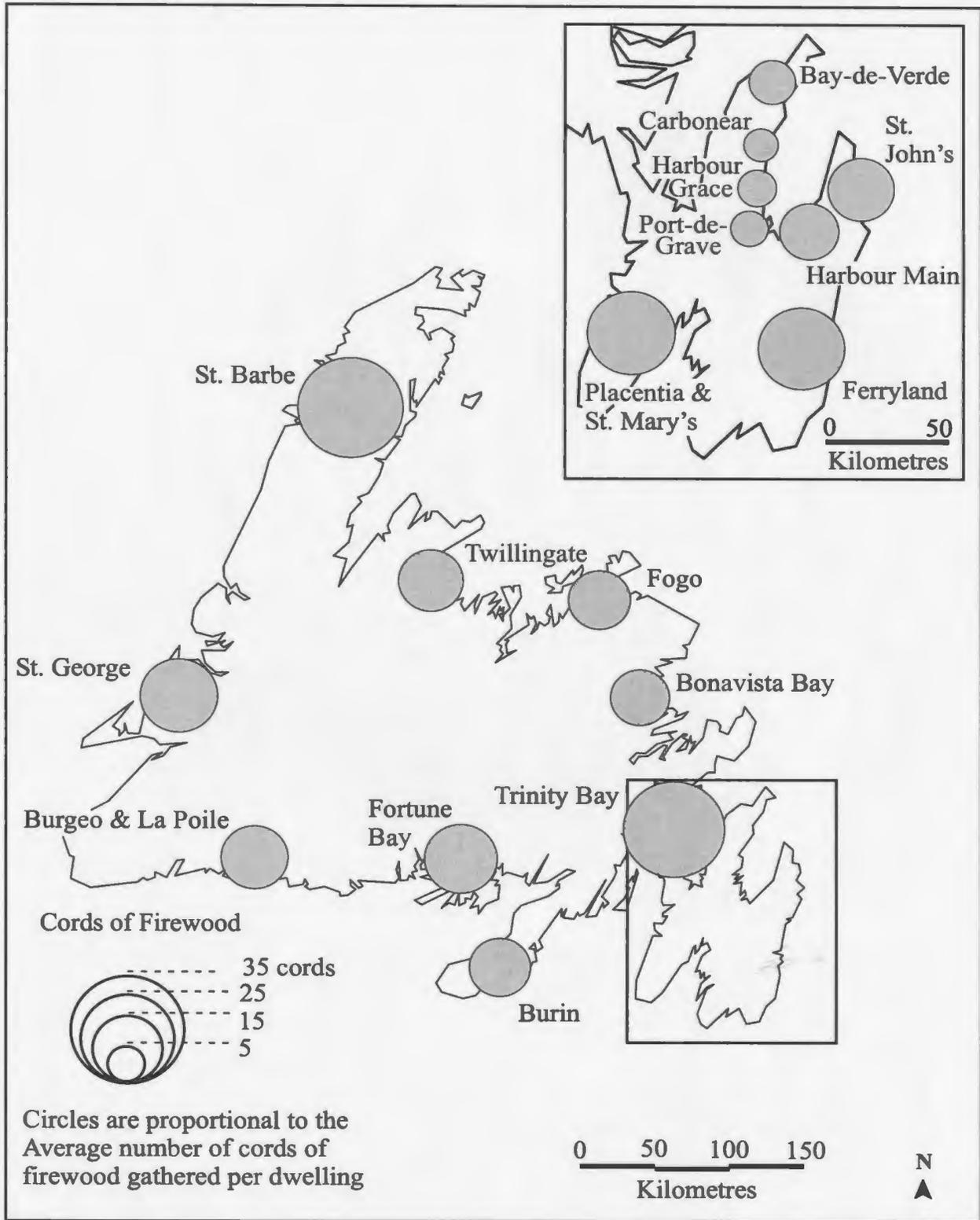
**Table 5.6**  
**Firewood Cut in the St. John's Region in 1910 and 1920**

<b>Year</b>	<b>Firewood cut</b>	<b>Dwellings inhabited</b>	<b>Dwellings with wood data</b>	<b>Percent dwellings with wood data</b>	<b>Sticks per dwelling</b>	<b>Cords per dwelling</b>
1910	1,076,450	7,982	1,665	21	647	13.8
1920	1,235,550	8,433	1,718	20	719	15.3

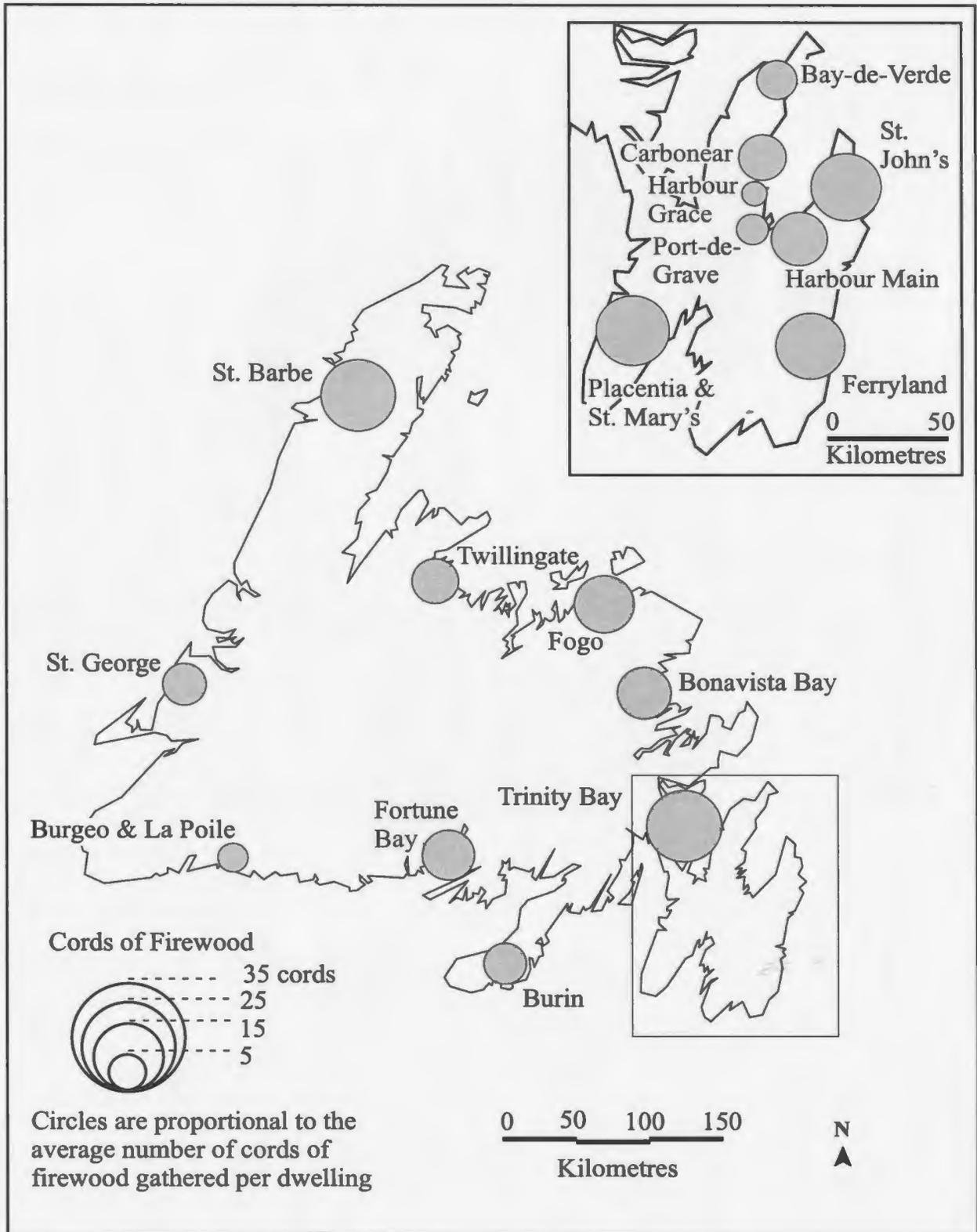
Source: Census of Newfoundland and Labrador, 1911 (St. John's: J.W. Withers, 1914);  
Census of Newfoundland and Labrador, 1921 (St. John's: [Colonial Secretary's Office],  
1923)

stick fits this definition, but individual sticks contain different amounts of wood depending upon the size of the initial tree. Thus, areas with larger trees could potentially be using fewer *sticks* per year, but actually burning more *CORDS* of firewood in total. Despite this limitation, it is still useful to derive an approximate number of cords of wood from the figures of sticks for comparison purposes. The average number of cords per dwelling was derived by dividing the average number of sticks per dwelling for each district by forty seven. The number forty seven, the approximate number of sticks per cord, was obtained in Chapter Three and Appendix One using Head's estimate of the average size of sticks in the Bonavista Bay area. The average size of sticks would vary to some degree around the island, and thus would the number of sticks per cord of wood. However, this still provides a means of comparing firewood gathering patterns around the island and assessing the extent to which the population was using wood fuel to meet its heating and cooking needs. The average number of cords of wood gathered per dwelling in each district is listed in Tables 5.4, 5.5, and 5.6. These values are also mapped in Figures 5.15 and 5.16.

From these tables and maps, several comments can be made about fuel wood use in Newfoundland during the first few decades of the twentieth century. However, it is first useful to determine how much wood a household needed if they were using only wood fuel for all of their heating and cooking needs. In calculating the effects that fuel wood gathering had on the forests of Newfoundland, Head uses the figure of fifteen cords per family, stressing that this would have been the minimum amount required. However,



**Figure 5.15: Cords of firewood gathered per dwelling in 1910**  
 Source: Data derived from *Census of Newfoundland and Labrador 1911*



**Figure 5.16: Cords of firewood gathered per dwelling in 1920**  
 Source: Data derived from *Census of Newfoundland and Labrador 1921*

these estimates are for burning wood in an open hearth. A wood-burning stove was more fuel efficient, and less wood was required. In looking at community forest resources on the southern Avalon, Chafe studied the communities' consumption of wood fuel in the middle of the twentieth century. He found that the average yearly consumption per house was twelve cords in Ferryland, eighteen cords in St. Shotts, and sixteen cords in Portugal Cove South, although he mentions that the last two are likely over-estimates.<sup>68</sup>

Omohundro explains that currently, on the Northern Peninsula, most residents burn five to ten cords of wood per year, supplementing their wood stoves and wood furnaces with an oil furnace.<sup>69</sup> Wood usage would have been greater in the early twentieth century than it currently is in the communities Omohundro studied, since the population was using wood stoves that, though more efficient than the open hearth they succeeded, were still less efficient than modern wood furnaces and airtight stoves. As well, many residents today use gas or electricity for cooking, reducing their fuel wood needs. Thus, Chafe's figure of twelve cords per year seems reasonable for a household that was relying entirely on wood fuel to meet its heating and cooking needs at the beginning of the twentieth century.

Amounts of wood gathered per dwelling vary significantly throughout the province. In 1910, the settlement with the largest amount of wood per dwelling was St. Barbe, with an average of 30.8 cords of wood, or 1446 sticks, per dwelling. In contrast, Carbonear

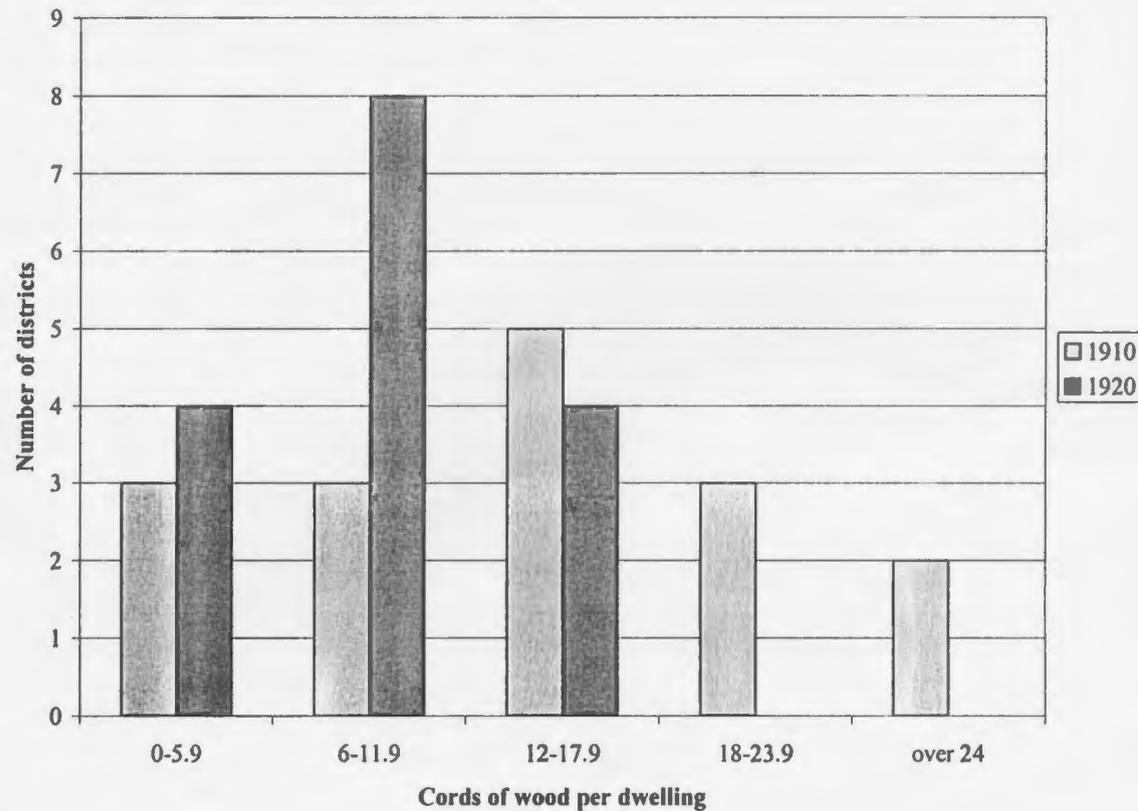
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<sup>68</sup> S. Chafe, *Rural community forest resources, southern Avalon* (St. John's: n.p., 1963), 8.

<sup>69</sup> Omohundro, *Rough Food: the seasons of subsistence in Northern Newfoundland* (St. John's: Institute of Social and Economic Research, Memorial University of Newfoundland, 1994), 228-9.

averaged only 4.4 cords, 206 sticks, per dwelling. Ten of the sixteen enumeration districts on the island on average gathered more than twelve cords per year, indicating that much of the island's population was relying primarily on wood fuel at this time. Six districts fell below the twelve cord level, suggesting that alternate fuel sources were common in these regions. By 1920, the amounts of wood gathered overall had decreased, perhaps indicating an increasing reliance on alternate fuel sources. Only four districts gathered more than twelve cords per dwelling. The district with the highest average was Trinity Bay, with 17.1 cords, 804 sticks, per dwelling, while residents of Harbour Grace gathered a mere 2.6 cords, or 122 sticks, per dwelling on average. These significant regional differences seem to have been a factor of varying ecological environments and climate, as well as the differing availability and feasibility of using alternate sources of fuel. Some locations, such as communities located in the areas of barrens (chapter three), would have had sparse firewood resources due to *site shortages*, and thus would likely have reported gathering less wood in the censuses. Averaging the cords of firewood per dwelling over an entire district masks some of these local differences, which a more detailed examination would reveal. Such an examination is beyond the scope of this study, however.

Figure 5.17 illustrates the average number of cords per dwelling gathered in 1910 and 1920. The districts are placed in categories depending on the average number of cords of wood gathered. In 1910, the majority of districts fall into the 12.0 to 17.9 cords category, indicating that most households were gathering annually the twelve cords required when



**Figure 5.17** Graph showing the number of districts that gathered various amounts of cords of firewood per dwelling in 1910 and 1920. In 1910, the majority of districts was gathering slightly over twelve cords per dwelling, indicating that most people were relying on wood fuel for most of their heating and cooking needs. However, in 1920, the majority of districts was gathering less than twelve cords of wood per dwelling, signifying that more residents were turning to alternate fuel sources. St. John's is not included in this graph

wood was the only fuel used, yet were not gathering substantially more wood than needed. Only two districts gathered, on average, more than twenty four cords of wood, for example. By 1920, the situation had changed slightly, and the majority of districts gathered less than twelve cords per dwelling, fitting into the 6.0 to 11.9 cords category. This suggests that residents in these districts were turning to alternate fuel sources at this time.

The large amount of wood gathered by the residents of St. Barbe is immediately noticeable when looking at the tables and maps. On average, in 1910 and 1920 residents gathered 30.8 cords and 16.9 cords of wood per dwelling respectively. Both of these averages far exceed the twelve cord estimate used as the amount needed for a year's worth of heating and cooking. Climate and growing conditions likely play a role in these high numbers.

The climate of the area is the first, since winter on the Northern Peninsula is longer and colder than much of the rest of the island. Thus, residents of the district may have had a longer season during which heat from the stove would have been desirable than many other districts, and therefore would have consumed more firewood. Omohundro states that the heating season on the Northern Peninsula "in most years is all year long...."<sup>70</sup> There are varying opinions on the amount of wood that was used during the summer

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<sup>70</sup> Omohundro, *Rough Food*, 229.

months in other parts of the island. Feltham mentions that, in Bonavista Bay, “if the men of the family earned their living in the inshore fishery, the amount of wood used during the summer was almost on a par with that of the winter. During the summer, the men were coming and going day and night and the kitchen stove was in almost continuous use.”<sup>71</sup> However, Murray’s work elaborates on this situation to some extent. She explains that during the fishing season, women had to serve up to seven meals a day, which meant that a fire was often needed in the stove for such tasks as boiling a kettle.<sup>72</sup> However, she also explains that often these fires were made from just a few dried boughs which would create a quick, hot fire, but which would not last long.<sup>73</sup> Thus, although the stove was often going, as Feltham has pointed out, it was often only a few boughs that were used for a fire, rather than large quantities of wood. Dale states that “during the winter the harshness of the climate meant that homes needed to be heated for six or seven months.”<sup>74</sup> It seems then, that on most of the island, although the stove was kept going to some extent during the summer months for cleaning and cooking, less fuel wood was used, since heat was not desirable and stove use was minimized. According to Omohundro, this was not the case on the Northern Peninsula, perhaps partially explaining the large number of cords of wood gathered in the St. Barbe district. The shorter vegetative season of St. Barbe, with less than 100 days in some areas, would slow the growth of trees in comparison with the rest of the island, where the vegetative season

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<sup>71</sup> Feltham, *Bonavista Bay Revisited*, 28.

<sup>72</sup> Murray, *More Than Fifty Percent*, 15.

<sup>73</sup> Murray, *More Than Fifty Percent*, 15.

<sup>74</sup> Linda Dale, “A Woman’s Touch: Domestic Arrangements in the Rural Newfoundland Home” *Material History Bulletin* 15 (Summer 1982), 20.

ranges from 120 to 160 days.<sup>75</sup> Possibly more sticks would have been required to create a cord of wood in St. Barbe than in an area with larger trees. This consideration somewhat moderates the apparently large amounts of wood cut in the St. Barbe area. However, it still appears that substantial quantities of firewood were gathered by the residents and that most of the population was using wood as their primary fuel source. There is a significant decrease in the amount of wood cut between the two censuses, and this may be attributable to some inhabitants in the area switching to alternate forms of fuel, a phenomenon discussed further in chapter six. However, even today, wood remains a major fuel source for residents in some communities on the Northern Peninsula.<sup>76</sup>

In contrast with the St. Barbe district, residents in the districts around Conception Bay cut very small amounts of fuel wood. Residents of the Port-de-Grave and Harbour Grace districts, for example, gathered less than six cords of wood per dwelling in 1910, while those in the Carbonear district collected less than five cords of wood per dwelling for the same year. The districts of Harbour Main and Bay-de-Verde collected slightly more firewood, with 11.3 and 7.4 cords per dwelling respectively. Apart from Carbonear, all five districts in Conception Bay gathered less firewood in 1920 than they had in 1910. These low numbers in both censuses were very probably a result of the combination of depletion of the forests in the area and the use of coal and electricity. Numerous

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<sup>75</sup> Woodrow and Heringa *Pedoclimatic Zones*, 7.

<sup>76</sup> For example, in 1994, Omohundro wrote that seventy three percent of Main Brook homes, and eighty seven percent of Conche homes, both communities on the Northern Peninsula of Newfoundland, were heated with wood. John T. Omohundro, *Rough Food*, 228.

settlements are in the Conception Bay region, and timber resources are somewhat limited. As Brown has mentioned, older settlements around Conception Bay were increasingly having to travel further to find enough wood for fuel in the early nineteenth century.<sup>77</sup> If this was the case in the early nineteenth century, by the early twentieth century wood shortages must have been quite severe. Many of the areas around Conception Bay are larger urban centres, relatively speaking, and they rapidly used up the available timber resources. The lower averages of firewood cut in the districts around Conception Bay possibly reflect such *consumption shortages* as well as the growing reliance of the citizens on alternate fuels, such as coal and electricity, for cooking and heating purposes, a transition discussed in more detail in chapter six.

Though most districts decreased their firewood harvesting between the two censuses, in two districts the amount of firewood cut actually increased. These two are Carbonear and the combined district of St. John's. The mean number of sticks gathered per dwelling in St. John's increased from 647 in 1910 to 719 in 1920, an increase of around eleven percent. To begin looking at this change, it is first important to note the characteristics of the district. Because the enumeration areas in the actual city of St. John's did not have data on firewood recorded in the censuses, the dwellings in these areas were eliminated from the district total in calculating the mean. This removed the main urban areas from the district, leaving only the more rural settlements, such as Bauline and Flat Rock. In both censuses, exactly the same settlements were eliminated from the calculations

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<sup>77</sup> Brown, introduction to *Conception Bay South*, 1.

because they did not have data on firewood. The amount of firewood in the whole district increased from 1,076,450 sticks in 1910 to 1,235,550 sticks in 1920. However, the increase is mostly the result of substantial change in a few specific communities than a general overall increase in the district. For example, the settlement of Torbay rose from a low 57,600 sticks cut in 1910 to 379,650 sticks in 1920, a change of 322,050. Since there were 189 inhabited dwellings in the community in 1920, this works out to a substantial 2,009 sticks, or 42.7 cords, per dwelling for that year, an astounding increase over the 230 sticks, or 4.9 cords, per dwelling in 1910. Flat Rock and Bauline also significantly increased in the amount of firewood gathered. It should be noted that firewood gathering decreased in some communities in the district, explaining why the overall change in the entire district is more than accounted for by the increase in Torbay alone. Some communities in the area, however, were obviously gathering far more firewood than they required.

The city of St. John's is a likely market for the excess firewood cut in these communities. Although residents of the city of St. John's had access to coal and electricity for heating their homes by the time of the censuses, some were still burning wood in their stoves and fireplaces. Residents of the city usually had nowhere to gather firewood and no means of transporting wood back to their homes. Thus, those who burned wood would have had to get their firewood from a different source. This likely explains the large and increasing amount of firewood gathered by the residents in some of the communities just mentioned. Residents in smaller settlements near St. John's, as well as farmers just outside of the city

itself, sometimes cut extra firewood during the winter months to sell to city residents as a means of supplementing farming and fishing incomes.<sup>78</sup> It is likely this phenomenon that resulted in the elevated averages of wood cut in communities around St. John's.

Although residents in these communities cut firewood for their own families' needs, much of the wood they gathered was for commercial purposes. Much of the firewood cut in the St. John's region was cut for sale to urban residents, not to meet the immediate subsistence needs that dictated firewood gathering in most of Newfoundland.

Apart from a few exceptions, like those just mentioned, most communities were probably gathering only as much wood as was needed to sustain themselves for a year. Many communities would have been cutting less wood than needed to sustain all of their occupants, because some residents relied partially, or entirely, on coal or electricity for heating and cooking. There were few large urban centres in Newfoundland, so there was very little market for firewood outside the St. John's and Conception Bay areas.

Merchants and other wealthier community members created a small market for wood. In the merchant ledgers examined for stove sales (chapter four), some customers of the firms occasionally sold firewood as well as fish products to the firms. In March of 1875, for example, the Grieve and Bremner firm of Trinity bought 1205 sticks of firewood, which converts into 25.6 cords, from thirteen different customers.<sup>79</sup> The only record of a customer buying wood from a merchant was in the James Ryan ledger of 1870, in which

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<sup>78</sup> Aly O'Brien, interview by author, 28 May 2003, St. John's, Newfoundland.

<sup>79</sup> "Ledger 1875" item 2.07.010 in "Grieve and Bremner fonds," Maritime History Archive, Memorial University of Newfoundland, pp 85-6.

Charles Fitzgerald purchased twenty sticks from the firm.<sup>80</sup> Most members of the communities would have gathered their own firewood, and there therefore would have been very little market for excess wood.

### 5.4.3 Access to Forest Resources

Unlike other provinces of Canada, land in Newfoundland was not granted in large lots with a systematic land granting system. Inhabitants lived on small plots of land along the coast, and much of the area of the province remained crown land. In the 1911 census, only 233,320 acres (approximately 945 km<sup>2</sup>) were listed as occupied land.<sup>81</sup> This is slightly less than one percent of the 106,000 km<sup>2</sup> that make up the island of Newfoundland.<sup>82</sup> Thus, most of the island was crown land, and there was little land that private property rights prohibited residents from using. Acts of legislature governing the use of Newfoundland forests began as early as 1844,<sup>83</sup> although the first mention of the use of the fuel wood resources did not occur until 1875. In this year, an Act regarding the sale and management of timber on crown lands stated, “provided that nothing in this Act contained, shall affect the right of cutting wood for the purpose of fuel and the fishery.”<sup>84</sup> Residents’ use of the forests for fuel wood continued to be mentioned in the Acts, and by

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<sup>80</sup> "Ledger 1870," in "James Ryan Limited (Bonavista) fonds," p. 609.

<sup>81</sup> *Report on the Census of Newfoundland, 1911* (St. John's: J.W. Withers, 1914), xxviii.

<sup>82</sup> Area of the island of Newfoundland is from Damman, "Ecological subdivision of Newfoundland," 163.

<sup>83</sup> *An Act to make provision for the Disposal and Sale of ungrated and unoccupied Crown Lands within the Island of Newfoundland and its Dependencies, and for other purposes. Statutes of Newfoundland 1844.* c. 1. 29 April 1844.

<sup>84</sup> *An Act to amend the Consolidated Statutes, Title XIII, 'of Crown Lands, and Mines and Minerals,' Chapter 45, 'of the mode of obtaining Grants,' and Chapter 46, 'of licenses and Grants in certain cases,' and to make provision respecting the sale and management of Timber on Crown Lands. Statutes of Newfoundland 1875.* c. 3, section 3. 17 April 1875.

1906, restrictions had been placed on erecting saw mills within three miles of the coastline, in order to preserve the forests within this limit “for the purpose of the Fishery, for Shipbuilding, for Fencing, and for firewood.”<sup>85</sup> Authorities were acknowledging the population’s dependence on wood fuel for warmth and cooking. They were thus imposing legislation aimed at allowing the population to continue making use of this necessary subsistence resource.

Much of the reasoning behind this Act likely came from the fact that the fishery was the main economic activity of the island. Since the population required large quantities of wood to construct the flakes, stages, boats, homes, and other buildings associated with the fishery, it was in the government’s best interest to insure a continued supply of wood could be obtained from the local forests. However, firewood is specifically mentioned in the Act, and the government apparently realized that this means of providing warmth was also essential to the survival of the population. Since most of the island was crown land, and because the legislation protected inhabitants' use of the forests for fuel, access shortages because of property rights were uncommon in Newfoundland.

## 5.5 Summary

Throughout the nineteenth and twentieth centuries, several stove-producing foundries existed in Newfoundland, and the United Nail and Foundry was one of the main stove

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<sup>85</sup> *An Act to Restrict the Erection of Saw Mills upon Timber Limits within three miles of the Coast line of this Colony, and better to preserve such Timber Lands for the purpose of the Fishery, for Shipbuilding, for Fencing, and for firewood. Statues of Newfoundland 1906. c. 28. 10 May 1906.*

manufacturers on the island. During the late nineteenth and early twentieth centuries, it was the only long running stove manufacturer. An examination of records from the UNF indicates that the foundry was selling thousands of cast iron stoves, both imported and locally produced, each year. The population was buying these stoves at an average rate that ranged from one stove every nine and a half years to a stove every eighteen and a half years per inhabited dwelling. The UNF sold their products to merchants, the majority of whom were located in St. John's. These merchants then sold the appliances to outport customers, and both the railway and the coastal boat service were used to transport stoves to the end users.

Data from the censuses of 1911 and 1921 provide a picture of firewood use in Newfoundland at the beginning of the twentieth century. The picture is one of a general decrease in the reliance on fuel wood resources, as alternate fuels became available, and as local forest supplies were depleted. However, many residents still gathered annually the twelve cords necessary to provide heat for warmth and for cooking. Most of the population gathered only as much firewood as required by their household, but some residents, on the periphery of urban areas, cut extra wood to sell to town residents. Although the population's reliance on this subsistence resource was decreasing, wood still provided heat for a substantial portion of the Newfoundland population at the beginning of the twentieth century.

## CHAPTER SIX

### THE USE OF ALTERNATE FUEL SOURCES

#### 6.1 Introduction

Although many Newfoundland residents choose to continue using fuel wood today, wood stove use gradually declined throughout the twentieth century, as inhabitants switched to other fuels such as coal, electricity, and oil to meet their heating and cooking needs. Gradually, residents began to rely less on local forest resources to keep them warm and to cook their food. Fuel that had to be purchased from the local merchant or electric company replaced a cashless subsistence resource. This chapter discusses these alternate fuel sources, and the extent of their use in Newfoundland.

#### 6.2 Coal

Coal was the first fuel to replace wood in Newfoundland. On some parts of the island, this had apparently occurred prior to 1810, in which year an estate auction in *The Royal Gazette* listed “1 large copper coal scuttle” among the items to be sold.<sup>1</sup> Advertisements from the first half of the nineteenth century also list coal itself among the products for sale. “150 Hogsheads best House Coals” are advertised in the *Star and Conception Bay Journal* in 1838, and several days later “50 Tons Good House Coals, cheap from the ship” are brought to the public’s attention.<sup>2</sup> Many other newspaper advertisements mention coal, but it is unclear whether this coal was intended for household use, or for other,

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<sup>1</sup> *The Royal Gazette and Newfoundland Advertiser* (St. John's) 14 June 1810.

<sup>2</sup> *Star and Conception Bay Journal* (Carbonear) 3 October 1838 and 17 October 1838.

commercial, purposes, such as on fishing schooners and in factories. However, some amount of coal was obviously being imported to the island specifically for domestic use during the first half of the nineteenth century.

Advertisements marketing coal are more numerous during the second half of the century; although many do not specify the market at which the product is aimed, some are obviously promoting coal for domestic use. That in *The Newfoundlander* of 1851 is an example. It reads, “To Housekeepers. P.H. Carter & Co. Are now landing from the Brig *Mary* of Waterford, a Cargo of the best quality Newport COAL – cheap.”<sup>3</sup> The fact that this advertisement is addressed specifically to housekeepers suggests that the P.H. Carter & Co. were intending to sell their coal to the domestic, not the commercial, market.

Total imports of coal, for all uses, are listed in the Customs’ Returns found as Appendices in the *Journals of the House of Assembly* of Newfoundland.<sup>4</sup> These *Journals* begin in 1833, although Customs’ Returns are not included until 1836. The coal imported to the island is recorded in each year after this, and these imports are listed in Table 6.1. The tons of coal imported, as well as the population and number of dwellings, have been averaged between each two censuses to derive mean figures for the periods. The original figures can be found in Appendix Four.

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<sup>3</sup> *The Newfoundlander* (St. John's) 20 November 1951.

<sup>4</sup> Newfoundland. House of Assembly, *Journal of the House of Assembly of Newfoundland* (St. John's: The House of Assembly, 1833-1949).

**Table 6.1**  
**Coal Imported to Newfoundland 1836-1935, both for**  
**Domestic and Commercial Use**

<b>Year</b>	<b>Mean Annual</b>	<b>Mean</b>	<b>Mean Number</b>	<b>Mean Tons</b>	<b>Mean Tons Coal</b>
	<b>Coal Imports</b>	<b>Population</b>	<b>of Dwellings</b>	<b>Coal Per</b>	<b>per Dwelling</b>
	<b>(tons)</b>			<b>Person</b>	<b>Imported Annually</b>
1836-1845	14,604	81,673	no data	0.18	no data
1845-1857	21,137	109,467	no data	0.19	no data
1857-1869	41,173	133,348	20,709	0.31	1.99
1869-1874	44,878	151,958	23,490	0.30	1.91
1874-1884	68,911	176,491	27,452	0.39	2.51
1884-1891	83,578	195,725	32,326	0.43	2.59
1891-1901	88,691	207,681	36,297	0.43	2.44
1901-1911	171,355	227,854	41,845	0.75	4.10
1911-1921	270,677	248,965	46,422	1.09	5.83
1921-1935	312,842	272,066	51,151	1.15	6.12

Source: Journals of the House of Assembly of Newfoundland, 1833-1935

Not all of the coal imported to Newfoundland was used for domestic purposes. A large quantity of it had a commercial function, such as being used as fuel in fishing schooners, generating electricity for both commercial and domestic use, creating coal gas for lighting, and fuelling the steam engines that powered Newfoundland factories.<sup>5</sup> The early Customs' Returns do not differentiate coal that was entering the island for domestic purposes from that which was used commercially, and it is difficult to ascertain how much of the imported product was used for domestic heating and cooking.

However, beginning in 1905, some of the coal imported to the island was classified as “coal, for domestic use in outports,” and it was duty free. Coal imported in this category was presumably used in the outport stoves of the island, for both heating and cooking purposes. It is probable that some of this domestic coal was used for other purposes, just as “farm gas” occasionally fills up family cars today. However, there is no reason to suspect that most of this coal was not used as intended, to meet the heating and cooking needs of the rural Newfoundland population. The domestic coal imported to Newfoundland is listed in Table 6.2, and a more detailed version of the table can be found in Appendix Four. Prior to 1934, all of the coal in this domestic category was free of duty. In 1934, under the exigencies of near financial collapse in the colony, a duty of 50¢ per ton was charged on the “coal imported into outports for domestic purposes,” and in 1935, the category ceased to exist.

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<sup>5</sup> M. Baker, J. Miller Pitt and R.D.W. Pitt, *The Illustrated History of Newfoundland Light and Power* (St. John's: Creative Publishers, 1990), 20.

**Table 6.2: Domestic Coal Imported to Newfoundland, 1905-1934**

<b>Year</b>	<b>Mean Domestic Coal Imported (tons)</b>	<b>Mean Outport Population*</b>	<b>Mean Outport Dwellings*</b>	<b>Mean Tons Domestic Coal per Person</b>	<b>Mean Tons Domestic Coal per Dwelling</b>
prior to 1905	no data				
1905-1911	70,363	183,340	34,985	0.38	2.01
1911-1921	40,692	206,517	38,653	0.20	1.05
1921-1934	74,970	227,090	42,590	0.33	1.76

Source: Journals of the House of Assembly of Newfoundland, 1905-1935; Census of Newfoundland and Labrador 1901-1935.

\* In calculating the mean outport population and dwelling numbers, which were then used to calculate mean tons of coal per person and per dwelling, values from the towns of St. John's, Harbour Grace, and Carbonear were subtracted from the island totals, since these towns were exempt from receiving "coal, for domestic use in outports."

Table 6.2 lists the coal that was imported for domestic use in outports, which includes most communities on the island. Note that coal used in the larger urban centres of St. John's, Harbour Grace, and Carbonear is not included in this classification. Residents from these communities paid duties of, variously, 25¢, 50¢, 70¢, or \$1.00 per ton on this fuel source during this time. The custom of applying duties to coal imported into larger centres, while allowing that entering outports for domestic purposes to remain duty free, may have begun as early as 1887. *A Year Book and Almanac of Newfoundland, for 1888*, listing Newfoundland customs' tariffs from 1887 notes, "Coals, imported or brought into the Ports of St. John's, Harbor Grace, and Carbonear" were charged a duty of 30¢ per ton, while coals brought into other ports remained exempt.<sup>6</sup> The Customs' Returns do not reflect such an early date, since although coal was listed as duty free in the Returns at this time, all coal was duty free, and no distinction was made between coal entering outport communities and that entering St. John's. However, the Proceedings in the *Journal of the House of Assembly* for June 19, 1895 state that "coals imported or brought into the ports of St. John's, Harbour Grace or Carbonear" would have a duty imposed of 30¢ per ton, and that "coals imported or brought into the ports of Placentia, provided duties shall not be levied on any greater quantity than four hundred tons of coal imported annually into Placentia by any person or corporation for the purpose of railway operations" would be charged a 25¢ per ton duty.<sup>7</sup> Thus, the domestic coal use of the

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<sup>6</sup> *A Year Book and Almanac of Newfoundland, for 1888* (St. John's: J.C. Withers, Queen's Printer, 1888), 174-6.

<sup>7</sup> Newfoundland, House of Assembly, "Proceedings June 19, 1895" in *Journal of the House of Assembly 1895* (St. John's: House of Assembly, 1896).

larger urban centres on the island cannot be determined from the information provided in the Customs' Returns.

Coal imports in general increased substantially during the nineteenth century. 9,973 tons of coal were imported to the island in 1836; by the end of the century, this amount had increased tenfold, with total coal imports of 99,250 tons in 1899. These coal imports also increased in relation to the population of the island, with an average of 0.18 tons of coal per person each year during the 1836-1845 period rising to an annual average of 0.43 tons per person during the 1891-1901 period. The coal imports were thus increasing far more rapidly than was the population, indicating that the residents dramatically increased their use of coal during the nineteenth century. However, as mentioned earlier, prior to 1905, it is impossible to distinguish coal used for domestic heating and cooking from that used for commercial purposes, and thus it cannot be determined from this data whether domestic coal use increased during the nineteenth century. Much of this imported coal would have been used to fuel the factories and fishing schooners of the island, and, after 1844, to create coal gas for lighting. Even after 1905, only the domestic coal used in outport communities can be differentiated from commercial coal, and that used for heating and cooking in St. John's, Harbour Grace, and Carbonear is not specified. The residents of these larger urban centres likely faced fuel wood shortages earlier than those in smaller communities, and since residents of the Avalon Peninsula did not practice winterhousing as a means of alleviating fuel wood shortages, they possibly would have turned to coal earlier than inhabitants of the rest of the island.

The amount of coal used domestically by these outport communities, as listed in the Customs' Returns, increased substantially during the early twentieth century. Although there is a dramatic decrease in the amount of this coal imported to the island between 1907, when 109,424 tons of coal for domestic purposes were imported, and 1908, when 27,757 tons were brought to the island, this appears to have been a change in the classification of the domestic coal, since the total amount of coal imported to the island actually increases, and it is simply the amount of domestic coal that decreases. After this, the amount of coal imported duty free "for domestic use in outports" increases. During the 1905 to 1911 period, there were, on average, 2.01 tons of domestic coal imported per dwelling each year. This, however, is an elevated figure resulting from the probable change in classification just mentioned. The figure of the intervening period of 1911 to 1921 is much lower, only 1.05 tons per dwelling. By the 1921-1935 period, however, 1.76 tons per dwelling were imported. Overall, the total amount of coal being imported into outport Newfoundland for domestic purposes increased, indicating that a growing proportion of Newfoundland's rural population was using coal as their fuel source, either wholly or in part.

Coal is listed in the ledgers of merchants serving the outport communities of Newfoundland. The merchant ledgers from various Newfoundland communities that were examined for sales of stoves and bake pots (chapter four) were also scrutinized for references to sales of coal, which are summarized in Table 6.3. There is not enough data from this source to determine coal use for the entire island, but a few comments can be

**Table 6.3**  
**Sales of Coal in the Ledgers of Outport Merchants**

<b>Merchant</b>	<b>Year</b>	<b>Number of</b>
<b>Firm</b>		<b>Coal Sales</b>
Alan Goodridge and Sons	1840	5
George Forward	1843-44	6
James Ryan Ltd.	1870	2
Grieve and Bremner	1875	0
C.& A. Dawe	1877	86

made nonetheless. Sales of coal occur in the ledgers from the 1830s and 1840s, but they are not plentiful. The Alan Goodridge and Sons ledger, from Renew, for 1840 records 88 individual customers who were purchasing goods from the firm, yet only five sales of coal, to three different individuals, are listed. Similarly, there are only six sales of coal in the George Forward ledger, of Carbonear, from 1844. Some residents of Renew and Carbonear were apparently burning coal at this time, but most seem to have still been using wood as their primary fuel. In some communities in the 1870s, almost all residents were at least partially relying on coal for their fuel. C.&A. Dawe of Bay Roberts have a page in their ledger near the end of 1877, on which they have compiled a list of customers who were ordering coal from them for the upcoming winter. The ledger lists ninety one different customers who patronized the firm, and of these, eighty six placed an order for coal. Thus, most of the firms' customers were burning coal to some extent. However, James Ryan Limited of Bonavista made only two sales of coal in 1870, and Grieve and Bremner of Trinity sold no coal at all in 1875. There are two possible causes for the enormous difference between the ledgers of the 1870s. One is simply that residents in different communities were using different amounts of coal, depending on the firewood supply, as well as such factors as the price of coal, the social status associated with burning coal as opposed to firewood, and the relative prosperity of residents in the area. As well, the merchant firms examined may not have been the only source of coal in the area, and thus some residents may have been purchasing coal from other sources, such as other merchant firms in the area.

It is impossible to date when residents of the island began using coal instead of wood as their primary fuel source. By 1810 some inhabitants, in the St. John's area if not elsewhere, were burning coal to meet at least some of their heating and cooking needs. Some outport residents used coal by 1840, although many would still have relied on wood. Nonetheless, coal gradually became more pervasive in the Newfoundland context, with many residents of the island buying coal instead of gathering wood. An article in the *Trinity Enterprise* of 1916 discusses a shortage of coal on the island, due to the use of ships for war purposes. Apparently this shortage was problematic enough that the government had begun to regulate the escalating prices charged for coal. The author of the article has several ideas on how to alleviate the problem, such as using the sealing steamers to haul coal during the summer months, and states that these ideas will "have no difficulty in keeping a supply of coal at St. John's which will meet all necessary demands. This, too, will be a relief to the people living in the outports, who have a very limited supply of coal."<sup>8</sup> The author specifically mentions that people living in outport Newfoundland were suffering from a shortage of coal. Thus, at least some residents in these small, coastal communities were relying on coal to at least partially, if not entirely, fulfill their heating and cooking needs, and were dependant on the arrival of shipments of the fuel. A shortage of coal in these communities seems to have been a recurring problem throughout the twentieth century. An article in *The Newfoundland Journal of Commerce* of 1957 states that "while the coal supplies are adequate for St. John's region and the firms in this business have ample stocks, the same cannot be said for some

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<sup>8</sup> "The Coal Question!" in *Trinity Enterprise*, 5 February 1916.

outlying coastal regions depending upon schooner loads from Sydney.”<sup>9</sup> This time the problem was not the number of vessels transporting coal, but a strike at the Sydney mines, and line-ups for boats waiting to load at the mines.<sup>10</sup> Outport residents were once again facing a shortage of a fuel they had come to rely upon. Numerous advertisements in various Newfoundland publications of the late nineteenth and early twentieth centuries publicize coal for domestic use (Figures 6.1 and 6.2). Coal had apparently become an important fuel in both outport and urban homes, and a shortage of coal meant the residents would be facing a very cold winter.

On November 18, 1929, a tsunami hit the south coast of Newfoundland, killing twenty seven people, and causing widespread damage and loss of property. In order to receive compensation for their material losses, residents had to declare their lost goods to the Burin Relief Committee. Cranford has researched these declarations and subsequently published them.<sup>11</sup> Because the tidal wave occurred just before the winter began, people had likely already purchased their winter's supply of coal, and thus, a study of the declarations gives an indication of the use of coal on the Burin Peninsula in 1929. Overall, 737 households applied for relief, and of these, 181 (twenty five percent) recorded a loss of coal. To extrapolate from this, it seems likely that at least one quarter of the population of the Burin was burning coal at this time. However, the actual proportion was probably higher. Some of the claims only list a few items that were lost,

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<sup>9</sup> “Sale of Coal and Wood Stoves Declines as Oil Fuel Replaces Kindling in Outports” in *The Newfoundland Journal of Commerce* 24 no. 12 (December 1957)

<sup>10</sup> Ibid.

<sup>11</sup> Garry Cranford, *Tidal Wave: A List of Victims and Survivors - Newfoundland, 1929* (St. John's: Flanker Press, 2000).

89 WATER STREET,

ST. JOHN'S, NEWFOUNDLAND.

.....  
**STEPHEN MARCH & SONS,**

*Shipowners and Coal Merchants.*

.....  
I M P O R T E R S O F

Welsh Steam Coal, American Anthracite  
and Cape Breton House Coals.

*Steamships supplied on reasonable terms, and despatched  
Coal put alongside in Lighters.*

.....  
DEALERS IN PROVISIONS, GROCERIES,

ICE AND FISHING OUTFITS,

AMERICAN DORIES, BANKING CABLES, &c.

**Figure 6.1: 1885 advertisement for imported domestic coal**

Source: John Sharpe comp., *Directory for the towns of St. John's, Harbor Grace, and Carbonear, Newfoundland, for 1885-86: containing much useful information relating to the Colony.* (St. John's: n.p., 1885)

**H. J. STABB & CO.**

— Importers of —

<p>KEROSENE OIL</p> <p>GASOLENE, BRICKS</p> <p>ENGLISH HOUSEHOLD COAL</p> <p>NORTH SYDNEY COAL</p>		<p>ANTHRACITE COAL</p> <p>CEMENT</p> <p>DRAIN PIPES</p> <p>CORKWOOD</p>
--	--	---

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Directors: Lewis Dawe, Wm. Dawe TELEPHONE 84

**Avalon Coal Co., Ltd.**

Suppliers of

ALL KINDS OF DOMESTIC COAL

IT WILL PAY YOU TO GET IN TOUCH WITH  
US WHEN YOU NEED THE  
—VERY BEST COAL—

—ooo—

ORDERS FILLED PROMPTLY FROM ALL  
OVER THE BAY

—ooo—

COLEY'S POINT, BAY ROBERTS, C.B.

**Figure 6.2: Advertisements from 1928 for domestic coal**

Source: Newfoundland Directory, 1928 Containing an alphabetical list of all Business Firms and Private Citizens (St. John's: Newfoundland Directories, 1928), 428, 503.

and the absence of coal among these items does not necessarily mean a family was not using coal. Most of the coal claimed ranges in amount from less than half a ton to two tons. In contrast to the frequency of coal, only fifty two households (seven percent) recorded a loss of firewood. Like the coal, there were probably many households making claims that had not lost their firewood, and thus the proportion of the population burning wood was probably significantly higher than seven percent. However, it is interesting to note that this unique source of information indicates that a much larger percentage of the population of the Burin Peninsula, an area with limited forest resources, was burning coal rather than wood in 1929.

Several authors have mentioned the end of the second world war as the date when residents of outport communities began burning coal to meet their heating and cooking needs. Ryan mentions that coal became the principal fuel source in Renew's during the 1950s and early 1960s. Prior to 1945, burning coal was a status symbol in the community because few people could afford this more expensive fuel.<sup>12</sup> Feltham mentions that until the 1940s, wood was the only fuel used in Bonavista Bay.<sup>13</sup> Similarly, everyone in Deep Harbour burned wood prior to the second world war, at which point they began supplementing wood with coal.<sup>14</sup>

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<sup>12</sup> Ryan, "Firewood Cutting at Renew's," 52.

<sup>13</sup> Feltham, *Bonavista Bay Revisited*, 28.

<sup>14</sup> Louis J. Chiaramonte, *Craftsman-Client Contracts: Interpersonal relations in a Newfoundland fishing community* (Toronto: University of Toronto Press, 1970), 13.

Newfoundland merchants sold coal in several different quantities. The largest measurement in which coal was sold was the ton, which contained 2,240 pounds of coal. In the St. John's area, it was common for residents to order coal by the half or quarter ton, and it was delivered loose in a cart.<sup>15</sup> The next largest measurement of coal was the hogshead (Hhd). This was not the 54 gallon (245.5 L) hogshead used to measure alcohol<sup>16</sup>, but was a dry unit of measurement, used for items like coal. Figure 6.3 illustrates a hogshead used for dry measure, in this case of tobacco, in the Ross-Thomson Museum in Shelburne, Nova Scotia. Those used for coal in Newfoundland would likely have been similar. Based on the price of a Hhd of coal in relation to tons and hundredweights (112 pounds) of coal, and on a note in the 1869 Price List of Brooking and Co., a Hhd appears to have contained 6 hundredweights, or 672 pounds, of coal.<sup>17</sup> In other words, there seem to have been 3 ½ Hhd per ton of coal. Coal is listed in the Brooking and Co. Price Lists in hundredweights, but there are no references in any of the ledgers to the fuel actually being sold in such a unit.<sup>18</sup> There are, however, sales of a tub of coal.<sup>19</sup> The *Weights and Measures Act* of 1916 states that if coal is "sold by measure there shall be two hundred and twenty-four pounds to the tub, and one hundred and twelve pounds to the half tub."<sup>20</sup> A tub of coal was therefore one tenth of a ton, or two

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<sup>15</sup> Aly O'Brien, interview by author, 28 May 2003, St. John's, Newfoundland.

<sup>16</sup> *ITP Nelson Canadian Dictionary of the English Language* (Toronto: ITP Nelson, 1998) s.v. "hogshead."

<sup>17</sup> "Price List 1869" in "Brooking & Co. Price Book," from the "Brooking & Co. fonds," Maritime History Archive, Memorial University of Newfoundland.

<sup>18</sup> "Price Lists 1859-72" in "Brooking & Co. Price Book."

<sup>19</sup> Coal is sold in tubs in "1877 Ledger" in "C. & A. Dawe fonds," Maritime History Archive, Memorial University of Newfoundland. Coal is also sold by the tub in "1856 Ledger" in "George Forward fonds," Maritime History Archive, Memorial University of Newfoundland.

<sup>20</sup> *An Act to Amend and Consolidate the Law Relating to Weights and Measures and the Inspection of Lumber. Statutes of Newfoundland*, c. 10. 4 May 1916.



**Figure 6.3: A Hogshead barrel found in the Ross-Thompson Museum in Shelburne, NS. June 2004.**

hundredweights. In the above mentioned declaration of losses in the Burin tsunami, the term barrel seems to have been used instead of tub to refer to two hundredweights of coal.<sup>21</sup> There is one other unit in which coal was sold. Although the handwritten nature of the ledgers and the damage to them over years reduces their legibility, this unit seems to have been the covel, which is defined as “a half-barrel or tub, [frequently] with handles or rope affixed to the sides or with holes for inserting a staff for two men to carry.”<sup>22</sup> This unit of coal was sold by both Alan Goodridge & Sons and George Forward.<sup>23</sup> The *Dictionary of Newfoundland English* emphasizes the use of a covel as a container for fish livers, but it also seems to have been a barrel in which coal or salt was sold.<sup>24</sup> Based on prices in the ledgers of both firms, a covel appears to have contained between one fourth and one fifth of a hogshead, or, in other words, between 134 and 168 pounds of coal.<sup>25</sup>

The coal used in Newfoundland came from several sources. Table 6.4 lists the main origins of the imported coal, and the percentage of the total coal imports for which each origin accounted. Canadian coal made up the majority of the imports throughout the entire time period, accounting for seventy two to ninety five percent of all coal imports. Almost all of the Canadian coal imported to Newfoundland was from the mines in Sydney, Nova Scotia, and in many years the Customs' Returns list Nova Scotia, and not

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<sup>21</sup> Cranford, *Tidal Wave*.

<sup>22</sup> *DNE* 2<sup>nd</sup> ed., s.v. "covel."

<sup>23</sup> "1840 Ledger" in "Alan Goodridge and Sons Limited fonds," Maritime History Archive, Memorial University of Newfoundland, p 139; and "1856 Ledger" in "George Forward fonds," p 581.

<sup>24</sup> Stephen Power sold one bundle of hogsheads hoops and one bundle of covel hoops to Alan Goodridge & Sons in May and July of 1840. ("1840 Ledger," p. 202) From this it appears that a covel must have been a barrel, since, like the hogshead, it required hoops for its construction. The Goodridge firm also sold salt in covels ("1840 Ledger.")

<sup>25</sup> "1840 Ledger" in "Alan Goodridge and Sons Limited fonds;" "1844 Ledger" and "1855 Ledger" in "George Forward fonds," Maritime History Archive, Memorial University of Newfoundland.

**Table 6.4**  
**Origins of Coal Imported to Newfoundland. Prior to 1861 the origins of the coal is not specified in the Customs' Returns**

Year	Tons Coal	% From	% From	% From
	Imported	Canada	UK	US
1865	35,509	72	28	0
1870	39,148	81	20	0
1875	59,433	81	18	1
1880	76,881	76	22	1
1885	75,057	78	19	3
1890	87,578	88	8	5
1895	76,120	81	15	3
1900	no data			
1905	168,817	78	13	9
1910	220,193	81	7	12
1915	254,583	79	15	6
1920	309,022	95	0	5
1925	332,672	80	11	9

Source: Newfoundland. House of Assembly, *Journal of the House of Assembly of Newfoundland* (St. John's: The House of Assembly, 1865-1925).

Canada, as the origin of the coal. The United Kingdom was Newfoundland's other main source of coal. Some coal was imported from the United States, but only a small amount. Coal from other countries was also imported to Newfoundland, but this coal accounted for only a very small proportion of the total. These countries included St. Pierre (a few tons almost every year), the Netherlands (1903, 1906-7, 1909-11), Germany (1868, 1872, 1906), Belgium (1907, 1908-10), Jersey (1857-9, 1864-8, 1876, 1879, 1880, 1884, 1885), Spain (1868, 1887), the British West Indies (1875), and Brazil (1876).

The different characteristics of coal as opposed to wood necessitated a few changes in heating and cooking technology when coal was to be the main fuel used. The andirons that were a common feature of the wood-burning open hearth in Newfoundland had to be abandoned if coal was to be burned. Cast iron grates, which were shallower and narrower than any grates used for wood, were inserted into fireplaces to keep the coal in a compact mass, and allow for the upward draught that coal required to burn.<sup>26</sup> Some stoves were designed to burn both wood and coal, but others had to be ordered specifically by fuel type. The *Ensign* cook stove shown in Figure 6.4, for example, could be "supplied for wood or coal fuel to suit the individual needs of the purchaser." This appears to have been as much a convenience as a necessity, since fireboxes for wood were larger than those used for burning coal. It was generally still possible to burn wood in a stove designed for coal, but because the firebox was smaller, the wood had to be cut into smaller pieces, adding more time to the process of gathering and preparing firewood.

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<sup>26</sup> Hugh D. Roberts, *Downhearth to Bar Grate: An Illustrated Account of the Evolution in Cooking Due to the Use of Coal Instead of Wood* (Bath: Dawson & Goodall, 1981), 7, 10.

THE **nafco** ENSIGN

THE "ENSIGN" and "COMFORT" Elevated Oven Cooking Stoves are well known throughout Newfoundland and are still living up to the good reputation they have built up over the years. The "ENSIGN" with its 15" x 14" square oven, and the "COMFORT" with its 14" round oven, are of ample size for the average household. Being of all cast iron construction, they will give years of satisfactory service and trouble-free baking and cooking. Can be supplied for wood or coal fuel to suit the individual needs of the purchaser.



A **nafco** PRODUCT IS YOUR GUARANTEE OF SATISFACTION

Figure 6.4: A UNF advertisement for their *Ensign* model cook stove, which could be ordered for either coal or wood fuel

Source: United Nail and Foundry advertising pamphlet (St. John's: n.p., c. 1940s)

Some of the UNF products, such as the *Nafco Special* cook stove (Figure 5.12), were “supplied with duplex grates for wood or coal, but special wood linings can be supplied if required.”<sup>27</sup> Others, like the *Alexandra* cook stove (Figure 6.5), were “designed particularly for wood fuel, it will take a junk 24 inches long,” indicating that a large firebox was an important feature in wood-burning stoves.<sup>28</sup> Thus, stove manufacturers took into consideration the changes in fuel that were occurring throughout the island, and incorporated such changes into the design of new stoves.

### 6.3 Electricity

Electricity made its first appearance in St. John’s in 1883, although it was not until the establishment of the Newfoundland Electric Light Company Ltd in 1885 that electricity was available to the public.<sup>29</sup> It was first used for lighting shops, street lights, and government buildings.<sup>30</sup> However, electricity did not immediately replace gas as the main source of light in St. John’s, and it was 1892 before electricity was available for lighting private residences.<sup>31</sup> Heating with electricity was not yet an option.<sup>32</sup> By July of 1898, the Newfoundland Electric Light Company was providing electric light to 147 shops and 137 private residences in the city,<sup>33</sup> and the use of electric lighting in St. John’s

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<sup>27</sup> United Nail and Foundry Company Limited advertising pamphlet. Pamphlet 12-46 (St. John’s: n.p. [c. 1946?])

<sup>28</sup> United Nail and Foundry Company Limited advertising pamphlet (St. John’s: n.p. [c. 1940s?])

<sup>29</sup> Baker, Pitt and Pitt, *Newfoundland Light and Power*, 24, 28.

<sup>30</sup> *Ibid.*, 28, 35.

<sup>31</sup> *Ibid.*, 39.

<sup>32</sup> *Ibid.*, 44.

<sup>33</sup> *Ibid.*, 46.

THE **nafco** ALEXANDRA

For Satisfaction in  
COOKING, BAKING and  
HEATING use the

**"ALEXANDRA"**



*An Elevated Oven Cooking Stove DELUXE*

▼ The "ALEXANDRA" is an Elevated Oven Cooking Stove with full nickel trim that makes it the stove "De Luxe" in this class. Slightly longer than the "Ensign," designed particularly for wood fuel, it will take a junk 24 inches long. Of all cast iron construction, it will give years of satisfaction

SPECIFICATIONS

Covers .....	4-8½
Size of Cooking Top .....	27" X 23"
Size of Oven .....	15" X 16" X 26"
Floor Space .....	26" X 46"
Height of Cooking Top .....	19½"
Stove Pipe .....	7"
Weight .....	275 lbs.

Sold by



WOOD AND COAL  
ELEVATED OVEN  
COOKING STOVES



Made by

THE UNITED NAIL & FOUNDRY CO. Limited

ST. JOHN'S, NEWFOUNDLAND

**Figure 6.5: An *Alexandra* model cook stove with a firebox designed specifically for wood fuel c. 1940**

Source: United Nail and Foundry advertising pamphlet (St. John's: n.p., c. 1940s)

expanded rapidly after this. In 1901, 9000 individual electric lights were in shops, homes, churches, and government buildings, while six years later this number had more than doubled to 20,500.<sup>34</sup> It should be noted that although electric lighting was replacing gas lighting, both of these power sources were derived from coal to begin with. Coal gas was produced in a gas manufacturing plant located along the St. John's harbour, and electricity was created by a coal-fuel generator. Thus, coal was still the initial source of power for both methods of lighting.

Although electric light became common in St. John's, many urban residents were apparently still using other forms of heating. This induced Newfoundland Light and Power (the successor company of Newfoundland Electric Light Company) to use tactics such as providing lower rates for customers who used electricity for both heating and lighting in an attempt in 1929 to convince customers to use electric heating in their homes.<sup>35</sup> Early twentieth century acts of legislature incorporating electrical companies specify that the companies were being established for the purpose of providing both electric light and electric heat to the nearby areas. The United Towns' Electrical Act of 1902, for example, was passed "for the purpose of lighting the towns and buildings of Harbor Grace, Carbonear, and Heart's Content, by electricity; also, to heat the buildings in said towns by electricity...."<sup>36</sup> Similar statements appear in the acts incorporating other electric companies on the island. Electric heating was a consideration at the time, but

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<sup>34</sup> Ibid., 79.

<sup>35</sup> Baker, Pitt and Pitt, *Newfoundland Light and Power*, 109.

<sup>36</sup> *An Act to incorporate the United Towns' Electrical Company, and for other purposes. Statutes of Newfoundland.* c. 8. 22 April 1902, p 82.

apparently many residents were still choosing to use wood and coal burning stoves and fireplaces.

The first electricity available to the public of St. John's was generated by a coal-fuelled, steam-driven generator located in the Terra Nova Bakery on Flavin's Lane,<sup>37</sup> (Figure 5.1) but hydro-electricity soon became the dominant means of generating electric power around the island. The first hydro-electric generating station in Newfoundland was established in 1898 on Black River, at the head of Placentia Bay, to supply energy to a pulp mill in the area.<sup>38</sup> This station was short lived, but that completed at Petty Harbour in 1900 to supply St. John's has survived much longer, with several expansions throughout its lifetime.<sup>39</sup> The coal-fuelled electrical generator on Flavin's Lane was dismantled once the Petty Harbour station was in operation and supplying St. John's with electricity.<sup>40</sup> Other rivers and ponds, such as Middle Pond, Mobile River, and Pierre's Brook also supplied hydro electricity to St. John's, and, eventually, the surrounding communities.<sup>41</sup>

Although St. John's first had electricity late in the nineteenth century, much of rural Newfoundland was substantially later in receiving electric power, regardless of whether this was hydro-electric power, or electricity produced by a diesel-driven generator.

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<sup>37</sup> *Encyclopedia of Newfoundland and Labrador Vol 1*. ed. Joseph Smallwood (St. John's: Newfoundland Book, 1981-94),s.v. "electricity," p. 752.

<sup>38</sup> Baker, Pitt and Pitt, *Newfoundland Light and Power*, 56.

<sup>39</sup> Baker, Pitt and Pitt, *Newfoundland Light and Power*, 56.

<sup>40</sup> *Encyclopedia of Newfoundland and Labrador Vol 1*,s.v. "electricity," p. 752.

<sup>41</sup> Baker, Pitt and Pitt, *Newfoundland Light and Power*, 83, 112.

Baker, Pitt and Pitt explain that “the vicissitudes of Newfoundland’s geography and the wide dispersal of its communities proved an impediment and a challenge for the provision of services generally and for electricity in particular, so that by the time of Newfoundland’s entry into the Canadian confederation in 1949 most of Newfoundland was still without access to electric power.”<sup>42</sup> Many communities were not provided with electric service until the 1960s and 1970s.<sup>43</sup> Prior to this, residents relied on wood, coal, and oil to meet their heating and cooking needs.

Beginning in the early 1900s, small companies began supplying electricity to communities outside of St. John’s, and the United Towns Electric (UTE) was one of these. The UTE power generating station was established near Victoria, on Conception Bay, in 1904, and residents of Harbour Grace, Carbonear, and Heart’s Content were provided with electricity for heating, lighting, commercial power, and an electric street car.<sup>44</sup> Other communities in the area received electricity soon after, such as Freshwater and Victoria in 1908 and Bay Roberts in 1913.<sup>45</sup> Grand Falls residents first received electric power in 1909,<sup>46</sup> but other areas of the island were much later. Deer Lake and Corner Brook were first supplied with electricity in 1925, when a power station built to supply the mill at Corner Brook also provided power to the public in these towns.<sup>47</sup>

Communities on the Burin Peninsula received electricity in 1939, and Port aux Basques

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<sup>42</sup> Ibid., 11-12.

<sup>43</sup> Ibid., 12.

<sup>44</sup> Baker, Pitt and Pitt, *Newfoundland Light and Power*, 173, 175.

<sup>45</sup> Ibid., 179, 182.

<sup>46</sup> Ibid., 163.

<sup>47</sup> Ibid., 159.

was supplied with the service in 1946.<sup>48</sup> Renewes, a community not far south of St. John's, did not get electric service until 1955, and Port Blandford 1960.<sup>49</sup>

Logistical difficulties in supplying electricity to the dispersed Newfoundland population were gradually overcome, and by 1965 there were 83,858 electricity customers, both private and corporate, in Newfoundland.<sup>50</sup> Apparently many residents were eager to have the benefits of electricity, since in 1928, only a year after the Bay of Islands Light and Power Co. received a government franchise to supply electricity to unserved communities surrounding Corner Brook, they already had 300 customers.<sup>51</sup> The first electricity in private homes was used simply for lighting, and other forms of fuel, such as gas, coal, and wood, were used for heating and cooking. Baker, Pitt and Pitt mention that although the St. John's Electric Light Company was cornering the city's lighting market at the end of the nineteenth century, the coal gas company made gains in supplying heating and cooking fuel.<sup>52</sup> As noted above, Newfoundland Light and Power tried to entice customers to use electricity for both heating and lighting with reduced rates in 1929.<sup>53</sup> Apparently the public had been eager to acquire electricity for lighting purposes, but were slow to adopt the new fuel for heating their homes. By this time, electric appliances were available for cooking as well as heating. Figures 6.6 and 6.7 illustrate advertisements for electric cooking products from the 1920s and 1930s. It is interesting

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<sup>48</sup> Ibid., 207, 212.

<sup>49</sup> Ibid., 223, 255.

<sup>50</sup> Baker, Pitt and Pitt, *Newfoundland Light and Power*, 274.

<sup>51</sup> Ibid., 159.

<sup>52</sup> Ibid., 44.

<sup>53</sup> Ibid., 109.

# SEASONABLE GIFTS!

We have a large assortment of GOODS FOR THE XMAS SEASON including  
the following :

Electric Heaters, " Warming Pads, " Toasters, " Irons, etc.	Skates, Slides, Coasters, Snow Shoes.	Silverware, Community Plate, Crookery and Glassware.
--	--	---

The "Ideal Gift"—Japanese Hand Painted China  
in Tea Sets, Berry Sets, Sugar and Cream, Coffee Sets, Bon Bon Dishes, etc.

**AYRE & SONS, LTD.,**  
Hardware and Crockery Departments.

Figure 6.6: 1921 advertisement for Christmas gifts, including electric toasters. Although electric cooking appliances do not seem to have been widely used at this time, they were certainly available.

Source: *The Newfoundland Quarterly* Christmas Number, 1921, 33.

## If You Were Hiring a Cook . . .



If you decide you were spending entirely too much time in your kitchen and you set about hiring a cook, you would, of course, insist that she be thoroughly dependable.

You'd want this cook to have dinner ready for you right on time each evening. You'd like her to keep your kitchen as cool and clean as possible. In short, you'd insist upon exactly those qualifications, which form the Invisible Cook of the Electric Range, you accept as a matter of course.

Certainly, with an Electric Range, you leave your kitchen each day knowing you'll return to a perfectly cooked meal in the evening. The automatic dials take care of that. Perfect cooking results are always assured when cooking heat and cooking speed are so accurately regulated. And of course meals are ready right on the dot.

As for keeping your kitchen cool and clean . . . consider how well this modern Electric Range is *insulated* . . . how it keeps all the heat *inside the range*, where it belongs. Consider, too, the complete absence of grease and smoke . . . you can't beat an Electric Range for real cooking cleanliness.

By all means come in for a demonstration to-day . . . you'll hardly believe cooking could be so carefree.

Electric Ranges, 10 % down, 10 % monthly.

**Newfoundland Light and Power Company, Ltd.,**

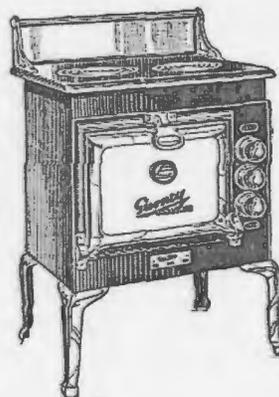
Phones 239.

St. John's.

## What! Dinner Not Ready Yet?

He's hungry. He wants his dinner. It's late. Yet you can't blame his wife, exactly. She gets a bit tired of standing over a hot stove in a stuffy kitchen. An afternoon of bridge sounds mighty attractive by comparison. How to be in two places at once . . . to the woman who does her own cooking the only answer is the Electric Range. She can slip a complete meal into the electric oven before she goes out, adjust a dial . . . and leave for a carefree afternoon. At the appointed hour, the cooking current is automatically turned on . . . when her dinner is done the current turns itself off. And when she arrives home, there's no last minute fuss and flurry . . . nothing for her to do but place a perfectly cooked meal on the table.

Come in and see these modern Electric Ranges. . . ask questions about them . . . find out how easy, how quick, how economical, electric cooking really is.



### **ELECTRIC RANGES**

*Only \$55.00 Installed. Make this essential modern convenience a part of your home.*

**Newfoundland Light and Power Company, Ltd.,**

Phones 239 - 240.

St. John's.

Figure 6.7: Advertisements by Newfoundland Light and Power for electric ranges. It is interesting to note that in this case, the electric company, and not a shop owner, is promoting the electric range. Presumably the company was more concerned with selling the electricity that the range would require than with selling the range itself.

Source: (top) *The Newfoundland Quarterly* Christmas 1931, 39; (bottom) *The Newfoundland Quarterly* Christmas 1930, 6.

to note that many of the advertisements for electric cooking equipment were from Newfoundland Light and Power, who were obviously trying to convince the public to purchase items that would require the company's electrical services. Gander residents were apparently using electric stoves in the late 1950s when electrical shortages restricted the use of such appliances.<sup>54</sup> The Public Service Electric Company, established in 1917 to provide electricity to residents of the Carbonear sub-peninsula, received governmental permission in 1919 to import electric heating equipment free of duty. They were hoping this would induce their customers to switch from coal to electricity for heating their homes.<sup>55</sup> However, Baker, Pitt and Pitt point out that "electric heating would have limited success in Newfoundland until the 1960s."<sup>56</sup>

After this time, electricity became one of the principal fuels used for both heating and cooking. Tables 6.5 and 6.6 demonstrate the growing use of electricity by the Newfoundland population, as listed in the Census of Canada. In 1955, only 13.3 percent of Newfoundland households were using electricity for cooking, while by 1995 this figure had climbed to 97 percent (Table 6.5). In the 1955 census, electricity is not recorded as an option for heating fuels, with the categories of "wood," "coal or coke" and "oil or other liquid fuel" representing all of the Newfoundland heating fuels. By 1995, 48.5 percent of Newfoundland households are recorded as using electricity for heating

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<sup>54</sup> Baker, Pitt and Pitt, *Newfoundland Light and Power*, 166.

<sup>55</sup> *Ibid.*, 187.

<sup>56</sup> *Ibid.*, 187.

**Table 6.5**  
**Percentage of Newfoundland Households Using Various Fuels for *Cooking***

	<b>Year</b>					
<b>Type of Cooking Fuel</b>	<b>1955</b>	<b>1975</b>	<b>1980</b>	<b>1985</b>	<b>1990</b>	<b>1995</b>
Oil or other liquid fuel	4.8	33.6	16	6.2	2.9	0
Electricity	13.3	58.4	76.4	88.9	95.4	97
Coal or coke	*	0	0	n/a	n/a	n/a
Wood	81.9*	6.4	5.6	n/a	n/a	n/a
Other	0	0	0	4.3	0	0

Source: *Household Facilities and Equipment* Table 20 (1955), Table 21 (1975, 1980), Table 22 (1985) and Table 4.1 (1990, 1995). (n.p.: Statistics Canada, 1955, 1975, 1980, 1985, 1990, 1995).

\* In the 1955 census, coal and wood for cooking are combined into one category, but the two fuels are listed separately in the following censuses.

**Table 6.6**  
**Percentage of Newfoundland Households Using Various Fuels for *Heating***

	<b>Year</b>					
<b>Type of Heating Fuel</b>	<b>1955</b>	<b>1975</b>	<b>1980</b>	<b>1985</b>	<b>1990</b>	<b>1995</b>
Oil or other liquid fuel	14.5	78.4	53.5	35.2	31.8	35.1
Electricity	n/a	16.8	34	38.9	45.7	48.5
Coal or coke	47	0	0	n/a	n/a	n/a
Wood	39	4.8	11.8	25.3	22	16
Other	0	0	0	0	0	0

Source: *Household Facilities and Equipment* Table 11 (1955), Table 14 (1975, 1980, 1985), Table 4.1 (1990, 1995). (n.p.: Statistics Canada, 1955, 1975, 1980, 1985, 1990, 1995).

their homes. Another development represented in the census data is the increase in the use of wood fuel for heating between 1975 and 1985. This increase corresponds with the time in which North Americans were concerned about the environmental consequences of burning fossil fuels, and a return to wood fuel was promoted. In Newfoundland, residents at this time could receive subsidies to purchase a wood-burning stove.<sup>57</sup>

#### 6.4 Oil

Another fuel that was to replace both wood and coal was oil, and this transition began in the 1940s in St. John's.<sup>58</sup> A 1957 article in *The Newfoundland Journal of Commerce* discusses the growing pervasiveness of oil fuel for heating in the province. It lists numerous communities serviced by Imperial Oil Ltd., such as Catalina, Grand Falls, Port aux Basques, Deer Lake, Twillingate, and Harbour Breton.<sup>59</sup> The author writes "wood and coal as primary sources of winter fuel are becoming more obsolete each year. Wood supplies are getting scarcer and the coal heaters are being replaced by oil burning units. In the new St. John's areas coal is unknown now as a heating unit."<sup>60</sup> In the Canadian Censuses (Table 6.6) oil was a very common heating fuel, with 78.4 percent of Newfoundland households using it in 1975. This percentage declined over time, but even in 1995, 35.1 percent of households were using oil for heating. Oil as a fuel for cooking never reached such high levels (Table 6.5), although in 1975, 33.6 percent of

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<sup>57</sup> Government of Newfoundland and Labrador, Department of Mines and Energy, Energy Branch, *Heating with Wood in Newfoundland and Labrador* (St. John's: Department of Mines and Energy, 1985), 10.

<sup>58</sup> Aly O'Brien, interview by author, 28 May 2003, St. John's, Newfoundland.

<sup>59</sup> "Sale of Coal and Wood Stoves Declines," 16.

<sup>60</sup> *Ibid.*

Newfoundland households used "oil or other liquid fuel" for cooking. This number declined over the following decades and by 1995, no households were listed as using oil as a cooking fuel. The advertisements illustrated in Figures 6.8 to 6.10 depict some of the oil-fuelled alternatives to wood fuel available to Newfoundland residents in the middle of the twentieth century. The Stenpro range (Figure 6.9) is particularly interesting, as it was designed for burning oil, wood, and coal. Electricity was also an option, and electric ranges are listed in the 1957 Trade Directory For Newfoundland.<sup>61</sup> In the same issue, "Electric, Gas and Coal Ranges, Oil Heaters, Coal Heaters, Furnaces,"<sup>62</sup> and "Cooking Ranges for Coal and Wood. Heating Stoves for Coal and Wood. Warm Air Furnaces for Coal and Wood"<sup>63</sup> are listed under the heading of "Heating Systems and Apparatus." These listings demonstrate a wide range of fuel options available to the residents of Newfoundland in the middle of the twentieth century.

## 6.5 The Continuing Use of Wood Fuel

The use of coal and wood declined dramatically during the 1960s as it was replaced by these alternate fuel sources. In 1959, the UNF was still selling large numbers of wood and coal burning stoves for both heating and cooking. By 1971, however, sales had diminished, and only about five models of the stoves still had a market.<sup>64</sup> Like the open hearth, wood stoves had predominantly become a technology of the past. Wood fuel has not disappeared from Newfoundland, however, although many homes that currently use

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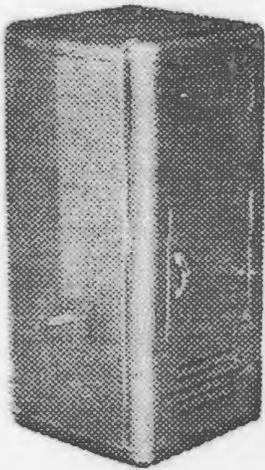
<sup>61</sup> "1957 Trade Directory For Newfoundland" in *The Newfoundland Journal of Commerce* 24, vol. 7 (July 1957), 22.

<sup>62</sup> Listing of Findlays Limited Ontario, *Ibid.*, 27.

<sup>63</sup> Listing of Record Stove & Furnace Company, Moncton, *Ibid.*, 28.

<sup>64</sup> Roger Angel, interview by author, 29 November 2004, St. John's, Newfoundland.

# MacDONALD OIL SPACE HEATERS



GIVE YOUR CUSTOMERS  
MAXIMUM HEAT

AT

MINIMUM COST ...

BE SURE TO SATISFY  
YOUR NEXT CUSTOMER  
WITH A

## MacDONALD

TRADE SUPPLIED BY

# United Nail & Foundry Co., Ltd.

ST. JOHN'S—NEWFOUNDLAND

**Figure 6.8: 1957 advertisement for an oil space heater**

Source: *The Newfoundland Journal of Commerce* 24 no. 10 (October 1957), 31.

TOP PERFORMANCE -- CONVENIENCE -- BEAUTY -- STYLE

# THE STENPRO

## ALL-PURPOSE OIL RANGE



designed for burning

- OIL
- WOOD
- COAL

The STENPRO is supplied in both "R" and "S" models ("S" model with High Shelf illustrated) with High Shelf or High Closet. This range in the "R" model is also available with an extra large storage drawer. A Copper Hot Water Coil is available as an accessory.

Where initial cost is a factor and yet the last word in performance and appearance is desired, you will find the Stenpro in a class by itself. The Stenpro brings the finest cookery service possible into kitchens where space and household budget are both limited.

Model 32... Range with wood firebox and plate drilled for installation of Boston-Breeze burner



EQUIPPED WITH A  
BOSTON BREEZE BURNER  
(as shown)

### Manual...

The manually-controlled model gives a full, modulated flame. Air and oil feeds are synchron-

ized to give you efficient combustion at all stages. The flame can be quickly regulated by the turn of a single knob to deliver just the required amount of heat. The motor on these burners uses less current than a small electric light. Available in 2/3 gallon capacity only.

### The STENPRO SPECIFICATIONS

Cover	7 1/2"	Keyplate
Oven Size	17x20x11 1/2"	
Surface Size	34x24"	
Height to Cooking Top	31 1/2"	
Length of Fire Box	16 1/2"	
Width of Fire Box	7"	
Depth of Fire Box	8"	
Reservoir Capacity,		
"R" Model	4 1/2 gals	



## STEEL & ENGINE PRODUCTS LTD.

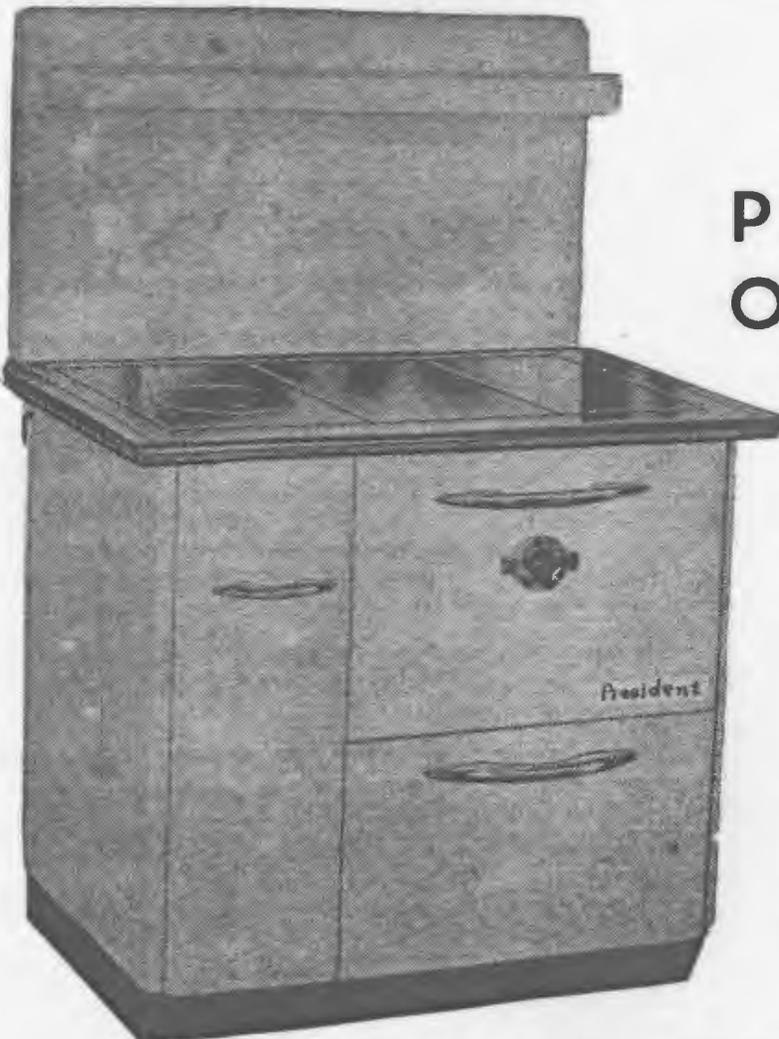
468 WATER ST., ST. JOHN'S, NFLD.

DIAL 5150

Dealer Inquiries are Invited

Figure 6.9: 1957 advertisement for an all-purpose oil range

Source: *The Newfoundland Journal of Commerce* 24 no. 10 (October 1957), 22.



## PRESIDENT OIL RANGES

This factory-built range conforms to the latest standards of safety and service. Here is a combination of quality features that will win the heart of any homemaker. Breeze pot type burner, white enamel finish, polished steel top. Available with choice of warming closet or high shelf and with or without forced draft.

**\$249.00 up**

WHOLESALE DISCOUNTS TO  
MERCHANTS AND DEALERS

# THE GREAT EASTERN OIL COMPANY LIMITED

**Figure 6.10: 1957 advertisement for an oil range**

Source: *The Newfoundland Journal of Commerce* 24 no. 2 (February 1957), back cover.

wood for heating also have an electric or gas stove to cook upon. Residents of St. John's can order truck loads of firewood each fall, and many inhabitants of rural communities still cut sticks of wood from the surrounding forests each year.

An Act was passed in 1954 which upheld the three mile limit preserving forests near the coast for use of the coastal residents. However, this Act also stated that "no person shall cut or remove any trees from Crown Lands, except a maximum of two thousand cubic feet of timber cut for his own use, as firewood, in the fishery, in agriculture, or in other occupations of a similar kind, unless he has obtained a permit from the Minister issued in accordance with this Act and the regulations."<sup>65</sup> This is the first reference in the Acts to a limit being placed on the amount of wood residents could gather for such uses. Two thousand cubic feet is approximately 15.6 cords of wood, and most likely should have been sufficient to meet average annual needs. Beginning around 1975, the provincial government required anyone wishing to cut wood on crown land for domestic purposes to obtain a domestic cutting permit.<sup>66</sup> Today these annual permits can be obtained from the Department of Natural Resources for a fee of \$21, and by completing an application form. Such a permit allows a household to cut up to thirty six cubic metres stacked, or roughly ten cords, of wood for domestic purposes.<sup>67</sup> Only one licence is allowed per household, unless it can be demonstrated that the household's fuel needs cannot be met

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<sup>65</sup> *An Act to Amend the Crown Lands Act. Statutes of Newfoundland. c. 57. 22 June 1954.*

<sup>66</sup> Personal communication with Bruce Boland, librarian for the Department of Natural Resources, Government of Newfoundland and Labrador, 11 February 2005. Oddly, the Acts from the 1970s make no reference to this new requirement.

<sup>67</sup> "Domestic Cutting regulations Definitions 2.i." House of Assembly of Newfoundland and Labrador. 13 January 2005. < <http://www.gov.nl.ca/hoa/regulations/rc961108.htm> >; "Cord" in *Canadian Dictionary of the English Language* (Toronto: ITP Nelson, 1998), 308.

with one licence.<sup>68</sup> Ten cords is quite similar to the twelve cord figure used earlier as the amount required annually by a family to meet their heating and cooking needs using a wood stove (chapter five). The wood burning furnaces used today are more fuel efficient than the wood stoves of the early twentieth century, and cooking is often done on electric or gas ranges. Thus, the ten cord limit usually allows for more fuel than required by a household.<sup>69</sup> The amount of wood collected under these domestic permits has only been recorded for the past two years. Data from 2003 is listed in Table 6.7, and illustrated in Figure 6.11. Even the forests just outside of St. John's are marked with snowmobile paths used by residents gathering firewood, and apparently some of this wood ends up heating the homes of St. John's inhabitants, as wood stacked outside a rowhouse in the downtown area indicates (Figure 6.12). Wood fireplaces have taken on a more recreational role than they had in the past. Often a wood fire is lit in a fireplace primarily for the enjoyable atmosphere created rather than the need for extra warmth. However, fireplaces, wood stoves, and wood furnaces continue to warm some homes across the island today. Figure 6.13 shows a recent advertisement for a wood burning stove sold at a local home improvement store. Some residents continue to rely on the island's forests to provide them with the heat essential to life in Newfoundland.

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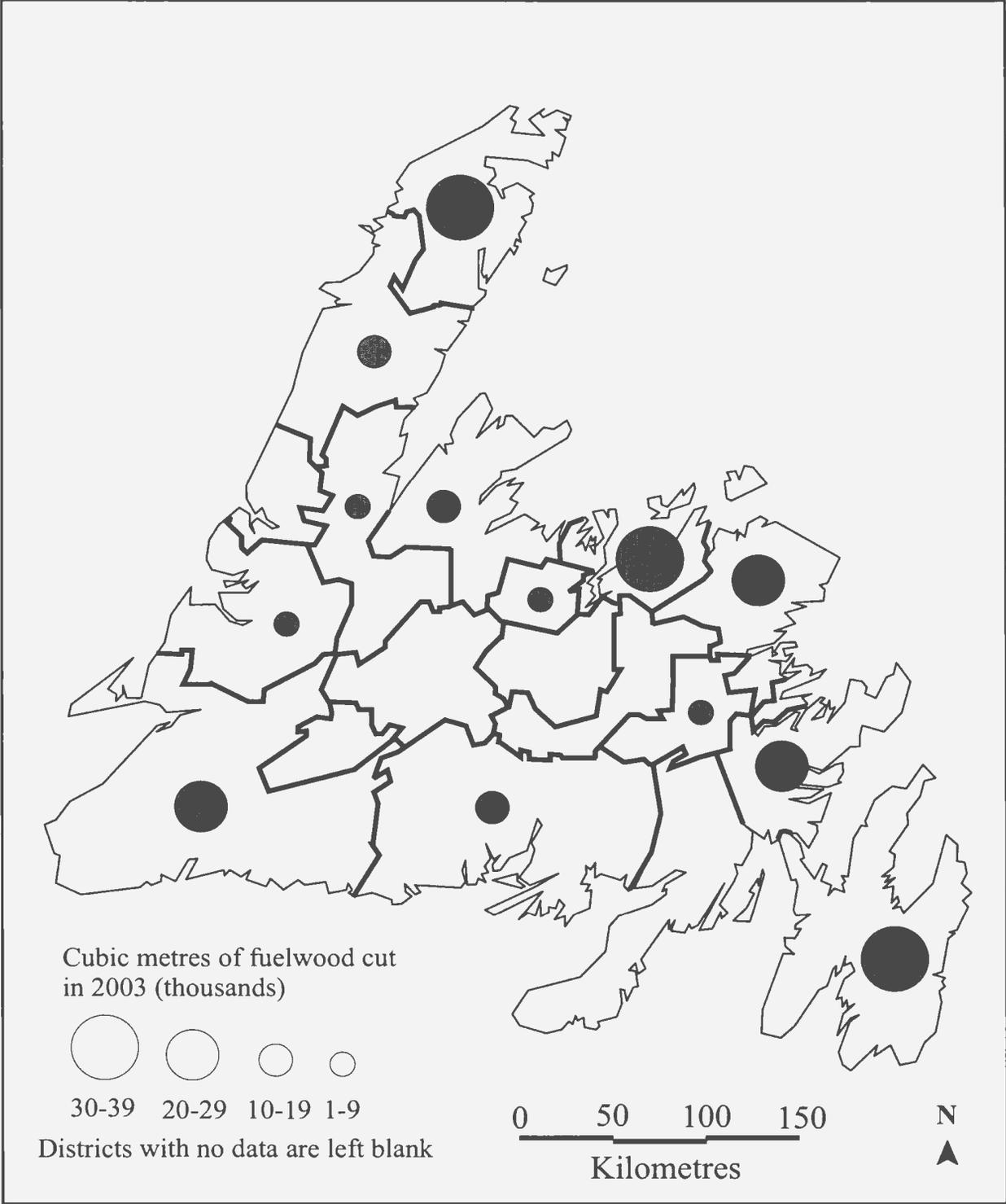
<sup>68</sup> "Consolidated Newfoundland and Labrador Regulation 1008/96 Cutting of Timber Regulations under the Forestry Act (O.C. 96-937) Amended by 54/96 sl 2001 c42 s45 52/02." House of Assembly of Newfoundland and Labrador. 13 January 2005 <<http://www.gov.nl.ca/hoa/regulations/rc961108.htm>>

<sup>69</sup> For example, Omohundro explains that most households on the Northern Peninsula who are burning wood generally use five to ten cords per year. (Omohundro, *Rough Food*, 229).

**Table 6.7**  
**Amount of Wood Gathered for Domestic Fuel in 2003**

<b>District</b>	<b>Softwood Gathered</b>	<b>Hardwood Gathered</b>	<b>Total</b>	<b>Cords</b>
	<b>For Fuel</b>	<b>For Fuel</b>		
	<b>(cubic metres)</b>	<b>(cubic metres)</b>		
<b>1</b>	30,600	0	30,600	8,500
<b>2</b>	27,880	0	27,880	7,744
<b>3</b>	no data	no data	0	0
<b>4</b>	1,550	393	1,943	540
<b>5</b>	24,114	4,855	28,969	8,047
<b>6</b>	no data	no data	0	0
<b>7</b>	14,179	0	14,179	3,939
<b>8</b>	27,451	10,834	38,285	10,635
<b>9</b>	10,574	0	10,574	2,937
<b>10</b>	1,000	0	1,000	278
<b>11</b>	no data	no data	0	0
<b>12</b>	no data	no data	0	0
<b>13</b>	0	0	0	0
<b>14</b>	27,133	2,711	29,844	8,290
<b>15</b>	6,390	1,085	7,475	2,076
<b>16</b>	2,431	600	3,031	842
<b>17</b>	15,366	0	15,366	4,268
<b>18</b>	30,491	0	30,491	8,470
<b>Island Total</b>	<b>219,159</b>	<b>20,478</b>	<b>239,637</b>	<b>66,566</b>

Source: "Domestic Harvest m3 by Forest Management District for Nfld and Labrador in 2003" list provided by Bill Wells of the Department of Forestry, March 2005.



**Figure 6.11: Fuelwood cut in various Forest Management Districts in 2003**

Source: Data from “Domestic Harvest m<sup>3</sup> by Forest Management District for Nfld and Labrador in 2003.” Provided by Bill Wells of the Department of Forest Resources.



**Figure 6.12: Sticks of firewood piled outside a house in downtown St. John's. Spring 2003.**



**SAWMAN  
WOODSTOVE**  
Features a 7" flue, holds  
up to 24" logs. Heats up to  
2000 sq. ft. Black.  
(7160520)

**•DROLET•**  
STOVES & FIREPLACES

**699<sup>99</sup>** Each

See this item online at  
[www.kent.ca](http://www.kent.ca)

**Figure 6.13: Recent woodstove advertisement**

Source: December 2004 Kent Advertising flyer. St. John's, Newfoundland

## 6.6 Summary

As firewood resources became limited through population growth and harvesting, residents of Newfoundland turned to other fuel sources to meet their heating and cooking needs. The first of these was coal, which was imported to Newfoundland during the early nineteenth century, if not earlier. During the nineteenth century, coal imported for commercial and manufacturing uses was not distinguished from that used in a domestic context. However, beginning in 1905, coal for domestic use was differentiated from coal used for other purposes, and in general, the quantities imported increased steadily throughout the next thirty years.

Electricity was another fuel that gradually began to replace wood during the twentieth century. Although many rural communities on the island did not have electrical service before 1950, St. John's residents could have electricity in their homes by the beginning of the century, and inhabitants of the communities around Conception Bay had the option not long after. The first electricity was used only for lighting purposes, but by the 1920s, electrical heating and cooking appliances were being advertised. Oil was another fuel that replaced wood in many homes, and its use was common around 1950.

Despite these alternate fuel sources, numerous Newfoundland residents continued to rely primarily on wood to heat their homes, and many still do so today. Although wood fuel for cooking is rare, wood-burning heating stoves, furnaces, and fireplaces were heating many Newfoundland homes at the beginning of the twenty-first century. Some residents

still continue the custom of cutting sticks of wood from the surrounding forests each year, while others choose to buy pre-cut wood or mill ends from a local supplier. In both options, the forests are still providing a subsistence resource that is warming the homes of the island, making life in Newfoundland feasible.

## CHAPTER SEVEN

### CONCLUSIONS

#### 7.1 Introduction

Fuel wood gathered from local forests has played a crucial role in the resettlement of North America by European immigrants, and the island of Newfoundland is no exception. Fuel wood shortages occurred in many parts of the continent, and these were often the result of clearing land for agriculture and towns.<sup>1</sup> Newfoundland also experienced firewood shortages. Although little land was cleared for agriculture, the fishery infrastructure was made almost entirely of local wood, and fuel wood requirements also put significant pressure on the forests. These shortages affected the ability of residents to utilize the local forest resources to meet a fundamental need for heat. The Newfoundland climate necessitated that buildings be warmed for much of the year, and other essential tasks, such as washing clothing and cooking food, also needed a supply of heat. Throughout much of the history of the island, inhabitants have relied on local forests to meet this need, and fuel wood shortages had the potential to compromise their ability to do so.

#### 7.2 Fuel Wood Shortages

Of the three types of shortages identified in chapter two (site, access, and consumption shortages), *access shortages* are the only type that historically do not appear to have

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<sup>1</sup> Williams, *Americans and Their Forests*; Perlin, *A Forest Journey*; Brewer, *From Fireplace to Cookstove*.

played a significant role in the Newfoundland context. These shortages occurred when a sufficient supply of wood was available, but for reasons of either physical or legal barriers, residents did not have access to the supply. There could potentially have been problems gaining access to firewood during the summer months when transportation was difficult over the bogs and swamps of Newfoundland. However, the fishing industry left little time for gathering firewood in the summer, and wood was both harvested and hauled during the winter, when the snow cover and frozen ponds and bogs made the task much easier. There were also no legislative restrictions that impeded access to firewood, and the land ownership characteristics of Newfoundland rarely caused shortages. Much of Newfoundland is crown land, and residents were allowed to harvest wood for fuel and for fishery purposes on this land. Thus, there was little in the way of property rights that hindered the residents' access to wood. From early in the twentieth century the increasing tendency on the part of the government to rent wide areas of crown land to timber corporations has caused access shortages in some areas, but for much of this time, forests within three miles of the coastline were reserved for fuel wood and fishery needs, and timber leases were not problematic.

*Site shortages*, where a region does not have an abundance of wood to start with, appear to have played a role in Newfoundland, particularly affecting outport communities. Since these communities were often located on islands and peninsula headlands in order to be near the fishing grounds, they were not always situated in areas of abundant and continuing firewood supplies. These islands and headlands not only provided a restricted

land area from which wood could be collected, but they were also often naturally barren of trees. Even those coastal areas with forest cover generally had small trees, since tree size tends to diminish towards to the coast, where growth is hindered by wind and fog.<sup>2</sup> Many of the outport communities that were practicing winterhousing did so because of *site shortages*, among other reasons. The residents moved inland each winter to seek shelter and firewood in more well-forested locations.

*Consumption shortages* were also present on some parts of the island. St. John's and the Conception Bay area were two main areas of *consumption shortages*, since they had large population centres. Thus, in these areas, the population exhausted the nearby wood supplies, both through the use of wood fuel and through harvesting wood for the needs of the fishery. These shortages have been mentioned in the various seventeenth and eighteenth century records to which Head refers.<sup>3</sup> Consumption shortages made it necessary to bring in wood from areas on the periphery of the communities, and to import coal as an alternate fuel source.

Although much of the population of Newfoundland was facing fuel wood shortages from time to time, this does not seem to have been the desperate situation that Brewer has portrayed in the United States.<sup>4</sup> Newfoundland residents found ways of dealing with these fuel wood shortages. In larger communities, this was accomplished by importing

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<sup>2</sup> Head, *Eighteenth Century Newfoundland*, 46, Damman, "Ecological subdivision of Newfoundland," 177.

<sup>3</sup> Head, *Eighteenth Century Newfoundland*, 19, 150.

<sup>4</sup> Brewer, *From Fireplace to Cookstove*, 28, 31-2, 38-9.

firewood and coal from elsewhere. Fishermen and farmers on the outskirts of St. John's cut firewood to sell to city residents,<sup>5</sup> and some organizations, like the military garrison in St. John's, commissioned individuals to procure and deliver firewood for them.<sup>6</sup> The need to import firewood must have increased the price of the product for consumers, but there is no reference to either extreme shortages or to prohibitively high prices of fuel wood in Newfoundland. Coal was also imported for domestic use from the early nineteenth century, if not earlier, and the use of coal for heating and cooking grew over time, becoming a common fuel in many outport communities during the twentieth century.

Although importing firewood and coal provided a solution for urban residents, much of the population of the island during the eighteenth and nineteenth centuries coped with fuel wood shortages through the process of winterhousing.<sup>7</sup> The Newfoundland situation is unique in this way, from much of the rest of North America. Land in Newfoundland was generally not granted in large lots or in systematic settlement schemes as it was in Ontario or the Prairie Provinces, for example. The Newfoundland population thus had access to much not privately owned, unoccupied crown land into which they could expand their firewood gathering practices. When Newfoundland residents practiced winterhousing as a means of alleviating fuel wood shortages, they were not intruding on the land of others, since the land they resided on each winter belonged to the crown.

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<sup>5</sup> Aly O'Brien, interview by author, 28 May, 2003, St. John's, Newfoundland.

<sup>6</sup> *The Newfoundlander* 6 February 1828.

<sup>7</sup> Smith, "In Winter Quarters;" Smith, "Transhumance in Atlantic Canada."

Government legislation protected Newfoundlanders' use of forests for fuel and the fishery by passing acts that did not allow logging operations to harvest wood within three miles of the coast line.<sup>8</sup> This protected forests along the coast for the use of inhabitants of the area. Even the lands leased to timber companies came with the provision that residents still be allowed to use trees on the land for purposes of firewood and the fishery.<sup>9</sup> Although many Newfoundland communities exhausted the fuel wood supplies in their immediate vicinity, there was plenty of other unoccupied and unregulated forest from which citizens could gather firewood. Residents made use of this extra forest space through winterhousing. The ability to do this appears to have been an important factor in alleviating fuel wood shortages in rural Newfoundland.<sup>10</sup> Newfoundland fuel wood shortages apparently never became desperately severe, and a primary reason behind this appears to have been citizens' ability to use the crown land of the island for their wood needs.

The population of Newfoundland grew substantially with the immigration increase of the late eighteenth and early nineteenth centuries.<sup>11</sup> Although community size did expand, the spread of communities along the coast of the island also absorbed many members of the rapidly growing population. Prior to 1800, permanent settlement in Newfoundland

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<sup>8</sup> There are numerous references to this in the Acts, the first being *An Act to Restrict the Erection of Saw Mills upon Timber Limits within three miles of the Coast line of this Colony and better to preserve such Timber Lands for the purpose of the Fishery, for Shipbuilding, for Fencing, and for firewood. Statutes of Newfoundland 1906.* c. 28. 10 May 1906.

<sup>9</sup> *An Act respecting Crown Lands, Timber, Mines and Minerals. Statutes of Newfoundland 1903.* c. 6. 20 May 1903.

<sup>10</sup> Smith "Transhumance in Atlantic Canada," 82-3; Smith, "In Winter Quarters," 16, 18, 21-22.

<sup>11</sup> Mannion, introduction in *Peopling of Newfoundland*, 5.

only reached as far westward as Notre Dame Bay,<sup>12</sup> and with the coming of immigrants, as well as natural increase in the population, permanent communities sprang up around the island in areas that had not previously had European residents. The nature of the fishery made it necessary that all fishermen have direct access to the harbour shoreline for unloading and curing fish, and this restricted community size to some extent. Thus, the population was spread out along the coast of Newfoundland, with the result that pressure on forests resources was distributed over the island, reducing the demands in any particular area.

### **7.3 Heating and Cooking Technology**

Prior to the nineteenth century, the wood-burning open hearth was the primary means of heating and cooking in Newfoundland homes. Even with the introduction of cast iron stoves at the beginning of the nineteenth century, the open hearth was still common until mid-century, and still in use until the 1870s. Although cast iron stoves were in use in continental Europe as early as the fifteenth century, they were not introduced to the United Kingdom until the early nineteenth century.<sup>13</sup> Thus, when seventeenth and eighteenth century immigrants from the United Kingdom settled in Newfoundland, they brought with them the open hearth technology that was common in their homeland at the time. These inefficient open hearths were the primary means by which Newfoundland residents turned the local forest resources into the heat they needed for survival.

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<sup>12</sup> Mannion, introduction in *Peopling of Newfoundland*, 1,6.

<sup>13</sup> David De Haan, *Antique household gadgets and appliances, c. 1860 to 1930* (Poole: Blandford Press, 1977), 1.

Wood burning stoves were introduced to Newfoundland prior to 1810, when they appear in newspaper advertisements. Both heating and cooking stoves appear at this time. Although references to cast iron wood burning stoves occur early in the nineteenth century, stoves were not immediately adopted for use by the general Newfoundland public. It was not until the mid-nineteenth century that wood stoves became common in the homes of the island, replacing the open hearth as the main means of heating and cooking. As late as 1870, a few residents were still using an open hearth for cooking upon. The introduction of stoves in at least some outport communities was significantly later than in St. John's, with some communities first acquiring stoves in the 1860s.<sup>14</sup> However, merchants in some outport communities were selling stoves and stove products in the 1830s and 40s, indicating that cast iron stove technology was available to, and being used by, residents of at least some settlements during the first half of the nineteenth century. Sales of stoves and associated stove products were more frequent in the 1870s, signifying that stoves were more common in the outport communities by this time. The cast iron stove became the most common method of heating and cooking in outport homes of the island, until electricity and gas began to replace wood and coal as the principle fuel sources, a transition that began early in the twentieth century but was not widespread until mid century

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<sup>14</sup> David Mills, "Folk Architecture in Trinity Bay," 83; David Mills, interview by author, 24 November 2004, St. John's, Newfoundland.

The introduction of cast iron stoves never completely replaced the open fire. Fireplaces remained a mode of heating in both outports and larger urban centres throughout the nineteenth and twentieth centuries, and numerous fireplace implements were both advertised and sold in Newfoundland throughout this time. Most outport homes had both a cook stove, for cooking and heating on a daily basis, and a heating stove or fireplace that was used for additional heat on important occasions, such as when an honoured visitor arrived or when a household member was sick. Today some residents continue to use a fireplace to supplement other forms of heating in their homes, and wood is the fuel most commonly used.

Cast iron stoves were imported to the island from the United Kingdom, continental Europe, the United States, Nova Scotia, New Brunswick, and Quebec. Prior to 1857, all stoves on the island were imported, but the New Angel Foundry, later to become the UNF, began manufacturing stoves in St. John's in this year, and soon several other foundries in the city also manufactured the appliances. Cast iron wood and coal burning stoves for heating and cooking were produced by the thousands by the New Angel Foundry and its successor companies, and dozens of employees worked for the firm. Stoves produced by the firm were sold to merchants in various locations around the island, and it was these merchants who took care of advertising and distributing the stoves to the end users.

There is little evidence that fuel wood shortages influenced the decision of Newfoundlanders to adopt the heating and cooking technology of cast iron stoves. Two newspaper advertisements specifically mention that particular stoves save fuel<sup>15</sup> and several advertisements list the “economy” of their stoves.<sup>16</sup> However, in general, the advertisements recommend stoves based on their inexpensive prices and their solid construction. Mills’ field research in the Trinity Bay area uncovered another property of cast iron stoves that seems to have been a significant incentive enticing people to purchase one: the more effective heating abilities of stoves in comparison with open fires.<sup>17</sup> The ability to cook meals more easily on a stove and the social status of owning a stove have also been mentioned in connection with the introduction of cast iron stoves in Newfoundland.<sup>18</sup>

Cast iron wood stoves appear to have been introduced at an opportune time. Just as stoves were becoming available in outports across the island, citizens were finding the prospect of staying in outport communities throughout the winter more attractive due to the establishment of churches and schools in the communities.<sup>19</sup> Thus, they would perhaps have been looking for means of staying in the outports just at the time when stoves helped to give them that means. Because cast iron stoves were more fuel efficient than the open hearth, less fuel wood was needed to heat and cook for a family, and thus

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<sup>15</sup> *Trinity Enterprise* 29 March 1909; *Harbor Grace Standard* 4 January 1860.

<sup>16</sup> *Star and Conception Bay Journal* (Carbonear) 3 October 1838; *Harbor Grace Standard* 3 October, 1860.

<sup>17</sup> David Mills, interview by author, 24 November 2004, St. John's, Newfoundland.

<sup>18</sup> Canifer, “The Days of Dog Irons,” 4.

<sup>19</sup> Smith, “In Winter Quarters,” 24.

winterhousing was not as critical as it had once been. Wood stoves allowed the population to use less firewood.<sup>20</sup> An increased number of horses and oxen, and in the twentieth century, motor boats, allowed residents to haul wood further distances,<sup>21</sup> and they could therefore remain residing in outports while gathering their firewood from others areas that had more prodigious forest resources, or had not yet been depleted of wood supplies. These factors all combined to allow the Newfoundland population to continue using wood fuel longer than they perhaps otherwise might have. Wood burning stoves seem to have helped the population continue using a subsistence resource to meet their heating and cooking needs. As well, cast iron stoves and fireplace grates allowed the population to burn coal, something which could not be done in an open hearth without the use of a cast iron grate. Perhaps this coal-burning ability of these stoves also helped residents to remain in their outport homes during the winter.

#### **7.4 Alternate Fuel Sources**

Wood was still used by much of the population of the island at the beginning of the twentieth century, but some residents were obviously using other forms of fuel, particularly coal. Coal was available for domestic purposes on the island as early as 1810. Large quantities of the coal imported to the island were used for commercial purposes and generating electricity. Coal for domestic use accounts for a relatively small amount of the total imports, but nonetheless was becoming an important fuel for the population. Imports of coal for domestic use in outports increased in relation to the

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<sup>20</sup> Ibid., 23.

<sup>21</sup> Smith "Transhumance," 84.

island's population at the same time as the amount of firewood gathered per dwelling decreased. Coal was increasingly becoming a fuel option for residents of the island. Many inhabitants depended upon this new fuel source, and shortages of it were cause for concern. However, a significant portion of the population was still gathering wood for fuel, as is indicated by the census data of 1911 and 1921. Although wood use appears to be decreasing in the first half of the twentieth century, there were still ten and four districts that gathered, in 1910 and 1920, respectively, the average twelve cords per dwelling required to meet a household's annual heating and cooking needs using only a wood burning stove. A couple of urban-dominated districts, such as those around St. John's and Conception Bay, gathered very little firewood, but many others, although harvesting less than twelve cords per dwelling, apparently had many residents who were still using wood for fuel. By the 1960s, oil and electricity took over the Newfoundland fuel market, resulting in a dramatic decline in dependency on wood stoves, although not eliminating wood stoves entirely.

### **7.5 Cast Iron Stove Use in Relation to Fuel Wood Shortages**

Data specifically linking the use of wood-burning stoves to the use of Newfoundland forest resources for fuel is sparse. Although knowledge of stoves' fuel efficient properties existed on the island, there is little evidence to indicate that this itself was a significant factor in residents' decision to purchase a cast iron stove. Based on Smith's findings that the adoption of wood stoves was a significant factor in the decline of

winterhousing,<sup>22</sup> it appears that although residents may not have purchased a wood stove specifically because of its fuel saving properties, a desire to remain in outport communities throughout the winter months convinced residents to purchase a stove that would help allow them to discontinue winterhousing. The improved heating effectiveness of a wood stove as compared with an open hearth also appears to have had influence on the inhabitants' decisions to acquire stoves. Wood-burning stoves perhaps allowed the population of the island to continue using wood fuel longer than they otherwise might have, continuing a dependence on a subsistence resource. The fact that wood was part of the non-cash economy provided extra incentive for residents to continue using wood fuel, particularly since the alternative fuels of coal, oil, and electricity required cash payments. Wood was an integral part of the subsistence rounds, and while the small scale fishing economy continued, wood remained an important staple resource for many Newfoundland inhabitants. Although fuel wood shortages occurred on the island, the population found ways of coping with the situation, and was still able to continue gathering this crucial staple of life from the forests of Newfoundland, a pattern continued by some residents today.

## **7.6 Considerations for Future Research**

The cast iron wood stove, a simple item of material culture, has had broad social and ecological impacts. It was a factor in allowing the population to discontinue winterhousing, a seasonal transhumance that was a widespread element of nineteenth

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<sup>22</sup> Smith, "In Winter Quarters," 23.

century Newfoundland human ecology. Because of its relative efficiency in comparison with the open hearth, the wood stove acted to decrease fuel wood requirements. This decrease may have delayed the adoption of coal or electricity in certain areas, since it allowed the population in many areas to continue using wood fuel at a time when shortages could have occurred due to the extravagant fuel consumption of the open hearth. This ability to continue using wood fuel had a direct impact on the local forests. As well, this reliance on wood fuel was such a vital and integral part of Newfoundland life and culture that it influenced governmental legislation regarding timber companies by protecting forests within three miles of the coastline for use as fuel and in the fishery.

This study has explored the idea of the domestic use of wood and wood stoves as a cultural agent. Further research on the topic could expand upon this in both a historical and a contemporary context. For example, since wood fuel is still significant in the lives and homes of many Newfoundland residents, further research on the topic could increase understanding of future options for domestic heating. Given the dramatic increase in oil prices in 2005, could wood again become an important fuel in more Newfoundland homes? Further historical research might also be conducted. Case studies of specific communities, their local climatic and ecological conditions, and their use of wood would help give a deeper understanding of the topic, in both a historical and a contemporary sense. Further, the relationship between wood stove use and housing design have not been explored here. How did the introduction of wood stoves influence house construction and floorplans? Much work could be done on such topics, creating a greater

understanding of Newfoundland heating practices, their influence on the natural and cultural environments, and the future potential of various heating options.

**APPENDIX ONE:**  
**CALCULATING THE NUMBER OF STICKS REQUIRED**  
**TO MAKE UP ONE CORD OF WOOD**

An investigation of a population's reliance on a subsistence resource leads to the question of exactly how much of a particular resource the population required and consumed. The amount of firewood consumed by Newfoundland residents in the eighteenth and nineteenth centuries has yet to be explored in depth. The following discussion provides a preliminary discourse in that direction.

As mentioned earlier, firewood in Newfoundland is measured in sticks, which are essentially trees with the branches removed (chapter three). Head has defined sticks in the Bonavista area as being of four to eight inches diameter at the butt and twelve to fourteen feet long.<sup>1</sup> Faris mentions comparable averages for Cat Harbour (Lumsden), with sticks six to eight inches in diameter and ten to twelve feet long.<sup>2</sup> Similarly, the 'turns' Mednis mentions Fogo Island residents using for firewood would have been the same as 'sticks,' and he specifies that they are generally "...about eight inches in diameter at the base and about ten to twelve feet long."<sup>3</sup> These estimates of stick size are useful because they associate stick dimensions with particular areas, and because they deal with a useable length of wood, that which was utilized specifically for domestic firewood. They do not include the top portion of a tree, which was too thin for use, and was therefore removed prior to hauling the sticks out of the forests. Thus, it was the dimensions in these estimates that were used to determine how many sticks of wood were required to make up a cord, al-

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<sup>1</sup> C. Grant Head, "Chapter 7: Settlement Migration in Central Bonavista Bay, Newfoundland," in *Canada's Changing Geography*, ed. R. Louis Gentilcore (Scarborough: Prentice-Hall, 1967), 99-100.

<sup>2</sup> James C. Faris, *Cat Harbour: A Newfoundland fishing settlement* (St. John's: Institute of Social and Economic Research MUN, 1973), 31.

though the number would have varied to some extent across the island in relation to tree size in an area. This is a generalized exercise, and in reality each stick is of different dimensions. However, rough averages of stick size are useful for determining approximately how much firewood the Newfoundland population used. In the following calculations, a diameter of six inches is used for each stick. This is the mean of the diameters mentioned, which range from four to eight inches. A length of twelve feet was chosen because it was the mean of the lengths mentioned by the three authors.

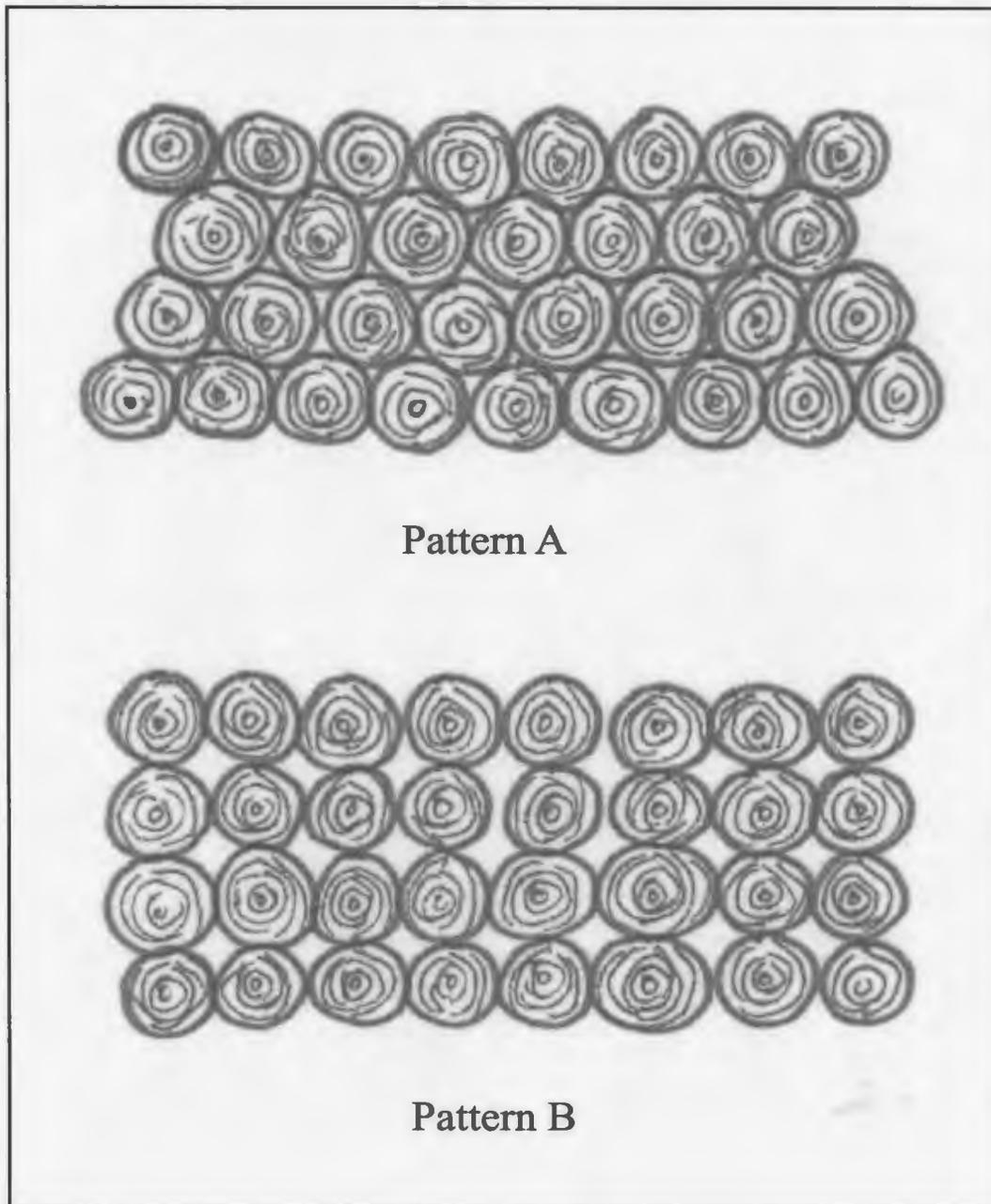
A cord of wood is a stack four feet high, four feet deep, and eight feet wide. There are different ways of stacking wood into a cord, and therefore several different values of the amount of wood a cord could contain. Although a cord in theory contains 128 cubic feet (3.6 cubic metres) of wood, the situation differs in reality, depending on the number and size of air spaces between the stacked pieces of wood. For example, bumpy or crooked sticks of wood will stack irregularly, leaving large spaces between some parts of the sticks. If sticks of wood of varying diameters are stacked together, the smaller ones can fill in the air spaces left between the larger ones, creating a greater density of stacked wood.<sup>4</sup> If sticks are stacked directly on top of and beside each other in straight columns and rows, a cord of wood will contain about thirteen percent less solid wood than if sticks were placed in the 'valleys' between the sticks in the row below (Figure A).<sup>5</sup> With this

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<sup>3</sup> R.J. Mednis *A Phytogeographical analysis of the occurrence of vegetation patterns on Fogo Island, Newfoundland-Labrador, Canada* Ph.D. thesis, Boston University 1971 pp 32-33.

<sup>4</sup> Jay Shelton, *The Woodburners Encyclopedia: An Information Source of Theory, Practice and Equipment Relating to Wood as Energy* (Waitsfield, VT: Vermont Crossroads, 1976), 16.

<sup>5</sup> Ibid.



**Figure A: Two different methods of stacking firewood. Pattern A represents a denser method of stacking, with, on average, a thirteen percent greater volume of wood than is found in Pattern B.**

Source: Adapted from Jay Shelton, *The Woodburners Encyclopedia: An Information Source of Theory, Practice and Equipment Relating to Wood as Energy* (Waitsfield, VT: Vermont Crossroads Press, 1976), 16.

taken into consideration, a cord can contain from sixty to one hundred cubic feet of solid wood.<sup>6</sup>

Head does not specify how the fifteen cords of wood he determined necessary to meet the minimum annual requirements of a Newfoundland household are stacked, leading to some ambiguity in any comparison with this value. However, an approximate value of the number of trees required to make up a cord of wood is still useful, since it directly connects the amount of firewood used (fifteen cords) to the forests of the island. Using a 'nested' method of stacking (Pattern A in Figure A), sticks of a six-inch diameter would have to be piled into nine rows of fifteen to sixteen sticks per row to create a stack of four feet by eight feet (Figure 3.9). This gives a total of 140 sticks in the stack. However, these sticks are three times as long as a cord is deep, and thus the total has to be divided by three. This gives an approximate 47 sticks per cord of wood. If the method of stacking sticks shown in Pattern B of Figure A is used, it takes only 43 sticks to make up a cord of wood. The value of 47 has been used here for two reasons: (1) this is a more logical method of stacking wood, since rounded objects, like sticks, generally do not stay neatly stacked directly on top of each other, and (2) when combined with the number of sticks of firewood listed in censuses, this provides a conservative estimate of the number of cords of wood used by the Newfoundland population (chapter five).

This value of 47 sticks, or 47 trees, per cord of wood is roughly equivalent to values listed in a table provided by the Forestry Department of Iowa State University.<sup>7</sup> The table looks

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<sup>6</sup> Shelton, *The Woodburners Encyclopedia*, 16.

specifically at red and white oak, which would have differed slightly in volume from the fir, spruce, and birch commonly used in Newfoundland. However, there is no reason to believe the differences would have been substantial, particularly since the smaller branches on the oak were not included in the volume. In the table, an entire tree with a twenty-foot height and a six-inch diameter at breast height (4.5 feet above the ground) contains 0.02 cords of useable firewood. Thus, it would take 50 trees to make up a cord of wood. This is very similar to the estimate obtained above of 47 Newfoundland trees required to make a cord of firewood. Although the 20-foot oak at first seems taller than a Newfoundland stick, not all of this would have been useable wood, since the top portion of the tree would be too thin to use. The amount of useable wood in the oak would likely have been similar to that in a Newfoundland stick.

The value of 47 sticks per cords of wood is a very generalized figure, since the size of individual sticks would have varied. However, it provides a method of comparing the amount of firewood used to the number of trees needed to provide that wood. As mentioned earlier (chapter three), based on eighteenth-century figures from soldiers' quarters in St. John's, Head has determined that Newfoundland households used a minimum of fifteen cords of wood annually when heating and cooking with an open hearth.<sup>8</sup> If a Newfoundland family was using Head's conservative fifteen cords per year, they still would have been burning at least 705 sticks per year in their open hearth. That is 705

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<sup>7</sup> Iowa State University Forestry Department website.  
< <http://www.ag.iastate.edu/departments/forestry/ext/pubs/F-338.pdf> > 9 May 2005.

<sup>8</sup> C. Grant Head, "The changing geography of Newfoundland in the eighteenth century" PhD Thesis, University of Wisconsin, 1971, 451

trees that would have had to have been cut from the surrounding forests each year simply to keep one family warm for the year.

**APPENDIX TWO:**  
**NINETEENTH CENTURY POPULATION**  
**AND DWELLING NUMBERS**

**Table A: Nineteenth Century Population of Newfoundland and Labrador**

**Table B: Number of Inhabited Dwellings in Relation to Population Numbers**

**Table A**  
**Nineteenth Century Population of Newfoundland and Labrador**

<b>Year</b>	<b>Population</b>	<b>Year</b>	<b>Population</b>
1803	19,034	1821	47,083
1804	20,380	1822	47,530
1805	21,975	1823	49,503
1806	no data	1824	no data
1807	25,234	1825	55,504
1808	24,625	1826	no data
1809	25,157	1827	53,238
1810	no data	1828	59,101
1811	25,985	1829	59,035
1812	30,772	1830	60,088
1813	32,749	1836	74,993
1814	35,952	1845	96,296
1815	40,568	1857	124,228
1816	41,898	1869	146,536
1817	43,409	1874	161,374
1818	40,854	1884	197,335
1819	40,937	1891	202,040
1820	42,535	1901	220,249

Source: S. Ryan as cited in John J. Mannion, introduction to *The Peopling of Newfoundland*, ed. John J. Mannion (St. John's: Memorial University of Newfoundland, 1977), 13. These population numbers include both the island portion of the province and Labrador.

**Table B**  
**Number of Inhabited Dwellings in Relation to Population Numbers**

<b>Year</b>	<b>Population</b>	<b>Inhabited Dwellings</b>	<b>People Per Dwelling</b>
1836	67,051	10,374	6.64
1845	96,295	no data	no data
1857	122,638	18,334	6.69
1869	144,057	23,084	6.24
1874	159,858	23,896	6.69
1884	193,124	31,008	6.23
1891	198,325	33,644	5.89
1901	217,037	38,950	5.57
1911	238,670	44,740	5.33
1921	259,259	48,104	5.39
1935	284,872	54,198	5.26

Source: Censuses of Newfoundland and Labrador, 1836 to 1935. The number of people per inhabited dwelling was calculated by dividing the population total by the number of inhabited dwellings. The population figures in this table consist only of the residents of the island portion of Newfoundland, which is why the population numbers from 1836 to 1901 differ from those found in Table 4.1, which includes both the island and Labrador.<sup>1</sup>

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<sup>1</sup> The censuses list population and dwelling numbers for each community, totals for each enumeration district, and finally a total for the entire island. Some discrepancy exists among these figures. Occasionally, the sum of the district totals differs from that given for the entire island. Some censuses list district and island totals from the previous census for comparison, and at times, these previous totals are not the same as those actually printed in the previous census. Also, some censuses give only district totals, and not island totals. Thus, there are occasionally several different population figures for any given census year, although the variation between these different figures is quite small. Because some years required that an island total be derived by summing the district totals, this method was used for all years to maintain consistency. Thus, for the years in which the island total in the census differed from the sum of the district totals, it is the sum that has been used.

### **APPENDIX THREE:**

#### **UNITED NAIL AND FOUNDRY STOVE SALES DATA**

**Table C: Stoves sold by the UNF to various merchants in 1886**

**Table D: Stoves sold by the UNF to various merchants in 1887**

**Table E: Stoves sold by the UNF to various merchants in 1896**

**Table F: Stoves sold by the UNF to various merchants in 1897**

**Table G: Stoves sold by the UNF to various merchants in 1906**

**Table H: Stoves sold by the UNF to various merchants in 1907**

**Table I: Stoves sold by the UNF to various merchants in 1916**

**Table J: Stoves sold by the UNF to various merchants in 1917**

**Table C**  
**Stoves sold by the UNF to various merchants in 1886**

<b>Merchant</b>	<b>Heating</b>	<b>Cooking</b>	<b>Other</b>	<b>Total</b>
	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>
Allen, H	7	26	10	43
Andrews, Robt	1	1	1	3
Avalon Foundry Co	0	0	3	3
Callahan, R	53	164	46	263
Collins, Wm J	0	10	5	15
Cooper, Joseph	7	7	2	16
Gear and Co	48	142	103	293
Gushue, F	40	74	15	129
Goudie & Diamond	98	156	36	290
Hunt, Wm	1	12	4	17
Kennedy, CL	25	26	23	74
Malcolm, Wm	12	8	7	27
Monroe, M	4	8	4	16
McCoubrey & Clouston	65	91	37	193
Norris, JW	5	12	1	18
Peace & Co	32	94	38	164
Pennock, JW	6	53	3	62
Pippy, Wm G	17	36	11	64
Sarissere, Mons.	7	0	0	7
Strathie	7	9	4	20
<b>Total</b>	<b>435</b>	<b>929</b>	<b>353</b>	<b>1717</b>

**Table D**  
**Stoves sold by the UNF to various merchants in 1887**

<b>Merchant</b>	<b>Heating</b>	<b>Cooking</b>	<b>Other</b>	<b>Total</b>
	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>
Allen, H	0	1	0	1
Andrews, Robt	0	0	0	0
Avalon Foundry Co	0	0	0	0
Callahan, R	65	122	31	218
Collins, Wm J	4	8	10	22
Cooper, Joseph	0	0	0	0
Gear and Co	103	137	101	341
Gushue, F	33	54	19	106
Goudie & Diamond	124	210	61	395
Hunt, Wm	16	24	6	46
Kennedy, CL	34	29	37	100
Malcolm, Wm	5	7	6	18
Monroe, M	0	2	0	2
McCoubrey & Clouston	46	125	38	209
Norris, JW	7	3	3	13
Peace & Co	83	124	60	267
Pennock, JW	10	33	12	55
Pippy, Wm G	18	55	14	87
Sarissere, Mons.	0	0	0	0
Strathie	0	0	0	0
<b>Total</b>	<b>548</b>	<b>934</b>	<b>398</b>	<b>1880</b>

**Table E**  
**Stoves sold by the UNF to various merchants in 1896**

<b>Merchant</b>	<b>Heating</b>	<b>Cooking</b>	<b>Other</b>	<b>Total</b>
	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>
Brien	2	23	2	27
Bulger	0	0	0	0
Callahan, R	66	134	64	264
Cash	4	1	1	6
Clouston, John	0	0	0	0
Clouston, WJ	137	160	79	376
Diamond, L	152	247	92	491
Facey, S	3	6	2	11
Gear and Co	114	152	82	348
Gordon, Geo	3	0	0	3
Goudie	38	92	11	141
Gushue, F	25	53	15	93
Jackman, D	0	0	0	0
Janes, A	0	0	0	0
Kennedy, CL	12	13	8	33
Lawrence, J	2	3	0	5
Malcolm, Wm	4	10	2	16
Maher, R	0	0	0	0
Mahoney & Guinan	0	0	0	0
McCoubrey, G	51	57	31	139
McCoulney, A	0	0	0	0
Miles, L	0	0	0	0
Moakler, T	0	0	0	0
Norris, JW	2	3	1	6
Pennock, JW	39	65	61	165
Pippy, Wm G	46	78	38	162
Phillips, J	2	0	0	2
Prowse, W	1	1	0	2
Ruby, K	0	0	0	0
Sheehan	0	0	0	0
Stafford, W	0	0	0	0
Woods, AJ	0	0	0	0
<b>Total</b>	<b>703</b>	<b>1098</b>	<b>489</b>	<b>2290</b>

**Table F**  
**Stoves sold by the UNF to various merchants in 1897**

<b>Merchant</b>	<b>Heating</b>	<b>Cooking</b>	<b>Other</b>	<b>Total</b>
	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>
Brien	1	12	4	17
Bulger	0	0	0	0
Callahan, R	87	43	49	179
Cash	0	38	0	38
Clouston, John	7	0	0	7
Clouston, WJ	97	126	73	296
Diamond, L	101	143	99	343
Facey, S	6	7	7	20
Gear and Co	86	108	57	251
Gordon, Geo	0	0	0	0
Goudie	34	75	23	132
Gushue, F	13	31	12	56
Jackman, D	23	47	13	83
Janes, A	0	0	0	0
Kennedy, CL	2	12	3	17
Lawrence, J	5	3	3	11
Malcolm, Wm	3	9	5	17
Maher, R	0	0	0	0
Mahoney & Guinan	0	0	0	0
McCoubrey, G	34	53	24	111
McCoulney, A	0	0	0	0
Miles, L	0	0	0	0
Moakler, T	0	0	0	0
Norris, JW	1	2	0	3
Pennock, JW	23	47	15	85
Pippy, Wm G	49	59	43	151
Phillips, J	0	0	0	0
Prowse, W	1	0	2	3
Ruby, K	0	0	0	0
Sheehan	0	0	0	0
Stafford, W	0	0	0	0
Woods, AJ	0	0	0	0
<b>Total</b>	<b>573</b>	<b>815</b>	<b>432</b>	<b>1820</b>

**Table G**  
**Stoves sold by the UNF to various merchants in 1906**

<b>Merchant</b>	<b>Heating</b>	<b>Cooking</b>	<b>Other</b>	<b>Total</b>
	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>
Brien	6	51	10	67
Bulger	1	0	0	1
Callahan, R	46	163	43	252
Cash	1	5	3	9
Clouston, John	48	47	1	96
Clouston, WJ	445	445	111	1001
Diamond, L	154	233	63	450
Facey, S	31	43	7	81
Gear and Co	334	407	97	838
Gordon, Geo	44	65	10	119
Goudie	0	0	0	0
Gushue, F	4	24	4	32
Jackman, D	14	17	12	43
Janes, A	0	0	0	0
Kennedy, CL	28	33	7	68
Lawrence, J	29	32	12	73
Malcolm, Wm	3	1	1	5
Maher, R	2	13	2	17
Mahoney & Guinan	0	0	0	0
McCoubrey, G	55	67	14	136
McCoulney, A	7	9	1	17
Miles, L	3	1	1	5
Moakler, T	0	0	0	0
Norris, JW	9	1	0	10
Pennock, JW	68	142	36	246
Pippy, Wm G	102	157	49	308
Phillips, J	72	109	7	188
Prowse, W	3	1	2	6
Ruby, K	0	0	0	0
Sheehan	1	0	0	1
Stafford, W	0	0	0	0
Woods, AJ	18	17	5	40
<b>Total</b>	<b>1528</b>	<b>2083</b>	<b>498</b>	<b>4109</b>

**Table H**  
**Stoves sold by the UNF to various merchants in 1907**

<b>Merchant</b>	<b>Heating</b>	<b>Cooking</b>	<b>Other</b>	<b>Total</b>
	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>
Brien	4	25	11	40
Bulger	0	0	0	0
Callahan, R	67	210	71	348
Cash	0	0	0	0
Clouston, John	24	66	20	110
Clouston, WJ	450	428	200	1078
Diamond, L	186	254	74	514
Facey, S	17	22	6	45
Gear and Co	237	413	97	747
Gordon, Geo	45	54	23	122
Goudie	0	0	0	0
Gushue, F	5	10	7	22
Jackman, D	29	28	13	70
Janes, A	0	0	0	0
Kennedy, CL	22	23	20	65
Lawrence, J	21	32	31	84
Malcolm, Wm	1	3	2	6
Maher, R	4	5	2	11
Mahoney & Guinan	2	1	6	9
McCoubrey, G	20	25	7	52
McCoulney, A	3	2	1	6
Miles, L	2	1	3	6
Moakler, T	0	0	0	0
Norris, JW	1	1	0	2
Pennock, JW	68	132	28	228
Pippy, Wm G	81	152	32	265
Phillips, J	49	106	19	174
Prowse, W	5	5	0	10
Ruby, K	0	0	0	0
Sheehan	0	0	0	0
Stafford, W	0	0	0	0
Woods, AJ	16	40	32	88
<b>Total</b>	<b>1359</b>	<b>2038</b>	<b>705</b>	<b>4102</b>

**Table I**  
**Stoves sold by the UNF to various customers in 1916**

<b>Merchant</b>	<b>Heating</b>	<b>Cooking</b>	<b>Other</b>	<b>Total</b>
	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>
Brien	4	16	2	22
Bulger	0	0	0	0
Callahan, R	93	219	43	355
Cash	4	1	1	6
Clouston, John	39	48	22	109
Clouston, WJ	267	349	96	712
Diamond, L	127	163	66	356
Facey, S	10	33	10	53
Gear and Co	205	314	47	566
Gordon, Geo	5	10	4	19
Goudie	0	0	0	0
Gushue, F	4	5	0	9
Jackman, D	32	20	7	59
Janes, A	2	3	0	5
Kennedy, CL	3	4	2	9
Lawrence, J	4	5	13	22
Malcolm, Wm	0	0	0	0
Maher, R	9	27	1	37
Mahoney & Guinan	21	15	15	51
McCoubrey, G	0	0	0	0
McCoulney, A	7	2	1	10
Miles, L	0	0	0	0
Moakler, T	0	1	1	2
Norris, JW	0	0	0	0
Pennock, JW	43	92	10	145
Pippy, Wm G	72	98	11	181
Phillips, J	30	52	4	86
Prowse, W	0	0	0	0
Ruby, K	29	13	4	46
Sheehan	6	7	3	16
Stafford, W	5	2	0	7
Woods, AJ	17	38	16	71
<b>Total</b>	<b>1038</b>	<b>1537</b>	<b>379</b>	<b>2954</b>

**Table J**  
**Stoves sold by the UNF to various merchants in 1917**

<b>Merchant</b>	<b>Heating</b>	<b>Cooking</b>	<b>Other</b>	<b>Total</b>
	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>	<b>Stoves Sold</b>
Brien	2	10	4	16
Bulger	0	0	0	0
Callahan, R	95	226	44	365
Cash	2	2	1	5
Clouston, John	28	18	10	56
Clouston, WJ	264	359	100	723
Diamond, L	120	214	66	400
Facey, S	21	43	6	70
Gear and Co	122	180	41	343
Gordon, Geo	1	4	0	5
Goudie	0	0	0	0
Gushue, F	1	7	3	11
Jackman, D	21	18	5	44
Janes, A	0	1	0	1
Kennedy, CL	0	8	0	8
Lawrence, J	2	6	8	16
Makolm, Wm	0	0	0	0
Maher, R	19	23	20	62
Mahoney & Guinan	16	24	6	46
McCoubrey, G	0	0	0	0
McCoulney, A	1	1	0	2
Miles, L	0	0	0	0
Moakler, T	0	0	0	0
Norris, JW	0	0	0	0
Pennock, JW	56	104	17	177
Pippy, Wm G	71	110	10	191
Phillips, J	16	62	6	84
Prowse, W	0	0	0	0
Ruby, K	25	20	3	48
Sheehan	8	4	1	13
Stafford, W	6	15	6	27
Woods, AJ	2	21	15	38
<b>Total</b>	<b>899</b>	<b>1480</b>	<b>372</b>	<b>2751</b>

**APPENDIX FOUR:**  
**TABLES OF COAL IMPORTS**

**Table K: Total imports of coal to Newfoundland, 1836-1934**

**Table L: The amount of domestic coal imported compared with the total amount of coal imported, 1905-1934**

**Table K**  
**Total imports of coal to Newfoundland, 1836-1934.**

<b>Year</b>	<b>Coal Imported (tons)</b>	<b>Year</b>	<b>Coal Imported (tons)</b>	<b>Year</b>	<b>Coal Imported (tons)</b>
1836	9,973	1869	39,980	1902	109,728
1837	11,588	1870	39,748	1903	133,335
1838	14,338	1871	44,527	1904	163,850
1839	no data	1872	45,058	1905	168,817
1840	13,019	1873	47,643	1906	173,327
1841	no data	1874	52,310	1907	179,122
1842	14,268	1875	59,353	1908	197,966
1843	17,442	1876	56,013	1909	196,274
1844	17,738	1877	no data	1910	220,193
1845	18,466	1878	70,363	1911	243,395
1846	23,337	1879	66,556	1912	257,848
1847	17,804	1880	76,881	1913	289,451
1848	19,756	1881	68,129	1914	no data
1849	no data	1882	79,553	1915	254,583
1850	16,799	1883	72,879	1916	278,203
1851	20,131	1884	87,075	1917	268,876
1852	23,519	1885	75,057	1918	225,275
1853	23,992	1886	75,398	1919	256,019
1854	22,267	1887	82,342	1920	309,022
1855	19,696	1888	82,782	1921	324,094
1856	7,635	1889	81,066	1922	223,300
1857	40,243	1890	87,578	1923	247,120
1858	35,257	1891	97,327	1924	333,437
1859	37,633	1892	58,590	1925	332,672
1860	no data	1893	89,939	1926	340,999
1861	43,028	1894	94,960	1927	346,791
1862	37,494	1895	76,120	1928	no data
1863	38,020	1896	88,223	1929	359,900
1864	39,109	1897	no data	1930	434,074
1865	35,509	1898	94,904	1931	no data
1866	40,467	1899	99,250	1932	no data
1867	40,274	1900	no data	1933	208,801
1868	42,839	1901	98,903	1934	290,074

**Table L**  
**The amount of domestic coal imported compared with the total amount of coal imported,**  
**1905-1934.**

<b>Year</b>	<b>Total Coal Imported (tons)</b>	<b>Total Domestic Coal Imported (tons)</b>	<b>Percent Domestic Coal</b>
1905	168,817	163,963	97.1
1906	173,429	102,826	59.3
1907	179,122	109,424	61.1
1908	197,966	27,757	14.0
1909	196,275	27,179	13.8
1910	220,193	29,286	13.3
1911	243,398	32,104	13.2
1912	257,848	37,728	14.6
1913	289,451	46,112	15.9
1914	301,183	46,209	15.3
1915	254,583	40,047	15.7
1916	278,203	39,041	14.0
1917	268,876	46,458	17.3
1918	225,275	31,171	13.8
1919	256,019	37,177	14.5
1920	309,022	53,907	17.4
1921	324,094	37,658	11.6
1922	223,300	35,269	15.8
1923	247,120	29,162	11.8
1924	333,437	67,960	20.4
1925	332,672	86,786	26.1
1926	340,999	101,786	29.8
1927	346,791	85,281	24.6
1928	no data	no data	no data
1929	359,900	47,855	13.3
1930	434,074	93,316	21.5
1931	no data	no data	no data
1932	no data	no data	no data
1933	208,801	115,674	55.4
1934	290,074	123,927	42.7

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