

Geography of British Columbia

Geography of British Columbia

People and Landscapes in Transition

Brett McGillivray

2ND EDITION



UBCPress · Vancouver · Toronto

© UBC Press 2005

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without prior written permission of the publisher, or, in Canada, in the case of photocopying or other reprographic copying, a licence from Access Copyright (Canadian Copyright Licensing Agency), www.accesscopyright.ca.

15 14 13 12 11 10 09 08 07 06 05 5 4 3 2 1

Printed in Canada on acid-free paper ∞

Library and Archives Canada Cataloguing in Publication

McGillivray, Brett, 1944-

Geography of British Columbia : people and landscapes in transition /
Brett McGillivray. – 2nd ed.

Includes bibliographical references and index.

ISBN-13: 978-0-7748-1253-5 (bound); 978-0-7748-1254-2 (pbk.)

ISBN-10: 0-7748-1253-2 (bound); 0-7748-1254-0 (pbk.)

1. British Columbia – Geography – Textbooks. I. Title.

FC3811.M33 2005

917.11

C2005-905704-1

Canada

UBC Press gratefully acknowledges the financial support for our publishing program of the Government of Canada through the Book Publishing Industry Development Program (BPIDP), and of the Canada Council for the Arts, and the British Columbia Arts Council.

Printed and bound in Canada by Friesens

Set in TheSans and Frutiger by Artegraphica Design Co. Ltd.

Copyeditors: Camilla Blakeley and Sarah Wight

Proofreader: Tara Tovell

Cartographer: Eric Leinberger

Indexer: Noeline Bridge

UBC Press

The University of British Columbia

2029 West Mall

Vancouver, BC V6T 1Z2

604-822-5959 / Fax: 604-822-6083

www.ubcpress.ca

Contents

- Illustrations, Figures, and Tables / vi
- Preface to the First Edition / xi
- Preface to the Second Edition / xii
- Acknowledgments / xiii
- 1** British Columbia: A Region of Regions / 3
- 2** Physical Processes and Human Implications / 23
- 3** Geophysical Hazards: Living with Risks / 41
- 4** Modifying the Landscape: The Arrival of Europeans / 61
- 5** First Nations and Their Territories: Reclaiming the Land / 72
- 6** The Geography of Racism: The Spatial Diffusion of Asians / 89
- 7** Resource Management in a Changing Global Economy / 100
- 8** Forestry: The Dominant Export Industry / 117
- 9** The Fishing Industry: Managing a Mobile Resource / 140
- 10** Metal Mining: The Opening and Closing of Mines / 162
- 11** Energy: Supply and Demand / 174
- 12** Agriculture: The Land and What Is Produced / 194
- 13** Water: An Essential Resource / 209
- 14** Tourism: A New and Dynamic Industry / 223
- 15** Single-Resource Communities: Fragile Settlements / 237
- 16** Urbanization: A Summary of People and Landscapes in Transition / 245
- Glossary / 263
- Index / 269

Illustrations, Figures, and Tables

ILLUSTRATIONS

- 3 Vancouver Canadian Pacific Railway station, 1888, BC Archives A-03232
- 23 Diamond Head, near Squamish, photo Brett McGillivray
- 41 Chilliwack flood, 1894, BC Archives A-03951
- 61 Ralph Dodd, *Spanish Insult to the British Flag at Nootka, 1789*, 1791, BC Archives PDP00678
- 72 K'san village, photo Brett McGillivray
- 89 Amor de Cosmos cartoon, BC Archives B-08197
- 100 Coal port, photo Brett McGillivray
- 117 Topping a spar, B. and K. Logging, Pitt Lake, photograph by BC Forest Service, BC Archives NA-05903
- 140 Salmon seiner crew, courtesy of Fisheries and Oceans Canada
- 162 Open-pit mine, Lornex Mine, Highland Valley, photo Brett McGillivray
- 174 Nickel Plate Mine dam and bridge, Hedley, Okanagan/Similkameen, c. 1912, BC Archives F-01641
- 194 Douglas Lake Cattle Ranch, near Merritt, photo Brett McGillivray
- 209 Water flowing over rocks on the Sechelt Peninsula, courtesy of Gordon Carson
- 223 Kayaking off the Sechelt Peninsula, courtesy of Gordon Carson
- 237 Barkerville, 1868, photograph by Frederick Dalley, BC Archives A-00355
- 245 Downtown Vancouver looking west, courtesy of A.H. Siemens
- 1.8 Kootenay region / 15
- 1.9 South central interior region / 17
- 1.10 North central interior region / 17
- 1.11 North coast/northwest region / 18
- 1.12 Peace River/northeast region / 20
- 2.1 Intrusive and extrusive igneous rock / 25
- 2.2 Rock cycle / 26
- 2.3 Generalized geology of British Columbia / 27
- 2.4 Cross-section of Earth / 28
- 2.5 Major oceanic and continental plates / 28
- 2.6 Rift zone / 29
- 2.7 Subduction process off the southern BC coast / 29
- 2.8 Accreted terrane process for southern Vancouver Island / 30
- 2.9 Accreted terranes in British Columbia / 31
- 2.10 River systems of British Columbia / 33
- 2.11 Global climate / 34
- 2.12 Jet stream influences in winter and summer / 35
- 2.13 Climate regimes of British Columbia / 35
- 2.14 The rain shadow effect / 37
- 2.15 Vancouver area annual precipitation in millimetres / 37
- 2.16 Typical coastal soil horizon / 38
- 2.17 Typical interior soil horizon / 38
- 2.18 Generalized vegetation patterns in British Columbia / 39
- 3.1 Hazards model / 42
- 3.2 Fraser River drainage basin / 46
- 3.3 River discharge for selected rivers / 47
- 3.4 Flood plains and land uses / 48
- 3.5 Lower Fraser Valley flooding, 1948 / 49
- 3.6 Fraser River discharge measured at Hope, 1894-1972 / 49
- 3.7 Corrective and preventive measures for flood hazards / 51
- 3.8 Wildfires in British Columbia, 1970-2004 / 51
- 3.9 General types of avalanche / 55
- 3.10 Typical debris torrent slope / 56
- 4.1 Map from the journal of Capt. Vancouver, 1798 / 64
- 4.2 Fur trade forts and routes, 1805-46 / 65

FIGURES

- 1.1 Subfields of geography and links to other disciplines / 4
- 1.2 Natural population increase and net migration, 1931-2001 / 7
- 1.3 Regions of British Columbia / 9
- 1.4 Vancouver Island/central coast and Lower Mainland populations, 1881-2004 / 10
- 1.5 Vancouver Island/central coast region / 12
- 1.6 Lower Mainland region / 13
- 1.7 Okanagan region / 14

- 4.3 American claims to western North America, 1825 / 66
- 4.4 Colony of Vancouver Island, created 1849 / 66
- 4.5 Colony of British Columbia, created 1858 / 67
- 4.6 Cariboo gold rush communities, 1863 / 68
- 4.7 Boundary changes to British Columbia, 1862 and 1863 / 69
- 5.1 Possible migration routes to North America / 73
- 5.2 Historical territorialization of First Nations in British Columbia / 75
- 5.3 First Nations linguistic divisions in southwestern British Columbia / 75
- 5.4 Semi-nomadic migrations in the Lower Mainland area / 76
- 5.5 Treaty land divisions in Canada / 78
- 5.6 Language as a representation of culture / 80
- 5.7 Interrelationship of decision makers / 83
- 5.8 Nisga'a Aboriginal title / 86
- 6.1 Main locations of Chinese in British Columbia, 1881 / 91
- 6.2 Chinese immigration, 1904-23 / 95
- 6.3 Relocation camps for the Japanese in British Columbia / 97
- 7.1 Ecosystem model of resource use / 102
- 7.2 Interrelationship of corporations, governments, and unions / 107
- 7.3 Staple dependency and external control / 107
- 7.4 Vancouver and the Pacific Rim / 109
- 7.5 Regions of British Columbia dependent on forestry and mining / 112
- 7.6 Life expectancy for males and females, 1921-2002 / 112
- 7.7 BC age-sex pyramid, 1971 / 114
- 7.8 BC age-sex pyramid, 2003 / 114
- 7.9 BC age-sex pyramid, 2021 / 114
- 8.1 Coast and interior forest zones / 118
- 8.2 Volume of wood cut from coast and interior, 1950-2002 / 119
- 8.3 Pulp-and-paper mills in British Columbia, 1931 / 121
- 8.4 Pulp-and-paper mills in British Columbia, 2004 / 122
- 8.5 Sawmills in British Columbia, 1931 / 123
- 8.6 Sawmills in British Columbia, 1961 / 123
- 8.7 Sawmills in British Columbia, 1971 / 123
- 8.8 The creation of pulp from wood chips / 124
- 8.9 Public versus private volume of wood harvested, 1911-2003 / 125
- 8.10 Timber supply areas, tree farm licences, and forest regions, 2001 / 126
- 8.11 The fall-down effect / 129
- 8.12 Forestry dependence based on income derived from the forest industry, 2002 / 131
- 8.13 Coast versus interior softwood lumber prices, 1995-2002 / 134
- 9.1 Commercial salmon fishing vessels / 142
- 9.2 Major salmon-bearing rivers and lakes / 143
- 9.3 Commercial catches of Fraser sockeye salmon 1901-89 / 144
- 9.4 Migration routes for BC salmon species / 148
- 9.5 Salmon migration and international borders / 149
- 9.6 Wild and farmed salmon production, 1990-2003 / 152
- 9.7 Value of wild and farmed salmon, 1990-2003 / 152
- 9.8 Location of salmon farms, 2004 / 153
- 9.9 Salmon areas under the Mifflin Plan / 155
- 9.10 Halibut prices, 1985-2003 / 156
- 9.11 Importance of adult Pacific herring in predators' diets, west coast Vancouver Island / 157
- 9.12 Herring catch and landed value, 1935-90 / 157
- 9.13 Pacific cod catch and landed value, 1990-2003 / 159
- 9.14 Groundfish catch and landed value, 1990-2003 / 159
- 9.15 Shellfish catch and landed value, 1990-2003 / 159
- 10.1 Geologic regions of British Columbia / 164
- 10.2 Stages of metal mining production / 167
- 10.3 Placer and lode gold production, 1860-1990 / 167
- 10.4 Employment in metal mining, 1980-2003 / 167
- 10.5 Potential mines, 1986 / 169
- 10.6 Metal mines, 1990-2004 / 171
- 11.1 Vancouver Island natural gas line extension, 1995 / 177
- 11.2 Grades of coal / 177
- 11.3 Sedimentary basins containing coal, natural gas, and oil / 178
- 11.4 Coal production, 1871-2003 / 179
- 11.5 Thermal and metallurgical coal production, 1991-2001 / 179

- 11.6 Forecasts of Japanese crude-steel production, 1971-89 / 179
- 11.7 Natural gas and oil pipelines in British Columbia / 181
- 11.8 Oil prices, 1972-2004 / 182
- 11.9 Offshore oil claim by BC government / 182
- 11.10 Natural gas average price, 1980-2004 / 184
- 11.11 Generation of electricity, 1920-2003 / 184
- 11.12 Kemano 1 project: Damming the Nechako River / 185
- 11.13 Electrical energy projections and consumption, 1976-97 / 186
- 11.14 Main developed and proposed electrical projects and transmission lines / 187
- 11.15 Independent power producers approved by BC Hydro, 2004 / 190
- 12.1 Farming areas in British Columbia / 196
- 12.2 Frost-free days in British Columbia / 198
- 12.3 Value of selected agricultural commodities, 1993-2003 / 200
- 12.4 Appeal process for exclusion from agricultural land reserves / 202
- 12.5 Development regions of British Columbia / 205
- 13.1 Hydrologic cycle / 210
- 13.2 Discharge rates for selected rivers / 211
- 13.3 Theoretical evapotranspiration ratio for a coastal location / 212
- 13.4 Evapotranspiration ratios for selected communities / 214
- 13.5 North American Water and Power Alliance Plan (NAWAPA) / 216
- 13.6 Percentage of population served by wastewater treatment, 1983-1999 / 217
- 13.7 Ecosystem perspective of resource uses and biomagnification / 217
- 13.8 Boil water advisories, 1989-2004 / 218
- 13.9 Groundwater and wells / 220
- 14.1 Relation of tourism industry to resources / 225
- 14.2 Tourism industry sectors / 227
- 14.3 Tofino and Clayoquot Sound, Vancouver Island / 228
- 14.4 US to Canadian dollar exchange rate, 2002-4 / 229
- 14.5 Arrivals and departures at Vancouver International Airport, 1997-2003 / 232
- 14.6 Cruise ship passengers visiting Vancouver, 1992-2004 / 233

- 15.1 Development of single-resource communities / 238
- 15.2 Instant towns and single-resource communities / 241
- 16.1 Canadian Pacific Railway Survey routes through British Columbia / 250
- 16.2 Main rail lines in British Columbia to 1952 / 254

TABLES

- 1.1 Rural and urban population, 1871-2001 / 6
- 1.2 Population by region, 1881-2004 / 10
- 1.3 Population of municipalities for selected years, 1881-2004 / 11
- 2.1 Geologic time scale / 24
- 2.2 Climate data for selected communities / 36
- 3.1 Area destroyed and total cost of wildfires in British Columbia, 1970-2004 / 52
- 3.2 New snowfall and avalanche risk / 54
- 3.3 Hazards related to streams on the Sea to Sky Highway / 57
- 3.4 Richter scale showing potential structural damage / 58
- 4.1 British and American trading vessels in the Pacific Northwest, 1785-1814 / 65
- 4.2 1881 census population / 70
- 5.1 First Nations language divisions / 74
- 5.2 Aboriginal populations for selected years / 81
- 6.1 Chinese occupations in British Columbia, 1884 / 92
- 6.2 Chinese immigration and emigration, 1886-1900 / 93
- 6.3 Revenue from head taxes on Chinese entering British Columbia / 95
- 6.4 Japanese evacuees, 31 October 1942 / 98
- 6.5 National status of Japanese Canadians in 1941 / 98
- 7.1 Interprovincial and international trade flows to and from British Columbia, 1997-2000 / 105
- 7.2 Interprovincial and international trade flows of selected goods, 2000 / 106
- 7.3 Employment in British Columbia and Greater Vancouver Regional District, 2003 / 110
- 7.4 High-tech industries by number of establishments and employment, 1998-2002 / 111
- 7.5 Film and television production, 1998-2003 / 111
- 7.6 Immigration by source countries, 2003 / 113
- 7.7 Interprovincial net migration, 1980-2003 / 113

- 7.8 Projected population by region, 2001-21 / 115
- 8.1 Production and value of selected forest product exports, 1998-2003 / 124
- 8.2 Selected forest product values and price indices, 1998-2003 / 124
- 8.3 Employment in forestry by selected categories, 1991-2003 / 125
- 8.4 Employment per thousand cubic metres of wood harvested, 1950-99 / 125
- 8.5 Reforestation of seedlings, 1960-2002 / 129
- 8.6 Potential yield through intensive silviculture practices / 129
- 8.7 Cost of producing lumber by world supply regions, 2000 / 132
- 8.8 Softwood lumber and pulp and paper exports by destination, 1994-2003 / 134
- 8.9 Log exports, 1999-2003 / 135
- 8.10 Softwood lumber exports to the United States, 2001-4 / 136
 - 9.1 Commercial catch by value, 1951-2003 / 141
 - 9.2 BC salmon exports, 1930 and 1939 / 147
 - 9.3 Fraser River sockeye salmon catches for selected years / 150
 - 9.4 Commercial salmon fishing licences by gear type, 1995-2003 / 155
 - 9.5 Job loss due to federal buyback program, 1995-2000 / 156
 - 9.6 Herring catch, landed value, and wholesale value, 1996-2003 / 158
- 10.1 Value of mineral production as a percentage of total metal mined, 1860-2004 / 165
- 10.2 Value of mineral production in British Columbia, 1998-2003 / 166
- 10.3 World market prices for selected metals and years, 1971-2004 / 168
- 10.4 Production and value of gold and copper for selected years, 1995-2003 / 168
- 10.5 Production, employment, and operation of metal mines, 1990-2004 / 170
 - 11.1 Energy sources, 1925-2002 / 175
 - 11.2 Energy production and consumption, 2000-3 / 176
 - 11.3 Energy consumption by sector, 1978-2002 / 176
 - 11.4 Destinations of British Columbia's thermal and metallurgical coal, 2001 / 179
- 11.5 Natural gas production and value and overall hydrocarbon revenues, 1998-2003 / 184
- 11.6 Supply and consumption of electricity, 1994-2003 / 185
- 11.7 Major proposed electrical energy projects, 1976 / 186
 - 12.1 Census farms in Canada, 1991-2001 / 195
 - 12.2 Soil classification, area, and subclasses / 197
 - 12.3 Physical characteristics and potential limitations for agriculture / 199
 - 12.4 Farms, farm area, average farm size, population, and urbanization, 1901-2001 / 200
 - 12.5 Farm size and gross receipts, 2001 / 200
 - 12.6 Number of cows and dairy farms in British Columbia, 1941-2001 / 201
 - 12.7 Changes in area of agricultural land reserve by region, 1974-2000 / 203
 - 12.8 Agricultural receipts by commodity, 1998-2004 / 204
- 13.1 Drainage area, length, and discharge of major rivers / 211
 - 13.2 Categories of water use / 215
 - 13.3 Waterborne disease outbreaks, 1980-2002 / 218
- 14.1 International tourism estimates, globally, 1950-94 / 224
 - 14.2 Tourism categories / 226
 - 14.3 Overview of factors influencing the Clayoquot landscape / 229
 - 14.4 Tourism indicators, 1997-2003 / 230
 - 14.5 Room revenue by tourist region, 1997-2003 / 230
- 15.1 Population of instant towns, 1971-2004 / 241
- 16.1 Native and non-Native population, 1782-1870 / 246
- 16.2 Population and urbanization, British Columbia and Canada, 1871-1951 / 250
 - 16.3 Native, non-Native, and Asian provincial population, 1871-1951 / 251
 - 16.4 Incorporated communities by region, 1871-1951 / 252
 - 16.5 Incorporated communities over 1,000 population by rank, 1871-1951 / 253
 - 16.6 Population and urbanization, British Columbia and Canada, 1951-2001 / 258
 - 16.7 Municipalities over 10,000 population, 2003, and change from 1996 / 259

Preface to the First Edition

This text is the culmination of years of teaching the geography of British Columbia at Capilano College. It comes at a time when one can question whether all the material gathered here should be offered online or in CD-ROM format. I have chosen the “old” textbook style of presentation, in part, because most geography courses at the college level use textbooks. My concern about going online stems from an informal survey of my classes. Eighty percent or more of the evening students were connected to the Internet or had CD-ROM capability at home, but only 20 percent or fewer of the day students had the same capability. It would place a huge burden on the library if electronic sources provided the only “text.” Future versions may have any number of formats. In its present form, this text includes references to websites where the most up-to-date information can be accessed. It is of course likely that only the government websites and a few others will be maintained in the long run. More important, students are encouraged to use the Internet in conjunction with this text.

Several books have been particularly influential in the creation of this text: Roderick Haig-Brown’s *The Living Land* (1961), Mary Barker’s *Natural Resources of British Columbia and the Yukon* (1977), and Charles Forward’s *British Columbia: Its Resources and People* (1987). Each has done an admirable job in assessing the variety of landscapes and issues in British Columbia. Albert Farley’s *Atlas of British Columbia: People, Environment, and Resources* (1979), is another important resource because it not only provides many useful maps but also contains much additional information about the province. I have used *British Columbia: Its Resources and People* as a text for years because of my preference for a geography that examines themes and stresses an historical perspective. References to other works that have influenced this text can be found at the end of each chapter.

British Columbia: People and Landscapes in Transition is a selective geography. One of its guiding forces is that it is designed for a one-term introductory course, and one can cover only so many topics in thirteen or fourteen weeks. The selection of topics and chapters also shows my bias as a human geographer, and even here there are omissions. Chapters could have been written on transportation, other peoples, and other resources.

Some students have a background in geography and a familiarity with British Columbia; many do not. This has motivated my choice of a topical, or thematic, approach as opposed to a regional one. From my perspective, each theme – such as physical processes, historical geography, and geophysical hazards – has interesting and important stories that help us to understand the processes that have shaped the landscape of this province. The thematic approach is also a means of gaining student interest in geography as a discipline that deals with issues ranging from the local to the global.

The study of British Columbia from a regional perspective is equally valid, and many instructors prefer this approach because it focuses much more on the human and physical features that make individual regions within British Columbia unique. It generally provides a more in-depth view of the many distinctive regions of the province. To address this aspect of BC geography, all chapters in this work, especially the first and last, pay considerable attention to the regional development of the province.

British Columbia: People and Landscapes in Transition has been created largely by converting my classroom notes to prose. It has not been an easy task, as the spoken word and the written word are two very separate means of communication.

Preface to the Second Edition

This second edition of *Geography of British Columbia: People and Landscapes in Transition* comes as a result of my classroom experience, where I have found it necessary to update statistics and add new information. Since the first edition, significant changes on both the global and the local scale have had an impact on this province. Some events have been catastrophic, such as the terrorist attack in the United States on 11 September 2001, which profoundly affected the movement of goods and people across the border. Closer to home was the outbreak of the SARS (severe acute respiratory syndrome) epidemic in 2003; although its main focus was Toronto, Vancouver had its share of concern, particularly given its close ties to Asia. Also close to Toronto was the contamination of drinking water at Walkerton, Ontario. The seven deaths and over 2,000 people hospitalized served as a serious reminder to the nation of the importance of water quality and the policies that protect water quality. Even closer to home was the firestorm in the summer of 2003 that brought the high risk of forest fire hazard to the forefront for all in British Columbia.

Political change results in new policies and new directions on many geographic scales. One of the consequences of the Bush administration's war on Iraq, for example, has been the escalation of the price of oil and natural gas to an all-time high. This has a number of implications for British Columbia, ranging from energy corporations producing more fossil fuels to energy users seeking alternative forms of energy. Canada's ratification of the Kyoto Protocol in 2002 was another political decision that commits this country to curb its greenhouse gases, which translates into burning fewer hydrocarbons.

Politics, mixed with economics, has similarly played a major role in the forest industry. The unilateral imposition of US duties and tariffs on softwood lumber has been devastating to many sawmills, and sawmill towns,

throughout the province. There are also political and economic battles over farmed Atlantic salmon (in fact, all farmed salmon) and its threat to wild Pacific salmon species.

Information available on the Internet has exploded since the first edition of this book, and many websites have excellent content. Their visual component is particularly important because geography is about the landscape. A number of web references have been added to this edition.

This second edition of *Geography of British Columbia: People and Landscapes in Transition* remains selective, with an emphasis on the human side of geography, and designed for a one-term introductory course. Various topic areas in each chapter have been expanded, as suggested by colleagues and critics, and the book now includes information on the high-tech and film industries, commercial fishing other than salmon, fish farming, coalbed methane production, population dynamics, and forest fire hazard. I remain convinced that the topical or thematic approach, as opposed to a regional approach, is a better means of gaining the interest of students, especially as not all students have a background in geography or a familiarity with British Columbia. From my perspective, each theme is a story (containing many stories in turn), and these are stories that British Columbians as well as those interested in this province would benefit from knowing.

I also recognize that the study of British Columbia from a regional perspective is equally valid, and many instructors prefer this approach as it focuses much more on the human and physical features that make the regions within British Columbia unique. The thematic approach adopted here is not devoid of regional concerns, and all chapters, especially the first and last, pay considerable attention to the regional development of the province.

Acknowledgments

Many people are to be thanked, including the librarians at Capilano College and my colleagues in the Social Sciences: Gordon Bailey for his insightful comments, Charles Greenberg and Cheryl Schreder for their encouragement, Jeanne Mikita (who has taught the BC course partially online and has made many helpful suggestions), and Karen Ewing for her assistance on passing along “things” geographic, especially for the physical geography chapter. Thanks also goes to Bob Patrick, University of Guelph, who passed on his research material, and ideas, on water quality and the policies required to protect drinking water. Students were particularly helpful as initially the text was used in draft form and their editorial com-

ments were invited. A special thanks also goes to Wim Kok at North Island College for his many useful comments and sources of information. My wife and partner CarolAnn Glover took on the huge, time-consuming task of editing the many drafts, and I am forever grateful. Finally, I would like to thank those who reviewed the first edition of *Geography of British Columbia: People and Landscapes in Transition*, as well as the readers for UBC Press, for their frank and useful comments, which have been taken into account, and Camilla Blakeley for her exceptional, professional editing of the first edition. Any errors and omissions are the fault of the author.

Geography of British Columbia



British Columbia: A Region of Regions

USING GEOGRAPHY TO MAKE SENSE OF THE LANDSCAPE

The focus of geography is the landscape, both human and physical, and using geographical knowledge gives meaning to the changes that are constantly shaping and modifying the landscape. Those who study the human landscape look at where people live, their activities, and how they have modified the landscape. Physical geographers, on the other hand, are interested in the many physical processes that influence the landscape. Of course, landscapes are frequently modified by a combination of physical and human processes, and common to both sides of the discipline is that geography always incorporates a spatial perspective. The two broad divisions in the field – the human and the physical – can be divided into a number of subfields. As Figure 1.1 shows, geography is associated with many other disciplines, but the spatial element keeps it distinct.

British Columbia is a large province, encompassing nearly 950,000 square kilometres, and is also extremely varied from both a human and a physical perspective. Many nation-states are significantly smaller, and few have such a variety of landscapes. Nevertheless, fewer still have

such a small population (4.15 million in 2003) in relation to area – a density of only 4.4 persons per square kilometre (versus the United Kingdom’s 244.5 persons per square kilometre in 2002) (Stanford 2003, 182). It is a helpful exercise to compare the size of British Columbia to that of countries around the world and to locate the province in relation to those countries. A map of Canada reveals the size and spatial relationship of British Columbia to other provinces and territories within Canada. One theme of this text considers how British Columbia is unique within Canada.

One definition of geography is the study of “where things are and why they are where they are” (McCune 1970, 454). “Things” can be physical features, people, places, ideas (or human innovations), or anything in the landscape. “Where” questions concentrate on location as well as recognizing physical and human patterns and the distribution of various activities, people, and features of the landscape. Many of these questions can be answered simply by looking at a map, and students are encouraged to acquire a road map of British Columbia. Where is Liard Hot Springs? Where is the territory covered by Treaty 8? Where are the sockeye spawning grounds? Where are

Nelson, and Fort Nelson? Knowledge of where things are is basic and essential geographical information. A useful beginning to test your knowledge of British Columbia is to draw a map of the province from memory and to place on it the features you consider important. This cognitive mapping exercise reflects individual landscape experiences (which can be shared with others) and demonstrates the importance of location. Using maps to answer “where” questions is the easiest aspect of geographical study.

Why are things where they are? “Why” questions are far more difficult than where questions and ultimately may verge on the metaphysical. Even so, students are encouraged to conduct research about and to analyze the various physical, economic, political, cultural, and historical factors

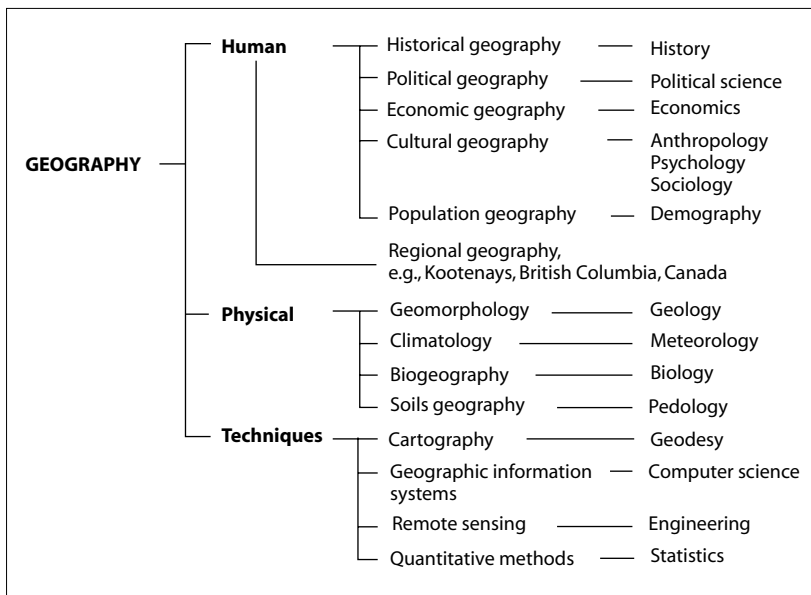


Figure 1.1 Subfields of geography and links to other disciplines

involved in a specific location or locational patterns, whether it is the location of a type of vegetation, of a community, of a group of people, or of a resource. Why does sagebrush dominate the dry southern interior valleys? Why is Vancouver where it is and why has it grown so rapidly? Why did Barkerville become a ghost town? Why did the Doukhobors settle mainly in the Kootenays? Why did the Nechako River get dammed for hydroelectric power? Why is the Peace River region not part of Alberta? These questions are not easy and often require historical, physical, cultural, political, and economic assessments.

Other geographers add the “what” question: “what is the significance of these locational patterns?” (Renwick and Rubenstein 1995, 5). What influence do people have on the environment, and what influence does the environment have on people? Humans are constantly shaping and modifying the landscape to meet the demand for resources – clear-cutting forests, damming rivers, and building plants that pour emissions into the air and water – and these acts produce an environmental backlash to ecosystems and human health.

All of these questions – where, why, what – mean geography is a practical and pragmatic discipline, one that encourages an understanding of the surface of the earth on all geographic scales. Anne Hébert (2001, 81), assessing the province of Quebec within Canada, understands these relationships and suggests, “Real geography is learned at the table, in the breaking of bread.” These are the human stories; other stories focus on the physical environment. Through geography, there is an attempt to interpret the landscape (“connect the dots”) and develop critical thinking skills to unravel the complexity of spatial patterns, processes, and relationships.

The geography of British Columbia is changing constantly. News headlines inform us of these changes and provoke where, why, and what questions: Vancouver-Whistler wins 2010 Winter Olympic bid ... Magnitude 6.8 earthquake off the Queen Charlotte Islands (28 May 2004) shakes island communities ... BC Hydro resurrects Site C Dam proposal: It would flood thousands of hectares, force Peace families to move and affect fish habitat (7 April 2004) ... Firestorm 2003 worst in British Columbia’s history ... Avian flu discovered in Fraser Valley and forces the slaughter of 19 million chickens and turkeys (March 2004) ... BC wood products exports to China doubled in 2004 ...

Since 22 May 2002 most Canadian softwood lumber exported to the United States is subject to a 27 percent duty collected by US Customs ... Current salmon farming practices are a serious threat to wild salmon stocks and the marine environment ... Rural and resource-based communities losing population in British Columbia. Common to such complex issues is the idea that human and physical processes are altering the landscape. The chapters that follow are intended to raise the where, why, and what questions and to provide the means to understand some of the processes influencing change.

Another theme throughout *Geography of British Columbia: People and Landscapes in Transition* is the importance of history. From a European, colonial perspective, British Columbia has little history of settlement and development compared to eastern Canada or to many other nations in the world. Aboriginal people, however, have approximately 10,000 years of history in British Columbia, and anthropologists and archaeologists are still adding new evidence of their settlement patterns and use of resources. From the viewpoint of physical geography, changes to the landscape are often measured in several hundreds of millions of years, and the BC landscape is no exception.

The combination of physical processes in British Columbia has produced a spectacular variety of mountains, rivers, lakes, islands, fjords, forests, and minerals. Within this physical setting, First Nations people, and later non-Natives, settled, exploited, and altered the landscape, sometimes irreversibly. These physical-human interactions prompt us to look at the landscape another way, namely, from an environmental perspective.

Meshing with the idea of change over time in such a rugged and physically challenging province is the theme of movement over space. **Time-space convergence** (sometimes referred to as time-space compression, or collapse) refers to the changing technologies of movement that shrink time and space. Today, for example, a flight from London, England, to Vancouver, British Columbia, takes approximately nine hours. In 1790, a trip to the Pacific Northwest from London meant sailing around South America and took nearly seven months. By 1890, the voyage from London to Vancouver was reduced to three weeks with the introduction of steam-driven vessels and the building of the Canadian Pacific Railway across

Canada. This change in transportation affecting the movement of goods and people had major implications, not only to settlement patterns but also to resource development – particularly as quicker transportation frequently reduced freight rates. With the advent of telegraph lines in 1890, movement of information between London and Vancouver was reduced to three days (Harris 1997). By comparison, current satellite systems provide instant global communications, with a consequent worldwide reorganization in the production of goods and services and spatial relationships generally.

Time-space convergence describes a shrinking world; however, the shrinking of time-space does not occur evenly. Geographic locations that are connected differ, sometimes greatly, from locations that are not connected. Freeways such as the Coquihalla give the advantage of rapid movement to southern British Columbia communities, while northern and coastal communities are significantly more isolated with only secondary roads or, in some cases, no roads. Similar comparisons occur with airports, railways, port facilities, pipelines, and communications infrastructure. These transportation developments play a significant role in settlement, development, and economic advantage throughout the province.

Closely associated with time-space convergence is **spatial diffusion**. Here, the focus is on the movement (or flow) from one location to another of goods, innovations and ideas, services, and people, and tracing where they move. For example, the spatial diffusion process is used to trace where new innovations in farm equipment, new seeds, or agricultural practices occur, and where they are adopted. The spatial diffusion process is also used to describe events, such as the waves of small pox epidemics and their impact on First Nations, the evolution and pattern of salmon cannery location, or the spread of high speed Internet service. All of these movements were influenced by “carriers” and “barriers” (Gould 1969). Carriers are instrumental in the spread and adoption of innovations, goods acquisition, or the contraction of diseases; barriers prevent, or block, this movement. “Relocation diffusion” refers specifically to the movement of people from one place to another. Both barriers and carriers apply to relocation diffusion, but the terms “push” and “pull” factors are also applied. Push factors include the many reasons that force people to move, such as over-

population, warfare, religious persecution, and a host of other political, economic, and social reasons. Pull factors are the opposite, reflecting the various conditions that attract people to a new location. Both push and pull factors have been responsible for people moving to British Columbia.

Statistics are useful in assessing trends and patterns, and Table 1.1 indicates the increases in British Columbia’s population along with the transformation from rural to urban environments. Isolation was a major factor in early non-Native settlement and development. However, time-space convergence increased accessibility and allowed greater opportunity for economic trade, development of resources, and settlement, particularly urban settlement. These changes affected the regions of British Columbia in vastly different ways and also resulted in a much more complex society. The conquering of distance also facilitated the global transition, especially in trade and investment, from the Atlantic to the Pacific, tying British Columbia closely to the Asia-Pacific region.

Population increase is determined by calculating natural increase (births minus deaths) and net migration (immigration minus emigration) and combining the two

Table 1.1

Rural and urban population, 1871-2001

Year	Population	10-year change	Percentage	
			Rural	Urban
1871	36,247		84.8	15.2
1881	50,387	14,140	72.0	18.0
1891	98,173	47,786	57.5	42.5
1901	178,657	80,484	49.5	50.5
1911	392,480	213,823	48.1	51.9
1921	524,582	132,102	52.8	47.2
1931	694,263	69,681	56.9	43.1
1941	817,861	123,598	45.8	54.2
1951	1,165,210	347,349	47.2	52.8
1961	1,629,082	463,872	27.4	72.6
1971	2,184,621	555,539	24.3	75.7
1981	2,744,465	559,844	22.0	78.0
1991	3,282,061	537,596	19.6	80.4
2001	4,078,447	796,386	18.0	82.0

Sources: Statistics Canada (1983a), series A2-14; (1983c), series A67-69; (2001a), table 051-0001; (2001b), table 109-0200.

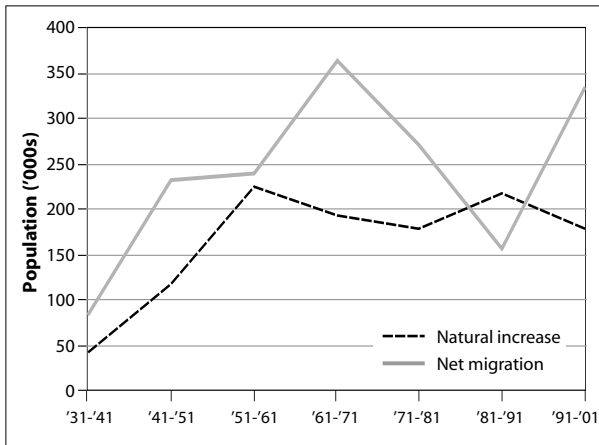


Figure 1.2 Natural population increase and net migration, 1931-2001
Sources: Data from Statistics Canada (1983a), series A339-349; (2004), table 051-0013.

results. Figure 1.2 illustrates how important immigration has been to the overall population of the province. Immigration policies and economic conditions, however, influence these increases. The recession of the 1980s, for example, significantly reduced the number of people migrating to British Columbia.

TOPICAL OVERVIEW

Geography of British Columbia employs a primarily topical approach. This chapter is an exception to this general direction in that it provides an introduction to geography and a regional overview of British Columbia's settlement and development. Chapters 2 to 6 introduce the basic physical and human landscapes and some of the processes that change these landscapes. Chapters 7 to 15 take an economic perspective as they concentrate on resources, resource management, and communities that depend on resources.

Most of this text concerns human geography, but the physical landscape is not ignored. Chapter 2 discusses the landscape in terms of the various physical processes that have changed and shaped it. These processes have created distinctive regional variations throughout British Columbia as well as marked contrasts to the rest of Canada.

Chapter 3 bridges the realms of physical and human geography with its focus on our human use systems and

the risk from geophysical hazards. Chapters 4 to 6 present human geography themes: the historical geography of European settlement, the long history to present-day use of the landscape by First Nations, and, finally, the story of Asians in British Columbia. Each of these themes takes a historical perspective in examining the factors that influence the many changes to and regional variations in the landscape.

Resources, the theme of Chapters 7 to 15, have played and continue to play a large part in the economic well-being of this province as well as in attracting settlement. Chapter 7 begins with a discussion of resource management issues and the roles played by governments and corporations. Our use of, and dependence on, resources in this province have spatial and regional patterns. Each resource has its own unique history of development and influence on British Columbia. Consequently, forestry, fishing, metal mining, energy, agriculture, water, and tourism are examined in separate chapters. Single-resource communities, the theme of Chapter 15, illuminate the human link between resource development and the people who depend on it for a living.

Chapter 16, the final chapter, summarizes many of these themes and developments by reviewing 200 years of urbanization in this province. An urban view enhances the regional perspective of British Columbia because it shows the growth, and occasionally the decline, of communities throughout the province.

REGIONAL OVERVIEW

A **regional geography** approach is a means of assessing geographic areas that have common physical or human/cultural characteristics and can thus be distinguished from other regions (Gregory 2000, 687). From a regional perspective, British Columbia is a unique province within Canada for a variety of reasons. Physical characteristics set it apart from all other provinces. It has the youngest and highest mountains in the country and is often described as a vertical landscape. It also has the greatest amount of fresh water in Canada, an essential resource for the five species of Pacific salmon that also provides the potential for hydroelectric power. The highly indented coastline, "punctured by fjords," spans some 41,000 kilometres (Dearden 1987, 259). Weather and climate produce other distinctive patterns. The relatively mild, wet west

coast, with the warmest winter temperatures in Canada, stands in contrast to the considerably colder and drier interior, with desert conditions in the southern river valleys. The interrelationship of climate, soils, and vegetation produces distinctive patterns from west to east in the province and also from south to north because of the eleven-degree span of latitude. Vertical change due to high mountain ranges produces regional variations similar to latitudinal differences.

Distinctive physical characteristics and a unique global location have influenced the human characteristics of the province. The precontact population of First Nations, particularly in coastal locations and along salmon-bearing rivers, was greater than anywhere else in Canada (Muckle 1998). Non-Native “discovery” and settlement was also unique in that it occurred from the west rather than from the east. British Columbia went through distinctive territorial struggles to become a British colony and further political struggles to establish its present boundaries. Its connection to the Pacific, and particularly to Asia, increased as transportation systems were developed. No other province has such a long history of immigration by Asians – first Chinese, and later Japanese and Sikhs. Nor did any other province gain the reputation of being so adamantly racist.

British Columbia has an abundant supply of resources, which have been the main attraction for the population and the reason for its rapid growth. Yet the physical characteristics of the province initially made resource extraction and export to distant markets difficult, and regionally differentiated patterns of settlement and development resulted (Robinson 1972). British Columbia is a region of regions and can be divided and subdivided, as it is throughout this text, on the basis of both physical and cultural characteristics.

River drainage systems, plateaux, mineral deposits, forests and vegetation, frost-free days, latitude, elevation, and precipitation are physical criteria by which the province can be divided into distinct regions. On the human or cultural side (**cultural regions**), features such as a common language or religion can demarcate regions, as can other political, economic, and social factors. For example, regional district and health board boundaries represent the organization of space based on political decisions, whereas fishing zones, tourist areas, forestry regions,

newspaper circulation areas, policing jurisdictions, and school districts are regions derived more from economic and social functions. For many people who live in a particular area and have shared historical experiences, such as First Nations, there is a sense of place, or “nationalism,” that comes with a connection to the land.

Traditional regional geography is a means of dividing British Columbia into parcels, or regions, for more critical examination of its characteristics and to make sense of its diversity. Critics of this approach point to the separateness of the resulting geographic areas; regions are not islands unto themselves but are linked in ways that are not captured by traditional regional geography. Moreover, the characterization of a region may be appropriate only at one point in time; consequently, regions need to be reconfigured as conditions change.

Today, regional geography is sometimes referred to as “reconstructed regional geography,” thus distancing itself from traditional regional geography (Pudup 1988). This new direction takes into account the many complex relationships within any landscape, the many interactions linking adjacent regions, and even global conditions. An understanding of these relationships may be accomplished with a host of analytical tools, as well as by borrowing from other disciplines.

This new regional geography recognizes that regions can change over time and that regions may even overlap. For example, from a cultural and historical perspective, territorial boundaries or seminomadic regions divided Aboriginal peoples of the Pacific Northwest. These regional boundaries shifted because of warfare, scarcity of resources, and changes in technology. The greatest change of all, however, came with the arrival of Europeans, who reorganized the landscape into very different regions, creating the reservation system and placing First Nations on reserves. The political boundaries of British Columbia have been drawn a number of times, but it is only since the 1990s that non-Natives have recognized the historical boundaries of First Nations.

When dividing the province into meaningful regions, external regionalization must also be acknowledged. British Columbia was initially claimed by Spain before coming under the colonial control of Britain. Confederation broke the bonds of colonization and relieved the anxiety that this territory would be annexed by the United States;

spatially, British Columbia then became one region of an independent Canada. More recently, the signing of the Free Trade Agreement (1989) and North American Free Trade Agreement (1994), along with increased trade and investment in the Asia-Pacific region, has placed British Columbia, and Canada, in a new, more global, regional economic alignment.

The organization of a regional geography of British Columbia must take all of these changing conditions into consideration; consequently, there are many regional approaches used to accomplish this goal. Figure 1.3 divides the province into eight regions, devised mainly by considering historical development in combination with census subdivisions. Table 1.2 provides the population change for these regions, spanning over 120 years. Maps, graphs, and statistics are some of the key tools of the geographic trade (the “techniques” shown in Figure 1.1). They allow geographers to begin to understand the dynamics of the where, why, and what questions. For example, the construction of a map of each of the eight regions detailing such features as mountains, rivers, incorporated communities, Aboriginal title boundaries, and transportation systems, engenders familiarity with the vastness of the landscape, the physical and human features that distinguish each region, and the factors that integrate these separate regions with other parts of Canada and the world.

Monitoring regional population change, as Table 1.2 does, is another interesting exercise that compares and contrasts the regions with the greatest and least growth, as well as the fluctuations that occur within any of the eight regions. Graphing the absolute growth of each region is also useful as it gives a picture of the rate and trend

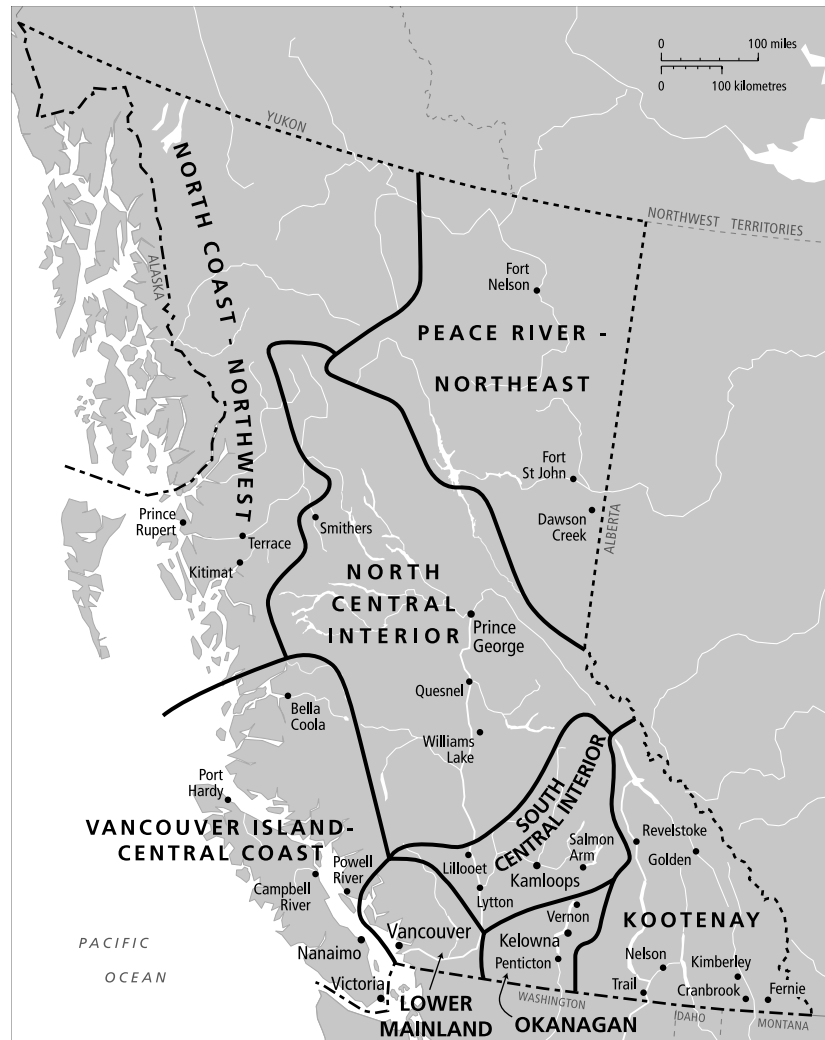


Figure 1.3 Regions of British Columbia

of change and a sense of historical development. A comparison of just two regions – the Lower Mainland and Vancouver Island/central coast – provokes some interesting questions about rate of growth. Why did the Lower Mainland, a geographically smaller area, outstrip the Vancouver Island/central coast so rapidly between 1901 and 1911? Bear in mind that the Lower Mainland includes the City of Vancouver, incorporated in 1886. Observe the slope of the graph lines between the years 1921 and 2001 in Figure 1.4, which shows the population increases of the

Table 1.2

Population by region, 1881-2004

Year	Vancouver Island/ central coast	Lower Mainland	Okanagan	Kootenay	South central interior	North central interior	North coast/ northwest	Peace River/ northeast
1881 ^a	18,777	7,949	1,316	863	4,725	7,550	7,376	923
1891 ^a	39,767	23,543	3,360	3,405	6,390	4,889	16,839	n/a
1901 ^b	54,629	53,641	7,704	32,733	14,563	5,123	9,270	948
1911 ^b	84,786	183,108	21,240	51,993	24,103	9,011	16,595	1,644
1921	119,024	256,579	23,728	53,274	32,232	18,615	18,986	2,144
1931	133,591	379,858	30,919	63,327	37,621	23,236	18,689	7,013
1941	164,751	449,376	40,687	72,949	37,394	26,272	18,051	8,481
1951	233,250	649,238	62,530	93,256	50,363	41,324	20,854	14,395
1961	312,160	907,531	86,230	107,466	57,346	89,085	38,203	31,061
1971	415,254	1,256,425	130,498	125,643	106,993	133,906	63,080	45,155
1981	517,536	1,434,739	196,774	145,412	139,175	186,992	68,376	55,463
1991	611,654	1,829,537	240,291	141,480	142,628	190,141	67,975	58,355
2001	717,997	2,378,240	310,602	163,502	167,364	210,621	66,673	63,448
2004	737,860	2,445,882	323,397	178,092	165,939	215,215	66,483	66,515

a Some approximations for regions as the province was divided into only five electoral areas.

b Some approximations for regions as the province was divided into only seven electoral areas.

Sources: Census of Canada (1951), table 6-84-88; (1971), table 8-92-96; BC Stats (2004b).

two regions. What accounted for the different rates of population growth during this period, and why has the Lower Mainland population continued to grow at a more rapid rate?

The answers lie partly in the political decision to locate the Canadian Pacific Railway (CPR) terminus and an international port at Vancouver and in the consequent stimulation to economic growth and thus population. Employment opportunities related to obtaining and processing the primary resources of fish, forests, mines, and agriculture played a role in each region, and the port facility of Vancouver greatly widened the catchment area for exporting resources. The First World War, the opening of the Panama Canal, the Depression of the 1930s, and the Second World War were significant global events that

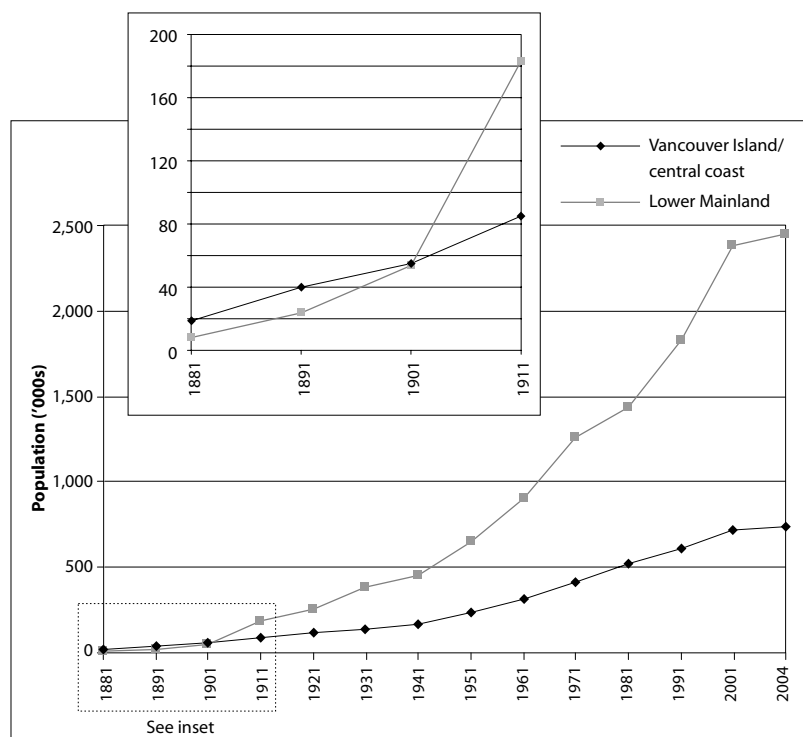


Figure 1.4 Vancouver Island/central coast and Lower Mainland populations, 1881-2004
Sources: Data from Census of Canada (1951), table 6-84-88; (1971), table 8-92-96; BC Stats (2004b).

affected each region. Following the war, technologies of time-space convergence, in combination with more global means of producing goods and services, altered the way people made a living and reorganized the value of resources. The Lower Mainland region, with its greater connectivity – roads, rail, port, international airport, and conference centres – increasingly gained the greater proportion of the population.

A similar comparison could be made for any two regions and would require further analysis of the many factors influencing regional growth. Census figures can also reveal the ethnic composition of each region, and again these figures can form the basis of a host of social, ethnic, political, and economic questions. These lead in turn to geographic analysis of ethnic groups from First Nations and Asians to the British in British Columbia.

The development of communities provides further geographic knowledge about the settlement of British

Columbia. Table 1.3 ranks by population the ten largest municipalities from the 2004 census. It is interesting to compare these populations to selected census years in the past (in which the ranking is also given). Many of our present-day communities did not exist before the twentieth century; others have changed boundaries; some were much more significant in the past; and others have lost population. What are the factors responsible for the growth or decline of communities, and how are communities connected to their regions and to other communities?

The regional comparisons in Figure 1.4 are reinforced in a comparison of the older centre of Victoria with Vancouver. The extremely rapid rise in Vancouver's population since its incorporation in 1886 illustrates the powerful influence of its status as a national railway and major port facility and, later, the focus of other railway, road, and highway systems and site of an international airport.

Table 1.3

Population of municipalities for selected years, 1881-2004

Municipality	2004	2001	1996	1921	1901	1891	1881
Vancouver (CMA)	(1) 2,132,824	(1) 2,073,681	(1) 1,891,465	(1) 163,220	(1) 27,010	(2) 13,685	–
Victoria (CMA)	(2) 331,491	(2) 325,569	(2) 304,287	(2) 38,727	(2) 20,919	(1) 16,841	(1) 5,925
Kelowna (CMA)	(3) 162,555	(4) 154,193	(4) 89,442	2,520	261	–	–
Abbotsford (CMA) ^a	(4) 161,304	(3) 153,801	(3) 105,403	–	–	–	–
Kamloops (CA)	(5) 91,739	(5) 80,655	(5) 76,394	(7) 4,501	(8) 1,594	–	–
Prince George (CA)	(6) 91,227	(7) 75,567	(6) 75,150	2,053	–	–	–
Nanaimo (CA)	(7) 90,988	(6) 76,185	(7) 70,130	(5) 6,304	(4) 6,130	(4) 4,595	(2) 1,645
Chilliwack (CA)	(8) 76,566	(8) 65,672	(8) 60,186	(9) 3,161	277	–	–
Vernon (CA)	(9) 55,327	(9) 34,957	(9) 31,817	(8) 3,685	802	–	–
Penticton (CA)	(10) 44,294	(10) 32,339	(10) 30,987	– ^b	–	–	–
Prince Rupert (CA)	15,678	15,282	16,714	(4) 6,393	–	–	–
Nelson (C)	9,784	9,703	9,585	(6) 5,230	(5) 5,273	–	–
Rossland (C)	3,680	3,804	3,802	2,097	(3) 6,156	–	–
Fernie (C)	5,040	4,812	4,877	2,802	(6) 1,640	–	–
Revelstoke (C)	7,911	7,826	8,047	2,782	(7) 1,600	–	–
Trail (C)	7,816	7,905	7,696	(10) 3,020	(9) 1,360	–	–
Greenwood (DM)	665	695	784	371	(10) 1,359	–	–
New Westminster	– ^c	– ^c	– ^c	– ^c	– ^c	(3) 6,641	(3) 1,500
North Vancouver	– ^c	– ^c	– ^c	(3) 7,652	–	–	–

Note: CMA = census metropolitan area; CA = census area; C = city; DM = district municipality

a Boundary change and incorporated as a city in 1995.

b Incorporated in 1909, but population less than 1,000.

c Included in Vancouver CMA.

Sources: Census of Canada (1951); BC Stats (2004a; 2004b).

Vancouver has also attracted the major financial institutions and head offices for many of the resource industries operating throughout the province and the Asia-Pacific region. As the provincial capital, Victoria has experienced the growth of government and services along with infrastructure developments that link it to Vancouver Island's resources and to the mainland, but these economic links are not nearly as extensive as those of Vancouver.

Other communities throughout British Columbia have changed their population ranking over time mainly through the expansion of transportation and resource development and processing. By the 1980s, however, the new urban growth dynamics of the tourism and retirement industries, along with technologies that shrink time and space, had affected some communities more than others. These communities, and their growth (or decline), are intimately tied to the regions in which they are located.

In the sections that follow, the eight regions shown in Figure 1.3 are briefly described in terms of their distinctive physical characteristics and historical development.

Vancouver Island/Central Coast

This region combines Vancouver Island with the central coast, which extends from Powell River north to Bella Coola. Vancouver Island has a rugged spine of mountains, referred to as the Insular Mountains. The central coast is part of the Coast Mountains range, which has peaks reaching considerably higher elevations and includes one of the highest mountains in British Columbia, Mount Waddington (4,016 metres). These mountains run mainly north-south and influence weather and climate conditions significantly. The prevailing westerlies often result in torrential rains on the west side of Vancouver Island and on the mainland where it is exposed to the open Pacific. The Olympic Mountains of Washington State and the Insular Mountains of Vancouver Island provide a **rain shadow effect** on the east side of Vancouver Island and on the southern end of the central coast. The Pacific Ocean at these latitudes (approximately 48°30' to 52° north) is considerably warmer than the Atlantic Ocean on the east coast of Canada, providing this region with the mildest winter climates in the country. Precipitation variations due to the rain shadow also influence vegetation and, in particular, the growth of Douglas fir in the drier areas. There



Figure 1.5 Vancouver Island/central coast region

are no large rivers on either Vancouver Island or the mainland, but the many small rivers and streams are important for fish habitat.

Historically, the Vancouver Island/central coast region has been home for many First Nations. The peoples in this region experienced the longest exposure to non-Natives, however, and diseases took a huge toll. It was here that the Spanish and British squared off in the 1780s over territorial claims for colonization and the valuable sea otter trade. By the early 1800s, British Columbia was embroiled in an overland fur trade struggle between the aggressive North West Company and the Hudson's Bay Company. In 1821, the merger of these companies resolved the dispute and left the Hudson's Bay Company with a monopoly over the territory.

Non-Native settlement was sparse and temporary until a series of political and economic events in the mid-

1800s. The Oregon Treaty of 1846 annexed the British territory and forts south of the forty-ninth parallel, and as a consequence Victoria was established at the south end of Vancouver Island. In 1858, gold was discovered on the lower reaches of the Fraser River, triggering an avalanche of miners seeking their fortune. Victoria became the main port of entry for much of this activity. Further discoveries of gold in the Cariboo region enhanced Victoria's position as the area's main administrative and service centre. The two separate colonies of Vancouver Island and the mainland were amalgamated in 1866 with Victoria as the capital, a position it has maintained since British Columbia joined Confederation in 1871.

The location of the capital attracted most settlers in the region to the southern end of Vancouver Island. The rest of the island was opened up in response to resource discovery, transportation developments, and technological change. Coal was an important resource found before the discovery of gold. The discovery of other minerals, such as iron ore on Texada Island and copper at the north end of Vancouver Island, created more jobs, but most of this activity did not occur until after the 1960s. Salmon fishing and canneries sprang up along the island and mainland coasts, and farming settlements were established mainly in the southeast of the island. By far the most important industry throughout the region was forestry. Large lumber mills such as the one in Chemainus were in operation by the 1880s, followed by pulp mills in the communities of Ocean Falls, Port Alice, and Powell River in the early 1900s.

Historically, railways were the most important means of land transportation on Vancouver Island. The Esquimalt and Nanaimo Railway (E&N) opened in 1886 and was the most important line, as it came with a provincial land grant to over one-quarter of the island. Roads appeared first on the southeast side of Vancouver Island and eventually linked the southern end with the northern as well as sending tentacles across to the few communities on the west side of the island (Wood 1979). Ocean-going transport provides the main link between the mainland coastal communities (e.g., Bella Bella, Bella Coola, Ocean Falls, and Powell River) and Vancouver Island. The highly indented and rugged mainland coastline hindered road development in the early days of settlement. Only Bella Coola was linked by road to the rest of the province.

Today more than 700,000 people live in this region. The forest industry is still important, especially for those living in the west and north of the island and along the central coast. However, the failure of the US-Canada softwood lumber agreement and unstable pulp prices have resulted in production cutbacks, permanent closures (e.g., Gold River in 1999), and increased unemployment. Farming, including farm-gate wineries, a wide range of recreation and tourism options, commercial fishing, and fish farming (although controversial) are other areas of employment. The Canadian Forces Base in Comox, employing over 1,500, is significant to the Comox-Courtenay region.

The southeastern portion of the island has experienced some unique economic dynamics. It has attracted a huge number of retirees because of the mild winters with relatively little snow to shovel and year-round recreational activities. This part of the island also attracts the greatest number of tourists in the region because direct ferry links with the Lower Mainland make it easily accessible. As well, the southern end of Vancouver Island is intimately linked to the Lower Mainland region in the provision of administrative and service functions for western Canada and the Asia-Pacific region, making it part of the core, or heartland, of the province, as opposed to the periphery, or hinterland. (Confusion arose with these terms when the 2001-5 provincial Liberal government took to referring to the hinterland as the heartland. After provincial cutbacks, some in the periphery dubbed it the "hurtland.")

Lower Mainland

The climate of the Lower Mainland is similar to that of the southeast coast of Vancouver Island although it has

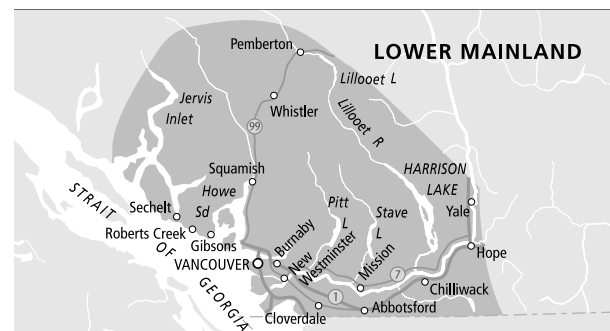


Figure 1.6 Lower Mainland region

higher precipitation, including more snow in winter, the higher the elevation. The Fraser River, the largest river system in the province and most significant to the salmon fishing industry, is an important physical feature of this region.

Historically, salmon and other resources of the water and land attracted many First Nations to the region. For non-Natives, gold was the main attraction following its discovery on the Fraser in 1858. Agricultural settlements soon followed, but securing these rich agricultural lands from the threat of floods has not been easy. Before the establishment of Vancouver, major sawmills on Burrard Inlet exported lumber, and canneries operated at the mouth of the Fraser River.

Transportation has been a major factor in the growth and development of this region. The completion of the CPR at Port Moody and its extension to Vancouver in 1886 was the catalyst for the rapid growth observed in Table 1.3. Vancouver, with its national railway and international port, was the main centre for this relatively small geographic region and was largely responsible for the growth of the adjacent Fraser Valley to the east, the Squamish-Whistler-Pemberton corridor to the north, and the Sunshine Coast to the northwest. The mountains and valleys framed the transportation links and settlement patterns for this region. The Sunshine Coast has a linear settlement pattern following the Strait of Georgia and is connected to Vancouver via ferry at Horseshoe Bay in West Vancouver. The Pacific Great Eastern Railway (renamed the British Columbia Railway, or BCR, in 1972) initially ran between Squamish and Quesnel (1921), and then was extended south to North Vancouver (1956) and north beyond Quesnel. This railway line has been an important transportation link to the ports at Squamish and North Vancouver. The Sea-to-Sky Highway is the main transportation system today as it winds its way beside Howe Sound to Squamish and then follows valleys leading past Whistler to Pemberton, Lillooet, and the interior of the province. Vancouver, Whistler, and all the communities between them, as well as the route that links them, have gained much attention since the announcement that Vancouver/Whistler is hosting the 2010 Winter Olympics.

For the Fraser Valley, the river was originally the main transportation system. The construction of the CPR, and later the Canadian National Railway and British Colum-

bia Electric Railway, made the region accessible. Road systems were built in the early 1900s, and eventually the construction of the Trans-Canada Highway and other highways linked Vancouver and the Fraser Valley to the rest of the province and south to the United States.

Favourable climate, superb natural features, highways, railways, port facilities, an international airport, and many commercial links to the rest of Canada, Asia, and the world make Vancouver a world city. This region has become the focus of the high-tech and film industry in the province along with tourism, international banking, finance, insurance, real estate, the head offices of resource-based industries, and most international immigration to the province. Forestry, fishing, and agriculture, the region's main industries historically, continue as important sources of employment. As well, many economic and administrative activities are shared with the southern end of Vancouver Island, making the combined region of the Lower Mainland and southern Vancouver Island the heartland of British Columbia. The Lower Mainland has nearly 60 percent of the province's population, and this margin will increase in the future.

Okanagan

The Okanagan Valley lies between the Cascade Mountains to the west and the Monashee Mountains to the east. There are several lakes in this valley, Okanagan Lake being the largest. The region's southern location between two large mountain chains results in a continental climate

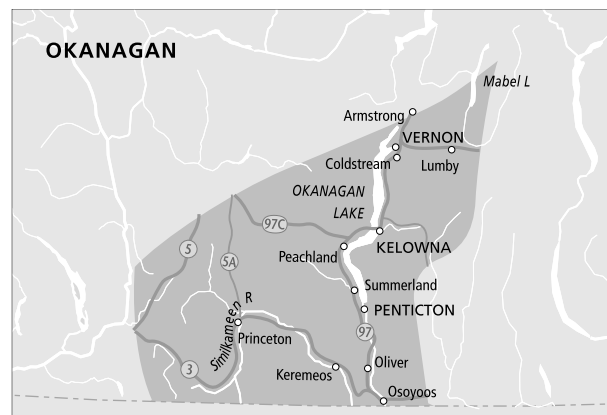


Figure 1.7 Okanagan region

with typical temperature extremes of hot summers and relatively cold winters. The vegetation of this arid valley consists mainly of grasses and sagebrush with few trees; forests grow on the moister mountain slopes.

The region became the home for the Okanagan First Nations. Some non-Native settlement occurred with the fur trade, but much more took place as the region became recognized for its farming potential as a fruit-growing area. The Okanagan is one of the few places in Canada where apples and “soft fruit” such as peaches and cherries are produced, but irrigation is necessary in this dry belt. A number of communities evolved to serve the growing agricultural settlement. Vernon, Kelowna, and Penticton, all on Okanagan Lake, became the most prominent. Boats on Okanagan Lake served an important transportation function, and later railway lines were built. The Kettle Valley line (1915) provided the link between the Kootenays and the Lower Mainland, giving access to the southern Okanagan, while a branch line of the CPR linking Kamloops to Kelowna (1925) served the northern portion of the region.

Several changes occurred after the 1960s. Tourism, which had mainly been a summer activity, expanded into a year-round endeavour, with golf courses and ski runs. The dry climate and four distinct seasons, combined with relatively low land and housing prices and easy access to the Lower Mainland, made this a favourable location for retirement. These characteristics led to increased population, urban sprawl, and land use conflicts, especially over agricultural land, until the implementation of agricultural land reserves in 1972. The motors of fishing and pleasure boats carried Eurasian milfoil into the region, where it spread through the water systems, converting once sandy beaches to a mass of weeds and jeopardizing the growing tourism industry. Eradication programs in the 1970s made use of herbicides that provided some control but also raised concern about potential carcinogenic effects.

Other industries expanded in the region, including mining and forestry, both of which increased the employment and population base. With the signing of the Free Trade Agreement between Canada and the United States in 1989, agriculture changed rapidly. Fruit crops continued to dominate, and to compete with US producers with access to inexpensive labour, BC producers developed new varieties of apple trees requiring considerably less labour. One of

the most significant changes was to the grape and wine industry. Forced to compete globally, it met the challenge by growing new grape varieties. New rules permitting the sale of wine from farms was a large part of the success of the industry, which now attracts many tourists.

The Okanagan has many physical assets and a fairly diversified economy, making it one of the rapid growth regions in the province (Table 1.2). Within the Okanagan, Kelowna has become the most important service, administrative, and manufacturing centre, with a regional airport and a highway link to the coast via the Coquihalla Highway. The firestorm of 2003 was particularly devastating to this community, incinerating 238 homes (CBC 2003).

Kootenay

Mountains, rivers, and valleys are the main physical features that define the Kootenay region. The rugged mountain chains run north-south: first the Monashees, then to the east of them the Selkirks, farther east the Purcells, and finally the Rockies. All the rivers and lakes in these valleys

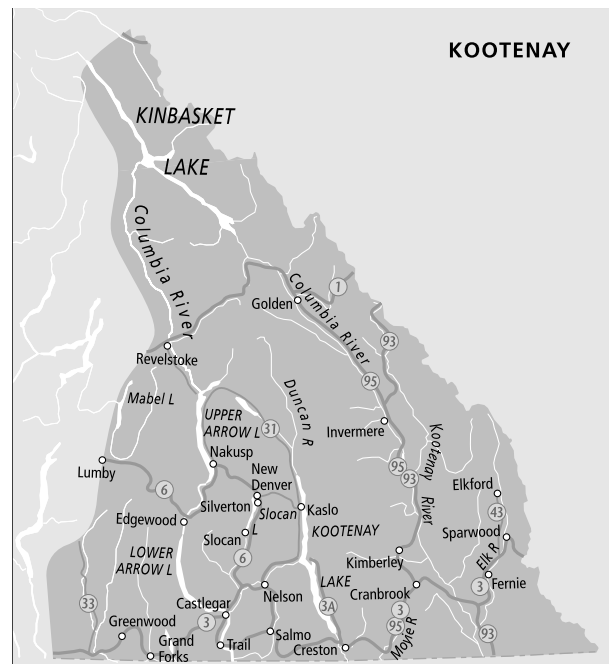


Figure 1.8 Kootenay region

are part of the Columbia River system, which exits British Columbia at Trail as the Columbia flows into the United States. Climatically, this region is similar to the Okanagan, but slightly colder in winter, not as hot in summer, and with slightly more precipitation.

Several First Nations resided in this region: the Kootenai to the east, the Okanagan to the west, and the Shuswap Nation to the north.

Census Canada has traditionally divided the Kootenays into east and west, but the divisions share a valuable mineral resource base. Gold, silver, coal, copper, lead, and zinc were all discovered and became the lure to settlement and development following the fur trade era. With the Crow's Nest Pass Agreement of 1897, the CPR became the principal landowner, provider of rail transportation, and developer of the resources. The Agreement was a deal struck between the federal and provincial governments and the CPR to run a branch line from Lethbridge, Alberta, through the Crowsnest Pass to the mineral-rich Kootenays, ending initially at Nelson. Through the Agreement and their subsequent purchase of railway grants, the CPR acquired millions of acres of land, coal deposits, metal mines, a major smelter at Trail (Cominco), and West Kootenay Light and Power. The CPR exerted enormous control over this region. Other railway companies built lines and acquired land grants, but the CPR purchased most of these over time, consolidating its hold on the Kootenay economy. The population changes in this region (Table 1.2) hide the boom and bust cycles experienced by individual mines and smelters. The list of **ghost towns** in the Kootenays is sufficient to warrant several books and articles (Barlee 1970; 1978a; 1978b; 1984).

Historically, settlement patterns in the area have been influenced mainly by mineral exploitation, transportation developments, and agricultural opportunities. Other factors also led to settlement. For example, the Doukhobors migrated to the Kootenays in the 1930s in an attempt to escape religious persecution in Europe and political persecution in Saskatchewan. The area had good agricultural land for their communal lifestyle and appeared to be relatively isolated from government interference. In the early 1940s, many Japanese families, evacuated from the coast, were sent to communities and work camps throughout the Kootenays such as Greenwood, Sandon, New Denver, and Slocan City.

Forestry has been another resource activity in this region. The Kootenays experienced forestry expansion after 1961 with a pulpmill in West Kootenay at Castlegar and in East Kootenay at Skookumchuck. In the 1960s, the provincial government became involved in hydroelectric megaprojects. Through the "two rivers policy," the Peace River, in the northeast, and the Columbia River, in the Kootenays, were developed for hydroelectricity simultaneously. The dams also provided flood protection for cities such as Spokane in Washington State. Other dams, such as the Revelstoke Dam, were constructed later to fulfill increased electrical demand by British Columbians.

Currently, the Kootenay region remains dependent on resource development and export. Mining, forestry, and hydroelectric energy are vital to the economic well-being of the region, although both mining and forestry have seen setbacks. The closure of the Sullivan Mine (the mainstay of Kimberley from 1909 to December 2000), the slowdown in production at the Trail smelter, and fluctuating coal prices have reduced employment in mining throughout the region. Forestry has been hit by the US softwood lumber dispute. Tourism has offered some diversification, as the region has many hot springs and lakes, and opportunities abound for skiing, hiking, and sight-seeing. Investments in tourist infrastructure such as ski facilities (e.g., Panorama, Fernie, and Kimberley), golf courses, and casinos have increased tourist visitations. Nevertheless, being a considerable distance from major urban populations in Alberta, British Columbia, and the United States, the region is likely to show slow overall growth in the future.

South Central Interior

The south central interior is largely identified by the Southern Interior Plateau. The region extends west of Lillooet to Revelstoke on the Columbia River, but it is the Thompson River system that mainly defines this region. The Thompson River valley is hot in summer and cold in winter, with precipitation occurring mainly on the surrounding mountains. The Shuswap Nation of the Interior Salish have been the traditional users of the land.

Early European interest in this region was due to furs and gold. The Thompson River was an important "highway" for the fur trade, and Kamloops was established as a fur trade post in 1812. Small amounts of gold were dis-

of wind (that is, wind flowing from the west). Its northern location brings considerable exposure to the Aleutian low pressure system, which brings much rain in the summer and snow in the winter. The Skeena, Nass, and Stikine are the largest of the very significant river systems flowing to the Pacific.

The north coast has been home to high density populations of First Nations, whereas First Nations in the northwest have had much lower populations. A number of factors led to early European development of north coast/northwest region. In the late 1700s, the sea otter trade aroused considerable interest. The Russians, who erected fur trade posts across Alaska and the Panhandle – the strip of Alaska that extends south along the coast – were the first to exploit these valuable furs. They laid territorial claim to Alaska, thus cutting off the northwest from the sea. Subsequently, Russia sold this territory to the Americans in 1867. Without access to the Pacific, the northwest portion of this region was left largely to overland fur trade interests.

Other resources encouraged temporary settlement. Salmon was valuable, for example, and canneries became evident by the late 1800s and early 1900s, especially at the mouth of the Skeena and the Nass and along the coast. Except for those at the mouth of the Skeena, most disappeared in the 1950s with improvements in fishing technology. Coal was discovered north of Prince Rupert and was mined for several years until the richer and more accessible coal mines of Nanaimo and other Vancouver Island locations were developed in the 1850s. Small amounts of gold were discovered on the Queen Charlottes in 1850 and on the Skeena River in 1863, but no gold rush occurred in either case. In 1898, the Yukon gold rush opened up the northernmost portion of the region. The famous Chilkoot Pass, and the building of the White Pass and Yukon Railway in 1902, meant that most gold seekers passed through the northern tip of British Columbia before entering the Yukon. There was plenty of interest in this region in this period but little permanent settlement.

The completion of the CNR to Prince Rupert in 1914 was another important event, and it increased permanent settlement. Charles Hays, a prominent entrepreneur in the early history of Prince Rupert, was a major shareholder of the railway. He was an industrial waterfront landowner

and an avid promoter of the town, but he never saw his vision materialize – he was a passenger on the Titanic in 1912 and, unfortunately, was not counted among the survivors. Prince Rupert was also the site of an early pulpmill, which encouraged growth as well. A copper smelter was built at Anyox, north of Prince Rupert, but lasted only until the Depression. The Second World War prompted construction of the Alaska Highway, giving some accessibility to the remote northwest portion of the region. One of the first areas outside the Lower Mainland to expand with the post-Second World War boom was Kitimat. This planned town was built to house the workers for a new aluminum plant in the early 1950s.

As in other regions, the mining and forest industries in the north coast/northwest region underwent major expansion beginning in the 1960s. The Stewart-Cassiar road linked the Alaska Highway through the northwest to Prince Rupert. A major copper mine near Stewart, a large open-pit mine for asbestos at Cassiar, and a number of small gold mines brought employment to these rather isolated locations. The development of Quintette and Bullmoose mines and the new town of Tumbler Ridge in the Peace River region – a coal mining region known as northeast coal – in the early 1980s resulted in the rail line being double tracked to Prince Rupert and a large coal port being built at nearby Ridley Island. A coal port is a “super port” with facilities for unloading coal from trains and loading it onto large ocean-going vessels. A planned expansion of the aluminum smelter at Kitimat was cancelled in 1995 for environmental reasons, but aluminum production remains important to the region. The forest industry expanded in a number of directions. Much of the valuable timber from the Queen Charlottes was harvested and barged south for the mills of the Lower Mainland. A pulpmill was opened at Kitimat in the 1960s. The pulpmill at Prince Rupert was upgraded, and logging and sawmilling expanded throughout the region. Prince Rupert has emerged as the largest centre for the region, but the threat of its old pulpmill closing, along with other old sawmills in the area, puts into perspective the importance of the forest industry to this city and the region as a whole.

Northeast of Prince Rupert, the Nisga’a of the Nass River Valley were the first to enter into a modern peace treaty

in British Columbia (signed in 2000), setting a precedent for future treaties throughout the province. The treaty resulted in a cash settlement, land ownership (i.e., their land base is no longer a reserve), a Native-owned forestry company, and a substantial share of the Nass River commercial salmon fishery.

There are few roads or rail lines through this area even today, and its growth is tied closely to resource development. The north coast/northwest region is slow growing, and recently, population has declined.

Peace River/Northeast

Most of the Peace River/northeast region does not fit the broad physical description of British Columbia as a mountainous, vertical landscape. This flat, sedimentary region

east of the Rockies is physiographically similar to the prairies. The two major rivers, the Peace River in the south and Liard River in the north, are part of the Mackenzie River system, which drains into the Arctic Ocean. The region contains areas of permafrost, bog, and boreal spruce forests. Temperatures are cold in winter and surprisingly warm in summer, when the days are long, inducing **convection precipitation**.

North West Company fur traders were the first non-Natives to enter the region, and it is here that the earliest fur trade forts in British Columbia were erected. Discoveries of gold on the Peace River in the 1860s warranted the inclusion of this territory into British Columbia, but the finds were insufficient to sustain permanent settlement. The Yukon gold rush at the end of the nineteenth century initiated Treaty 8, covering the region north of Edmonton, the northwest corner of Saskatchewan, and the Peace River/northeast region of British Columbia. The Canadian government believed that this would be a route to the gold fields and that the treaty would be a means of avoiding conflict. The First Nations of the Peace River/northeast region were the only people to be included in a numbered treaty in the province.

Few agricultural settlers ventured this far north until the homesteads of the south and central Prairies were no longer available. The development of hardy, early maturing wheat facilitated agricultural homesteads by the 1920s and '30s. Problems of accessibility were improved when the rail line from Alberta was extended to Dawson Creek in 1930. The Alaska Highway was constructed during the war and Dawson Creek became Mile 0, helping to open up the region. The federal government made more farmland available at the end of the Second World War for returning servicemen. The PGE was finally extended to Fort Nelson by 1971. Wheat farming on the excellent soil and cattle rearing have been the main agricultural activities of the Peace River area.

The discovery and development of oil and natural gas in the 1950s encouraged investment, the building of pipelines, and the movement of considerably more people to this region. By the 1960s, the Peace River had become one target of the massive hydroelectric plan referred to as the two rivers policy. The plan involved constructing the W.A.C. Bennett Dam, which in turn created the largest reservoir, or artificial lake, in the province, Lake Williston. As well,

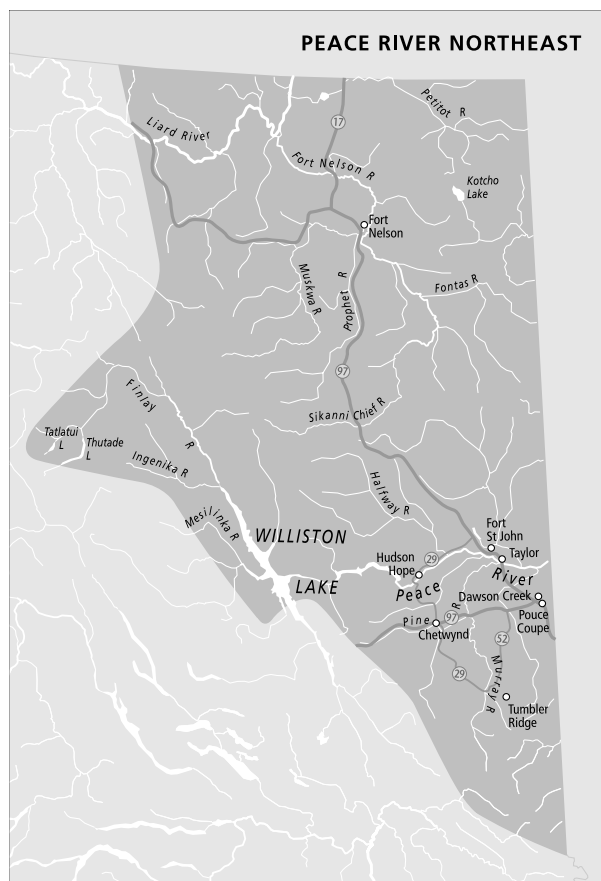


Figure 1.12 Peace River/northeast region

transmission lines were built to connect the hydroelectric power source to southwestern British Columbia. All this attracted even more people to the Peace River. The energy crisis, beginning in the early 1970s, sparked another round of oil and gas exploration and development.

The sedimentary basin also contained coal, and in the early 1980s, northeast coal began to be developed in the area. The new town of Tumbler Ridge housed the miners, an electric rail line of the British Columbia Railway (formerly the PGE) was constructed, and millions of dollars were spent upgrading the CNR line from Prince George to Prince Rupert and, as discussed above, building a coal port at Ridley Island. The costs borne by both provincial and federal governments to export the coal were massive. Unfortunately, the world market demand and price for coal declined, and so did the contracts with Japanese buyers. The Quintette mined closed in 1999 and the Bullmoose in 2003, leaving Tumbler Ridge struggling to convert to a retirement, tourist, and recreation community.

Today Fort St. John and Dawson Creek are the largest centres in the Peace River/northeast region. The forest industry employs many people in two pulp mills, sawmills, oriented strandboard plants, and a plywood mill. Agriculture has been difficult because the price of grain has been low consistently, and in 2003 the beef industry was hit by bovine spongiform encephalopathy (BSE, also called as “mad cow disease”). BC Hydro has brought the controversial Site C Dam proposal, on the Peace River near Fort St. John, out of mothballs, which has many farmers, environmentalists, and others concerned about another flooding of the Peace River valley. Oil and natural gas particularly continue to be important, and exploration for coalbed methane is taking place. There is also an expectation that the price of coal will rise, leading to new coal mines and, potentially, the re-opening of Quintette. Tourism has increased in response to a variety of recreational opportunities, the diversity of the landscape, and the discovery of dinosaur footprints at Tumbler Ridge and near the W.A.C. Bennett Dam. The Alaska Highway continues to be a major tourist attraction.

With all of this, however, comes the potential for conflict between the resource industries and those interested in preserving the wilderness. The Muskwa-Kechika Management Area Act, signed in 1998, attempts to accommodate all interests in the very large wilderness region from

Lake Williston north to the Yukon border. The economy and growth of the Peace River/northeast region is tied to its diverse resource endowment. It is a large region, the population is relatively small, and growth, or decline, occurs in relationship to resource demand.

SUMMARY

Geography is a practical discipline that assesses the human and physical factors influencing the surface of the earth. The focus in this text is the landscapes of British Columbia. The province is divided into eight regions for the purposes of examination in the first and last chapters, but the remaining chapters employ a thematic, or topical, approach. The history of what has gone on before is an important theme for all chapters.

Time-space convergence and spatial diffusion are basic geographic concepts essential to understanding movement over space and through time. Statistics, graphs, and maps are common tools and techniques of the geographer whereby the province and its regions can be more fully understood.

The regional perspective is important, not only in recognizing British Columbia’s unique physical and human attributes, but also in assessing the more global and external forces shaping this province. Both external and internal factors influence growth and development, but not equally throughout the province. We have seen that some of the province’s eight regions have grown considerably more than others.

Most important, *Geography of British Columbia* has been written with a minimum of geographic jargon in its attempt to tell the stories of human and physical influences shaping the landscapes of this province.

REFERENCES

- Barlee, N.L. 1970. *Gold Creeks and Ghost Towns of Southern British Columbia*. Summerland, BC: Self-published.
- . 1978a. *The Best of Canada West*. Langley, BC: Stagecoach.
- . 1978b. *Similkameen: The Pictograph Country*. Summerland, BC: Self-published.
- . 1984. *West Kootenays, the Ghost Town Country*. Surrey, BC: Canada West Publishers.
- Census of Canada. 1951. *British Columbia Population by Census Subdivisions, 1871-1951*. Table 6/6-84 to 6-88. Ottawa.

- . 1971. *British Columbia Population by Census Subdivisions, 1961 and 1971*. Table 8/8-92 to 8.96. Ottawa.
- Dearden, P. 1987. "Marine-Based Recreation." In *British Columbia: Its Resources and People*, ed. C.N. Forward, 259-80. Western Geographical Series vol. 22. Victoria: University of Victoria.
- Gould, P.R. 1969. *Spatial Diffusion*. Resource paper no. 4. Washington, DC: Association of American Geographers.
- Gregory, D. 2000. "Regions and regional geography." In *The Dictionary of Human Geography*, ed. R.J. Johnston, D. Gregory, G. Pratt, and M. Watts, 687-90. 4th ed. Oxford: Blackwell.
- Harris, C. 1997. *The Resettlement of British Columbia: Essays on Colonialism and Geographical Change*. Vancouver: UBC Press.
- Hébert, A. 2001. "Québec: The Core of First Time." In *A Passion for Identity: Canadian Studies for the 21st Century*, ed. D. Taras and B. Rasporich, 79-86. Scarborough, ON: Nelson Thomson Learning.
- McCune, S. 1970. "Geography: Where? Why? So What?" *Journal of Geography* 7 (69): 454-7.
- Muckle, R.J. 1998. *The First Nations of British Columbia*. Vancouver: UBC Press.
- Pudup, M.B. 1988. "Arguments within Regional Geography." *Progress in Human Geography* 12: 369-90.
- Renwick, W.H., and J.M. Rubenstein. 1995. *An Introduction to Geography: People, Places, and Environment*. Englewood Cliffs, NJ: Prentice Hall.
- Robinson, J.L. 1972. "Areal Patterns and Regional Character." In *Studies in Canadian Geography: British Columbia*, 1-8. Toronto: University of Toronto Press.
- Stanford, Q.H., ed. 2003. *Canadian Oxford World Atlas*. Don Mills, ON: Oxford University Press.
- Wood, C.J.B. 1979. "Settlement and Population." In *Vancouver Island: Land of Contrasts*, ed. C.N. Forward, 3-32. Western Geographical Series vol. 17. Victoria: University of Victoria.

INTERNET

- BC Stats. 2004a. "British Columbia Municipal Census Populations, 1921-1971." www.bcstats.gov.bc.ca/data/pop/popstart.htm.
- . 2004b. "Municipal and Regional District Total Population Estimates, 1981-2004." www.bcstats.gov.bc.ca/data/pop/popstart.htm.
- CBC. 2003. "BC Fire Talk Tape." Radio One. 14 November. www.cbc.ca/thecurrent.
- Statistics Canada. 1983a. *Historical Statistics of Canada*. Catalogue 11-516-X1E. Population 1871-1971, series A2-14. www.statcan.ca.
- . 1983b. *Historical Statistics of Canada*. Catalogue 11-516-X1E. Natural increase and net migration 1931-1976, series A339-49. www.statcan.ca.
- . 1983c. *Historical Statistics of Canada*. Catalogue 11-516-X1E. Rural and urban population 1871-1971, series A67-69. www.statcan.ca.
- . 2001a. Population 1981-2001. CANSIM Table 051-0001. <http://cansim2.statcan.ca>.
- . 2001b. Rural and urban population 1981-2001. CANSIM Table 109-0200. <http://cansim2.statcan.ca>.
- . 2004. Natural population increase and net migration 1976-2001. CANSIM Table 051-0013. <http://cansim2.statcan.ca>.