Along the south shore of the St. Lawrence River a series of massive dikes 5 meters in height and nearly 27 kilometres in length, called *aboiteaux* in the local patois, stretch along the coast of Kamouraska, Quebec. Through an interdisciplinary approach combining historical geography and paleoecology, the book explains the fascinating origins of these marshland dikes, and their vital role in the modernisation of Quebec. In a novel approach, *Marshlands* also makes a vital contribution towards amending the prevailing understanding of the place of humans in the environment. In the past 150 years more than half of the salt marshes of the St. Lawrence Estuary have disappeared. Too often, this tragic loss of vital habitat has been portrayed as a result solely of human ignorance and greed. Such an interpretation is thoroughly debunked as the author weaves his way through the centuries explaining the commonalities and conflicting perceptions in how Amerindians, French colonists, agricultural improvers and modern ecologists all viewed the St. Lawrence marshlands as central to their survival. The study illustrates the necessity of an historical geography approach towards any understanding of the place of humans in their environment.

Matthew G. Hatvany is professor of Historical Geography at the Université Laval.
MARSHLANDS
FOUR CENTURIES OF ENVIRONMENTAL CHANGE ON THE SHORES OF THE ST. LAWRENCE

Les Presses de l’Université Laval
Sainte-Foy, 2003
CONTENTS

FIGURES xiii
TABLES xvii
PREFACE xix

INTRODUCTION

HISTORY AND ENVIRONMENTAL CHANGE 1
An Environmental Historical Geography 3
Geographical Setting 4
Historical Setting 7
A Malthusian Dilemma 8
Tradition or Modernity? 11
Methodology and Outline 13

CHAPTER 1

THE SALT-MARSH ECOSYSTEM 15
The Marshland Milieu of the St. Lawrence 15
Salt-Marsh Geomorphology 16
The Dominant Marsh Plant Species 17
Lowlands, Highlands and Shield 20
The Intertidal Zone 23
Marsh Productivity 24

CHAPTER 2

MARSHLAND COGNISANCE 29
The Origins of Marsh Exploitation 29
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>AMERINDIAN AND AGRARIAN CONTEXTS</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>Pre-historic Marsh Utilisation</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>Early French Exploitation of the Marshes</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Marshland Pasture and Fodder</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Harvesting Salt-Marsh Hay</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Marsh Hay in the Early Nineteenth Century</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Marsh Hay as a Supplement</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Frontland – Backland Stratification</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Salt Hay as a Marketable Image</td>
<td>71</td>
</tr>
<tr>
<td>4</td>
<td>A MALTHUSIAN DILEMMA</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Demographic Pressure</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>Traditional Response</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>Modern Response</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>Agricultural Reform</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>Canada’s First Permanent Agricultural School</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Local, Regional, and International Influences</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Diffusing Scientific Agriculture</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>Tradition and Modernity</td>
<td>89</td>
</tr>
<tr>
<td>5</td>
<td>THE DREAM OF MARSH CONQUEST</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>J.-D. Schmouth Comes to Kamouraska</td>
<td>93</td>
</tr>
</tbody>
</table>
Early Drainage and Diking Activity 96
Modern Drainage in America 99
Kamouraska’s First Modern Aboiteau 100
Constructing an Aboiteau 102
Nineteenth-Century Ambitions 106
The Socioeconomic Impact of the Early Aboiteaux 108

CHAPTER 6
FULFILLING THE DREAM 109
Horace Miner Comes to Kamouraska 109
“Bottom-Up” Diffusion 111
Governmental Aid 117
Mechanised Aboiteau Construction 119
Further Conquests 120

CHAPTER 7
ECOLOGICAL LIMITS 125
The Re-Birth of an Environmental Consciousness 125
Aboiteaux Expansion and Environmental Conflict 129
Opposing Perspectives 130
Economic and Ecological Arguments 133
A Compromise of Sorts 136

CHAPTER 8
MEASURING THE HUMAN IMPACT: A PALEOECOLOGICAL APPROACH 139
Study Sites 140
Methodology 143
Results 145
Chronology 145
Stratigraphic and Macrofossil Data 145
Core 1, Saint-Germaine Site 145
Core 3, Bay of Kamouraska Site 149
Core 4, Bay of Kamouraska Site 151
Anthropogenic Change Through Time 153
Amerindian Context, Pre-1680 154
Agrarian Context, 1680-1860 154
Industrial Context, 1860-1970 154
Post-Industrial Context, 1970-2000 155
Humans and Environmental Degradation 155

CONCLUSION

REDISCOVERING “OUR” PLACE IN THE ENVIRONMENT 159

BIBLIOGRAPHY 163

Abbreviations 163
Note on Sources 164
Published and Non-Published Sources 165
Along the south shore of the St. Lawrence River a series of massive dikes 5 meters in height and nearly 27 kilometres in length, called aboiteaux in the local patois, stretch along the coast of Kamouraska, Quebec. Through an interdisciplinary approach combining historical geography and paleoecology, the book explains the fascinating origins of these marshland dikes, and their vital role in the modernisation of Quebec. In a novel approach, *Marshlands* also makes a vital contribution towards amending the prevailing understanding of the place of humans in the environment. In the past 150 years more than half of the salt marshes of the St. Lawrence Estuary have disappeared. Too often, this tragic loss of vital habitat has been portrayed as a result solely of human ignorance and greed. Such an interpretation is thoroughly debunked as the author weaves his way through the centuries explaining the commonalities and conflicting perceptions in how Amerindians, French colonists, agricultural improvers and modern ecologists all viewed the St. Lawrence marshlands as central to their survival. The study illustrates the necessity of an historical geography approach towards any understanding of the place of humans in their environment.

Matthew G. Hatvany is professor of Historical Geography at the Université Laval.