Socio-economic Restructuring and Health:
A Multi-method Study of Coastal Communities in British Columbia

By

Sulan DAI

M.D., Shanghai Medical University, 1983

M.A., University of Victoria, 2001

A Dissertation submitted in Partial Fulfilment of the

Requirements for the Degree of

DOCTOR OF PHILOSOPHY

in the Department of Geography

Socio-economic Restructuring and Health:
A Multi-method Study of Coastal Communities in British Columbia

by

Sulan DAI

M.D., Shanghai Medical University, 1983

M.A., University of Victoria, 2001

Supervisory Committee

Dr. S. Martin Taylor (Department of Geography)

Supervisor

Dr. Larry McCann

Departmental Member (Department Member)

Dr. Denise Cloutier-Fisher

Departmental Member (Department Member)

Dr. Rosemary Ommer

Outside Member (Department of History)

Dr. K. Bruce Newbold

External Examiner (McMaster Institute of Environment and Health, McMaster University)

Supervisory Committee

Dr. S. Martin Taylor (Department of Geography)

Supervisor

Dr. Larry McCann

Departmental Member (Department Member)

Dr. Denise Cloutier-Fisher

Departmental Member (Department Member)

Dr. Rosemary Ommer

Outside Member (Department of History)

Dr. K. Bruce Newbold

External Examiner (McMaster Institute of Environment and Health, McMaster University)

ABSTRACT

Communities on Canada's east and west coasts have experienced profound changes as a result of environmental and economic restructuring associated with the decline of traditional resource-based industries, principally fishery, forestry and mining. This restructuring has resulted in social changes with potentially major implications for the health and well-being of individuals and communities. *Coasts under Stress* (CUS) examines the effects of restructuring on coastal communities in British Columbia and Newfoundland and Labrador. Within the CUS project, this study examines the relationship between socio-economic restructuring and health in four BC coastal communities? Port Hardy, Prince Rupert, Tofino and Ucluelet? by a community health survey and in-depth interview studies. The survey which was conducted in the summer of 2002 (N=1,204), collected information on individual health status and stress levels, lifestyles, socio-demographics, social capital and social cohesion in the four

communities. Follow-up in-depth interviews were conducted with 41 survey respondents and an additional 25 key informants in early 2003 to explore the factors influencing people's ability to cope with the impacts of restructuring on individual and community health.

The findings of the survey analyses indicate that: the communities lag behind the province of BC and Canada as a whole in terms of self-reported health status; health status differs significantly among the communities as do recent changes in health status and stress level; the main predictors of general and emotional health status and stress are a healthier lifestyle and higher socio-economic status (SES), along with a higher level of community satisfaction. Combining the results from the in-depth interviews and the survey, it is clear that differences in health status are plausibly attributable to restructuring processes and major events in each community. There is a clear linkage between economic downturn and poorer health in the interview study. Furthermore, the interview and survey analyses reveal factors that may affect the vulnerability or resilience of individuals and communities. Employment opportunities are central to the vitality of communities and the quality of life of their residents, and are key factors related to individual and community resilience or vulnerability.

The study concludes that socio-economic restructuring has had an impact on the health of BC coastal communities and their residents in the last two decades, especially in the last ten years. While traditionally resource-dependent industries have declined, the emergence of new alternative economic activities has not been strong enough in the coastal communities to withstand the economic downturn brought about by the restructuring process that has increased employment stress for both residents and their communities. Employment stress resulted in poorer health for residents vulnerable to the economic changes, such as people who have lost jobs, who lack social/family support, and who possess low SES. Such employment stress has also affected community health in vulnerable communities, like Prince Rupert and Port Hardy, which have experienced population decline, family break-ups and a variety of social problems.

This study adds to the growing population health and health geography literature on the social determinants of health with specific application to advancing the understanding of the complex relationships between socio-economic change in coastal

communities and the health and well-being of their residents. The research demonstrates the value of combining quantitative and qualitative methods as complementary approaches to the study of community and individual health. From a policy and planning perspective, the findings inform the debate on factors fostering resilience to restructuring in communities.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF PHOTOS

LIST OF MAPS

ACKNOWLEDGEMENTS

I have been very fortunate during my studies at UVic to be surrounded by many wonderful people. I am most grateful to my supervisor Professor S. Martin Taylor, for his guidance, faith and support in my endeavours that have propelled me to the completion of my doctorial research. I would also like to express my warm thanks to my committee members: Dr. Larry McCann, Dr. Denise Cloutier-Fisher, and Dr. Rosemary Ommer. Their inspiring thoughts, input and expertise are greatly appreciated, as well as their patience.

My study is part of the CUS project, a federally funded five-year research project. Funding for my research was arranged by the CUS project. I would like to thank the CUS research team that spans both the east and west coasts of Canada. Special thanks are due to my research assistant Heather Nelson for accompanying me during visits to the study communities—Port Hardy, Prince Rupert, Tofino and Ucluelet. I want to express my gratitude to the survey respondents and interview participants from the four communities for sharing their stories with me. I am eternally indebted to them, without whom I could not have completed this study. I have been privileged to have met so many caring individuals, who have shared not only their precious time and stories with me, but also opened their hearts to me as well.

My friends who have helped me through this process include Kathie Merriam, Jill Jahansoozi, Janet McKinnon, Moyra Brackley, Stella Chan, Alice Li and Karen Tang. My fellow graduate students Lisa, Laura, Manami, Martina, Kecia, Nanda, and John were also continuing sources of inspiration during my study period. Thanks also to Bernadette O'Reilly for transcribing all the interview tapes. In the Department of Geography, special thanks to Richard Sykes for helping to remedy my computer problems, and to Ole Heggen and Ken Josephson for their kind help in making my posters. Thanks also to Dr. Dan Smith, Dr. Olaf Niemann, Dr. Maycira Costa, Dr. Harold D. Foster, Dr. Mark Flaherty, Dr. Peter Keller, Dr. J. Douglas Porteous, and Dr. Stanton E. Tuller for all their help throughout my research.

Special thanks again to my supervisor Dr. Taylor for his support in enabling me to attend several conferences and to present my research findings. An earlier version of Chapter 3 was presented at the CAG 2004 Annual Meeting in Moncton, New Brunswick, May 25–29, 2004. An earlier version of Chapter 4 was presented at the 10th International Symposium in Medical Geography, Manchester, UK, July 14–18, 2003. An earlier version of Chapter 5 was presented at The Fifth International Interdisciplinary Conference: Advances in Qualitative Methods, in Edmonton, Alberta, January 29–31, 2004. Thanks also to the Department of Geography and the CAG Association for funding partial travel expenses to the CAG 2004 Annual Meeting.

Thanks, as always, to my husband Sen and our daughters Yichuan and Lele for their love, encouragement and support that allowed me to devote so much time to my research. Finally, many thanks to the Faculty of Graduate Studies at the University of Victoria for support in the form of providing me with a Graduate Studies Fellowship for three years.

DEDICATION

This dissertation is dedicated to all the people

in the four coastal communities? Port Hardy, Prince Rupert, Tofino and

Ucluelet? who participated in this study.

ACRONYMS

ACPH	Advisory Committee on Population Health
BC	British Columbia
CCHS	Canada Community Health Survey
CIAR	The Canadian Institute for Advanced Research
CJPH	Canadian Journal of Public Health
CPRN	Canadian Policy Research Networks
CUS	Coasts under Stress Project
EI	Employment Insurance
FVI	Forest Vulnerability Index
GDP	Gross Domestic Product
NSERC	Natural Sciences and Engineering Research Council of Canada
OECD	The Organization for Economic Co-operation and Development
QSR	Qualitative Solutions and Research
SES	Socio-economic Status
SSHRC	Social Science and Humanities Research Council of Canada
WHO	World Health Organization

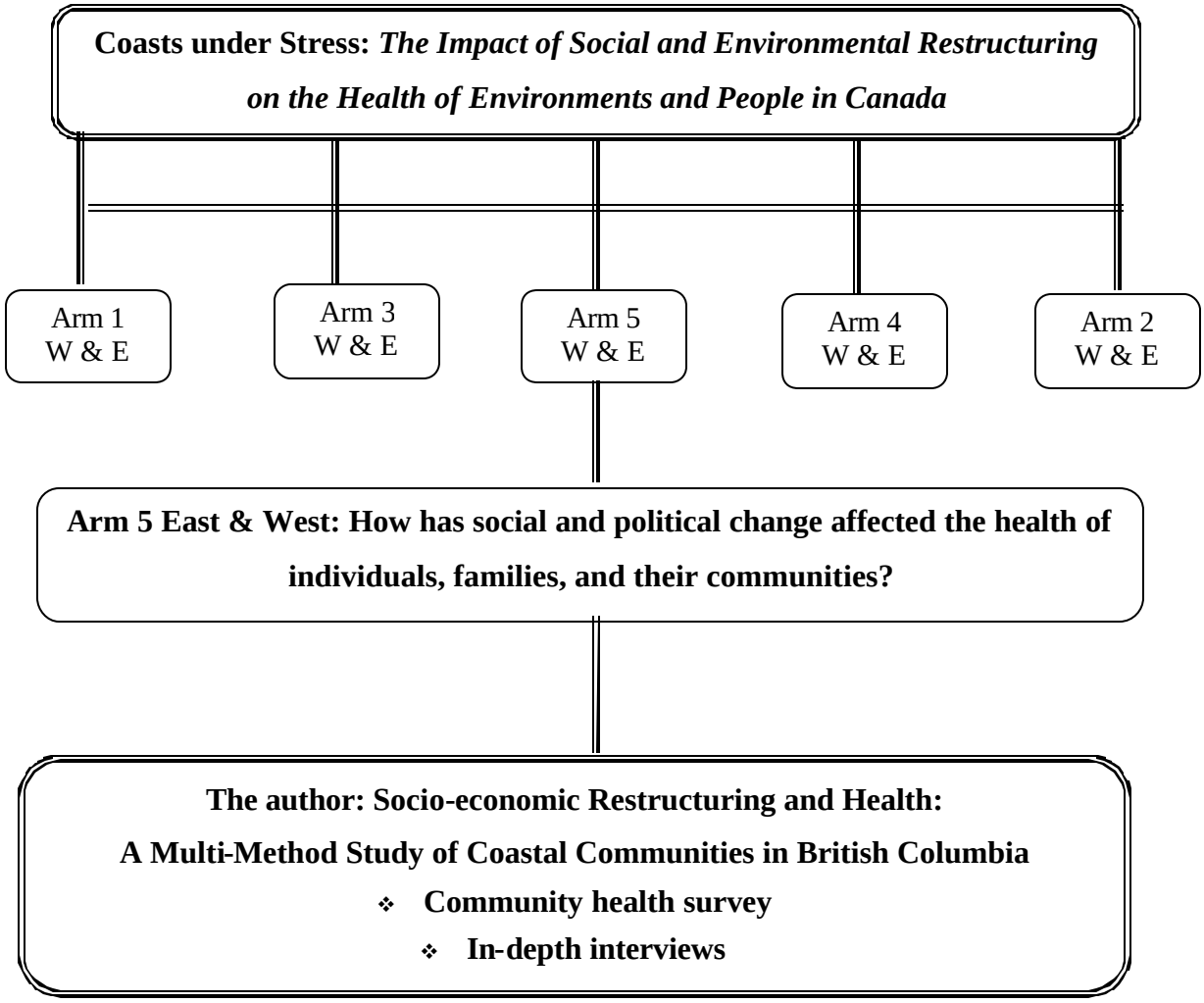
CHAPTER 1. INTRODUCTION

1.1 Background to the Research

Communities on Canada's east and west coasts have experienced profound changes as a result of socio-economic and environmental restructuring associated with the decline of traditional resource-based industries, principally fishery, forestry and mining. This restructuring has resulted in social changes with potentially major implications for the health and well-being of individuals and communities. *Coasts under Stress (CUS): The impact of social and environmental restructuring on the health of environments and people in Canada* is a five-year major collaborative research initiative, co-funded by NSERC and SSHRC, which examines the effects of restructuring on coastal communities in British Columbia (BC) and Newfoundland and Labrador.

BC coastal communities have traditionally been dependent on resource sectors. During the last two decades, primary industries such as fisheries, forestry and mining have declined. In the meantime, many new jobs have been created, mainly in the service sector and tourism industries. Within the CUS project, this study is concerned with the impacts of these changes on the health of selected communities and their residents on BC's coast (Figure 1.1). Four BC coastal communities? Port Hardy, Prince Rupert, Tofino and Ucluelet (Map 1.1) have been selected as case studies.

Figure 1.1: My Position within the CUS Project



Map 1.1: Map of BC and the Study Communities

Source: http://www.mapquest.com/atlas/main.adp?region=bcolumba

1.2 Research Objectives and Research Questions

Using a population health approach, this study examines the relationships between socio-economic restructuring and health by exploring a broad range of individual and community factors. Population health is an approach that aims to improve the health of the entire population and to reduce health inequities among population groups. To achieve these goals, the population health approach examines and acts upon a broad range of factors and conditions that have a strong influence on human health.

Considerable research has been undertaken by scholars in this field and has been the focus of several syntheses in the literature (Evans and Barer 1994; Hayes and Dunn 1998; Kawachi, Kennedy et al. 1999; Tarlov and Peter 2000; Mechanic 2002).

However, few studies have focused specifically on the relationships between socio-economic restructuring and the health of individuals and communities. Research efforts to examine these relationships are warranted because there have been profound socio-economic changes in many areas of the world in the last few decades, including the BC coast. Socio-economic restructuring is a process, which acts as a factor impacting on individual and community health. This study focuses on exploring individuals' perceptions of the social and economic conditions of communities that affect population health in the coastal communities.

In contemporary health studies, social capital and social cohesion have received increasing attention from scholars (Rehm, Fichter et al. 1993; Godsland, Leyva et al. 1998; Grootaert 1998; Lomas 1998; Putnam 2000; Cattell 2001; Glaeser 2001; Putnam 2001; Lindstrom, Merlo et al. 2002), recognizing that regional economic development, as well as individual and community health, are affected by the social relations of individuals in communities. Health Canada has viewed social capital and social cohesion as resources that benefit the health of a society (van Kemenade 2003a; van Kemenade 2003b). Social and economic factors are seen as primary determinants of health in combination with physical environment, biology and genetic endowment, and the health care system (Federal Provincial and Territorial Ministers of Health 1999; Kirby and LeBreton 2001). It follows that social determinants, including social capital and social cohesion, are a primary focus in this study.

Given the rapid changes that have impacted the coastal communities in the past two decades, the major questions in this study are: *1) does socio-economic restructuring affect the health of individuals and their communities?* and *2) what makes individuals and communities vulnerable or resilient to the impacts of restructuring?* These research questions focus on the factors that play a mediating role in the impacts of restructuring on health. In addition to socio-demographic and lifestyle factors, social capital and social cohesion are factors that may also influence restructuring impacts on the health of individuals and communities on the BC coast. In conducting this research a mixed method approach has been employed. Initially, the relationship between individual/ community health outcomes and socio-economic restructuring was examined using data collected by means of a cross-sectional survey conducted in the four study communities. Factors affecting residents' resilience or vulnerability to impacts of restructuring were explored by in-depth interviews.

1.3 Scope and Definitions

This study examines the relationship between restructuring and health in four communities along BC's coast. However, in the BC coastal context, restructuring is not a single event but rather is a cumulative process that has lasted for more than two decades. In contrast to other studies (Kasl and Cobb 1982; Kessler, Turner et al. 1988), this study does not focus on short-run impacts of a specific event, such as major job losses due to the closure of a major business, but instead examines the health status of individuals and communities following cumulative changes to a local economy over a longer period of time.

The definition of socio-economic restructuring employed in this dissertation refers to changes in community size and demographics, changes in health delivery and education, changes in income and income distribution, changes in working conditions and employment opportunity, changes in cultural diversity, and changes in the structure of industries. Such changes affect the social determinants of health and health outcomes of individuals and communities (Wilkinson 1996; Williams, Gabe et al. 2000; Ommer 2002).

Communities consist of people who share similar values and institutions (Bell and Newby 1971). Community components include locality, interdependent social groups, interpersonal relationships, and a culture that includes values, norms, and attachments to the community as a whole as well as to its parts. Community can also be viewed as a system. This system includes individuals and subsystems and the interrelationships among people and the subsystems (Thompson and Kinne 1990). Vulnerable communities tend to be geographically remote and highly resource-dependent and lack diversified economies. These communities are at risk of decline during socio-economic restructuring.

Vulnerable and resilient individuals are those who have experienced negative socio-economic change, such as job loss and financial problems, with poor or fair health status and high stress level; resilient individuals are those who have improved their personal employment and economic situation, and who have very good or excellent health status and low stress level.

Health has been defined by the World Health Organization (WHO) in 1986 as the extent to which an individual or group is able on the one hand to realize aspirations and

satisfy needs, while on the other hand, to change and cope with the environment. Health is therefore seen as a resource for everyday life. It is a positive concept emphasizing social and personal resources, as well as physical capacities (World Health Organization 1986).

Population health recognizes that health is a capacity or resource rather than a state. This definition corresponds primarily to the notion of one being able to pursue one's goals, to acquire skills and education, and to grow. This broader idea of health recognizes a range of social, economic, physical and environmental factors that contribute to health. A meaningful articulation of this concept of health is the capacity of people to adapt to, respond to, or control life's challenges and changes (Frankish 1996).

Stress occurs at different levels. At a regional level, the BC coastal region experienced a decline in resource-based economy over recent decades. BC coastal communities were especially vulnerable to the negative impacts of national and international economic changes. At a community level, while most communities are under continuous social, economic and environmental pressures, some have become marginalized by national and global economic changes. As a result, stressed communities have experienced population decreases associated with economic decline (Barnes, Hayter et al. 1999; Coastal Community Network 2002b). At an individual level, socio-economic restructuring results in environmental, social and internal demands that require individual and family level adjustments to behaviour and lifestyles (Aneshensel 1992; Thoits 1995).

Social capital is a resource that arises from the social relations of individuals who share membership in a common social structure. Trust, obligations, expectations, norms, relations of authority, and shared information all exemplify social capital; it is one of the

significant domains of social cohesion. Social capital can be measured in several ways. Health Canada (2003) has measured social capital through trust, social support and immediate networks, civic participation and social engagement, income distribution, and health. In Canada, social cohesion refers to the ongoing process of developing a community of shared values, shared challenges, and equal opportunities within the country, based on a sense of trust, hope, and reciprocity among all Canadians (SSCSAST 1999). The measurements of social capital and social cohesion in this study focus on characteristics of social relationships in a specific locality. Such characteristics primarily involve perceptions of socio-economic conditions and relationships between residents and their communities. Social capital measures include residents' attitudes towards their community and behaviours of how residents themselves function in their community. Social cohesion measures focus more on the extent of relationships between residents and their community, specifically, the degree of community attachment, and whether they have social/family support.

1.4 Outline of the Dissertation

Five chapters follow this introduction. Chapter 2 presents selected information on the study communities and related history of BC. Chapter 3 provides a review of the literature and an overview of the research design and methodologies. The focus is on the development of conceptual frameworks to guide the research, particularly for conducting the survey and in-depth interviews.

Chapter 4 presents analyses of data from the cross-sectional community health survey. This survey was conducted by telephone in 2002 with 1,204 participants. Information on self-reported health and stress levels, lifestyle, socio-demographics, and

attitudes towards the community environment and community involvement were collected.

Chapter 5 explores factors affecting residents' resilience or vulnerability to the impacts of restructuring. Following the community health survey, in-depth interviews were conducted with 41 survey respondents and an additional 25 key informants in early 2003. The interview transcripts were analyzed with a focus on those factors affecting community and resident resilience to negative health status changes. Findings for the communities provide a better understanding of the major factors affecting residents' resilience or vulnerability to impacts of socio-economic restructuring on health.

Chapter 6 provides conclusions highlighting the contributions, implications and limitations of this research and emphasizes directions for further research.

CHAPTER 2. STUDY COMMUNITIES

2.1 Introduction

This chapter provides a background for the survey and interview studies described in subsequent chapters. After a general discussion of BC's coastal economy in light of the coastal region's reliance on staples (i.e., logging and fishing), it emphasizes how the study communities are particularly vulnerable to changes in the global economy. To understand what makes a community distinctive, why some communities are booming while others are at risk, and what makes a community resilient or vulnerable in the process of restructuring, four coastal communities—Port Hardy, Prince Rupert, Tofino and Ucluelet were selected as case studies. Located along BC's coast, the four communities are more resource-dependent than the overall provincial economy, and they have experienced more difficult times than the province as a whole (Coastal Community Network 2002a). Additional factors considered in selecting the study communities were: 1) coverage of the resource-based industries of interest to the overall CUS project and overlap with geographical areas where other parts of the CUS project took place; 2) cultural diversity and variation in population size; and 3) variable experience of, and response to, economic and social change. Such changes include the decline of the resource-based industries (forestry, fishery and mining) on which the local economies have traditionally depended, as well as population decline (especially in Prince Rupert and Port Hardy) over the last two decades.

Located on the Pacific coast, BC covers 98 million hectares of land and freshwater. BC consists of a number of regional economies, differing significantly from

one another in both industrial structure and social composition. The province is characterized mainly by mountainous topography. As in the rest of Canada, BC's first inhabitants were First Nation peoples. Immigrants arrived from the early 19th century onwards and have prospered by drawing resources from the land (Barman 1996; Robinson 1998). Historically, natural resources provided an important source of economic strength for the domestic economy as a whole and acted as particularly important generators of overall wealth, which led to substantial job creation. Logs, lumber, pulp, paper, oil, natural gas, copper and coal are dominant staples in BC (Randall and Ironside 1996). While the province's economy continues to be highly dependent on natural resources production, BC's coastal regions have experienced "tremendous volatility in resource industries, the worst environmental conflicts in North America, uncertainty over aboriginal land claims and severe government and industrial downsizing" (Coastal Community Network 2002a). Some communities have witnessed the greatest population loss in their modern history and depression-like economic conditions in the past two decades (Statistics Canada 2001,1996; Coastal Community Network 2002a).

2.2 Restructuring in Coastal Communities

BC has a long extended shoreline that includes many islands, the largest of which is Vancouver Island, and a mountainous (plateau and range) interior dissected by a few major waterways. The province's 25,725 km coastline supports a large shipping industry through several deepwater ports. More than 60% of BC's land area is covered by forests. BC can be divided into the Vancouver Census Metropolitan Area (CMA), the Victoria CMA, and the rest of the province? a primarily resource-based hinterland or, simply, the

peripheral region (Wallace 2001; BC Progress Board 2003). The Vancouver CMA or Lower Mainland is dominated by metropolitan Vancouver and serves as BC's commercial, economic and industrial centre, containing 51% of the province's population in 2003. Many coastal communities have experienced profound changes as a result of socio-economic restructuring associated with the decline of traditional resource-based industries, principally in the fishery, forestry and mining industries. This thesis focuses entirely on coastal communities, which are strongly dependent on primary resource extraction.

Places dependent on natural resources have suffered the phenomenon of "boom and bust". In Canada, the first analysis of the economy from the perspective of resource-dependence was carried out by Harold Innis, creator of the "staple theory" (Watkins 1993). This theory explained Canada's development in terms of the development of a succession of staples which were sent to the European market (Innis 1930). After Innis, others developed the idea further. The most important of these researchers are R.E. Baldwin, Mel Watkins and Douglass North (Baldwin 1956; Watkins 1993; Barnes, Hayter et al. 2001). Baldwin laid down the preconditions for successful staple-led growth, and warned of the dangers of economies becoming trapped and dependent upon a single staple that might fail, for many reasons—changing fashion, poor technology or declining markets, for example (Baldwin 1956). He, along with North and Watkins, pointed to ways in which unsuccessful staple development would not allow places to survive successfully. Watkins argued for the importance of ensuring that the economy developed beyond the simple export of raw or merely semi-processed goods. A thriving staple-based (export-based) economy would eventually build a strong domestic economy

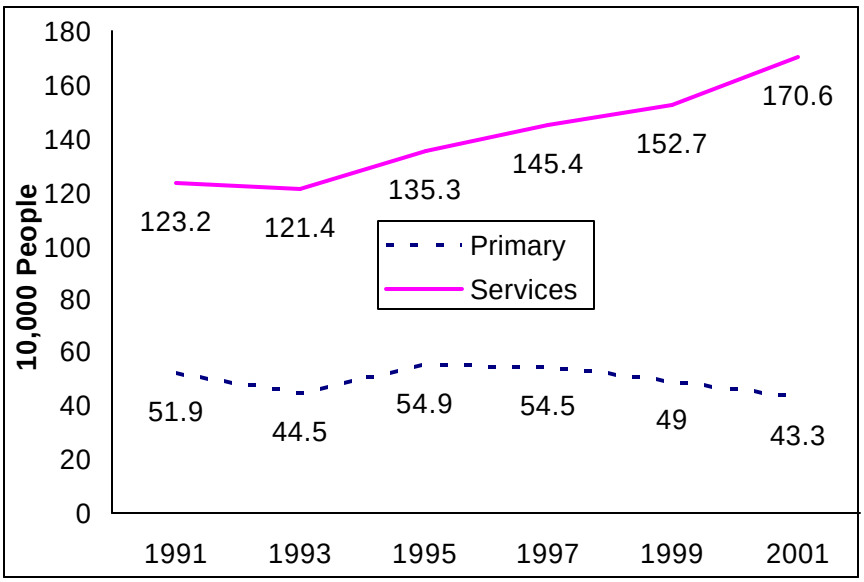
that did not have to rely on the staple exclusively, thus avoiding all the dangers of not being able to control external markets. BC has continued to focus on the export of raw or semi-processed natural products (wood, pulp, and fish, for example) and the markets have become uncertain and the resources depleted. The situation has been compounded by the province allowing many of its resource industries to be developed by foreign, multi-national corporations that are not primarily concerned about developing local economies (Barnes, Hayter et al. 2001). As a result, local resource-based economies are in trouble and communities are in decline.

Economic activities occur in a socio-political context. People and their communities form a variety of relationships, which are subject to cultural, technological, environmental, socio-economic, and political influences (McCann 1999). Economic restructuring, growth and prosperity are typically distributed unevenly within societies and between societies (Williams and Collins 1995; Draut 2002). A major issue is that the global economy has changed the way in which production and trade function. Thus, restructuring is part and parcel of the radical global changes in many industrialized countries (Magun 1998; McNeill 2000). "The changes surrounding us are not mere trends but the working of large, unruly forces: globalization, which has opened enormous new markets and, a necessary corollary, an enormous number of new competitors" (Stewart 1997). The contemporary restructuring of BC's economy is part of a transformation of the global economy (Hayter 2000).

In Canada, many social and demographic changes in the last 50 years have been in response to the transformation of the country's economic and industrial restructuring (Li 1996). Restructuring of the labour force in terms of the number of jobs gained or lost

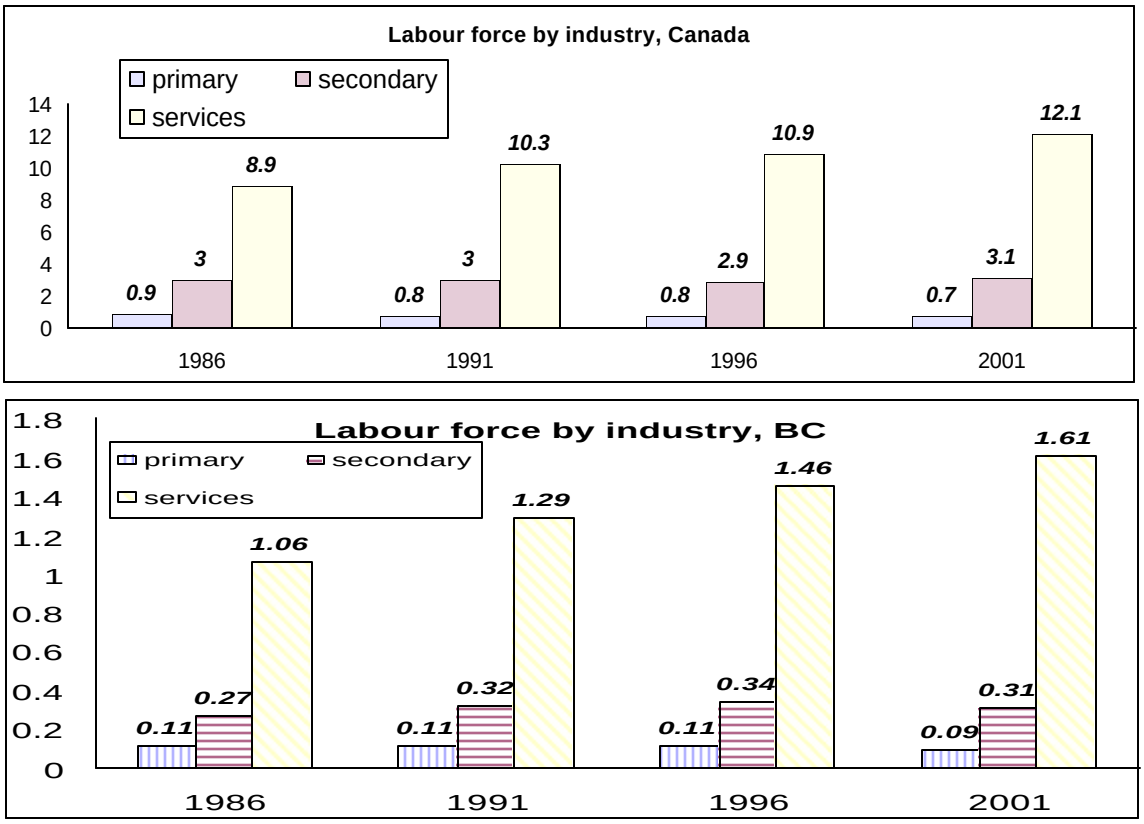
in various industries has occurred since the end of WWII (Li 1996). Despite the transformations across the country, the most dramatic structural change the Canadian economy has undergone is the rise in the services sector, which now employs three out of four Canadians (Statistics Canada 2003). Over the last 50 years between 1951 and 2001, while the country's total labour force expanded 3 times from 5.3 million to 15.9 million people, the primary sector's labour force decreased from 1.1 million to 0.7 million, while the service sector increased steadily. Like Canada, BC's labour force has undergone changes in that primary industries have decreased and service industries increased (Figures 2.1 and 2.2).

Figure 2.1: Employment by Industry for BC, 1991 – 2001



Source: Statistics Canada, Labor Force Survey (unpublished data), prepared by BC Stats. Primary industry (excluding agriculture). Services refer to accommodation and food services only.

Figure 2.2: Restructuring in Labor Force by Industry, Canada and BC, 1986 – 2001



Source: Statistics Canada. Labour force in millions.

Of the various sectors of the BC provincial economy, forestry underwent the greatest expansion in the post-WWII era. New processes and products proliferated. Over the two decades from 1951 to 1971, pulp production quadrupled to over four million tons annually. Large integrated multinational corporations became the norm, not just in pulp and paper but in the forest industry generally (Barman 1996) (pp.270-297). The pace of transition increased in the 1980s. During the worldwide recession in the early 1980s, of all the provinces in Canada, BC was the hardest hit. "The BC that entered the 1980s was at one and the same time more prosperous and more vulnerable than any other provincial or regional economy in Canada" (Marr and Paterson 1980). British Columbians came to realize that the economic advantages accruing from resource dependency had their limits

and that the forest industries could be act as the economy is driver forever. When several large forestry companies collapsed, people realized that the limits for lumbering had been reached in BC (Barman 1996). A sharp economic downturn resulted in a decrease in wages; and the standard of living fell dramatically for many people who used to depend on the industry. The wages paid to the union workforce had slipped to only half of the post-WWII high (Barman 1996). The forest industry employed about 5% of BC's workers in the late 1990s, down from 7% at the beginning of the 1980s. Its contribution to the province's total GDP fell from nearly 9% to 6% during the same period (Hallin and contributing partners 2001). Clearly, BC's economic performance languished during the 1980s and the 1990s (BC Progress Board 2003).

Resource-dependent towns have difficulty in coping with socio-economic restructuring for reasons such as technological advancement, globalization and industrial organization (Barnes, Hayter et al. 2001). Many of the towns are isolated, far from other industrial centres (Randall and Ironside 1996). They are also marginal in employment, education, and even in population health. Whether or not there is a causal linkage between the economic disadvantage and poor health, the evidence is that, compared to residents in the Vancouver CMA, people in the regional hinterland tend to have a shorter life expectancy, a higher cancer mortality rate, a lower university completion rate, and a smaller number of new businesses formed (Table 2.1).

Table 2.1: Comparison of the Lower Mainland (LM) and Regional BC

	Cancer mortality[1]		Life expectancy at birth		University completion[2]		New business formations		Employment income	Employment rate %
	1990	1999	90/91	99/00	1991	2000	1994	2000	91-00	91-00
The Vancouver CMA	582.3	485.3	78.5	80.6	23.2	32.8	17,128	14,441	$13,861	61.2
Regional BC	591.6	551.0	77.9	79.7	14.2	21.7	7,824	5,965	$11,963	56.7
BC	587.2	519.7	78.2	80.1	18.8	27.7	24,952	20,406	$13,013	59.8

Source: (BC Progress Board 2002; McEwan 2004).
[1] Deaths per 100,000 population, age 45 and over; [2] Percent of population, age 25 to 54.

BC coastal communities are in a state of transition; many are experiencing change or restructuring, particularly in the forestry and fishery industries. Landed value of salmon in BC has decreased from $263 million in 1990 to $25.4 million in 1999, a 90% decline (Glavin 2000). Jobs in the fishing industry have fallen from 6,400 in 1990 down to 4,600 in 1999, a 28% drop (Glavin 2000). Saltwater angling decreased by 32% in real GDP, by 46.7% in employment and by 9.7% in revenue over the last decade (Glavin 2000).

Following a world-wide decline in major commercial fish stocks, the Pacific salmon fishery has become seriously pressured in the 1990s due to over fishing, habitat loss and pollution. In March 1996, under the "Mifflin Plan", 800 commercial salmon fishing licences were cut (Mifflin 1996), and the majority of salmon licence holders are no longer coastal community residents. "Rural communities along BC's coast are losing access to their traditional fishing grounds as ownership of the province's commercial fishing industry becomes increasingly concentrated in urban centres such as Vancouver and Victoria" (Baglole 2004). Between 1994 and 2002, BC coastal communities suffered the largest loss of their fishing licences, on average losing 45%. For example, licences in Tofino fell by 65% from 66 to 23, in Ucluelet by 60% from 80 to 32, and in Port Hardy

by 57% from 185 to 80. By 2004, of BC's 4,587 commercial fishing licences, only 15% were owned by the north coastal fishers, and only 3% by the Vancouver Island west coastal fishers, whereas 40.5% of the licence owners live in Vancouver and Victoria. An increasing number of fishers in the coastal communities are unable to afford commercial fishing licences today. The capital value of licences and quotas were more than six times the value of all the fishing vessels and equipment in the BC fishing fleet by 2003. A licence to fish salmon using a gillnet in BC can cost as much as $82,000, and a licence to catch salmon using large nets can cost $360,000. Fishers in coastal communities are seriously disadvantaged in terms of acquiring fishing licences. Many fishermen are unable to buy a fishing licence using even their homes as equity, because of the low value of their homes. More fishing licences will end up with corporations such as the Canadian Fishing Company (Canfisco). It owned 242 licences in various BC fisheries in 2002, including 93 licences to fish salmon. The estimated value of the Canfisco's fishing licences and quota in 2003 was $123 million. In the meantime, many First Nations communities owned no licences for commercial fishing (Catch-22 research team 2004).

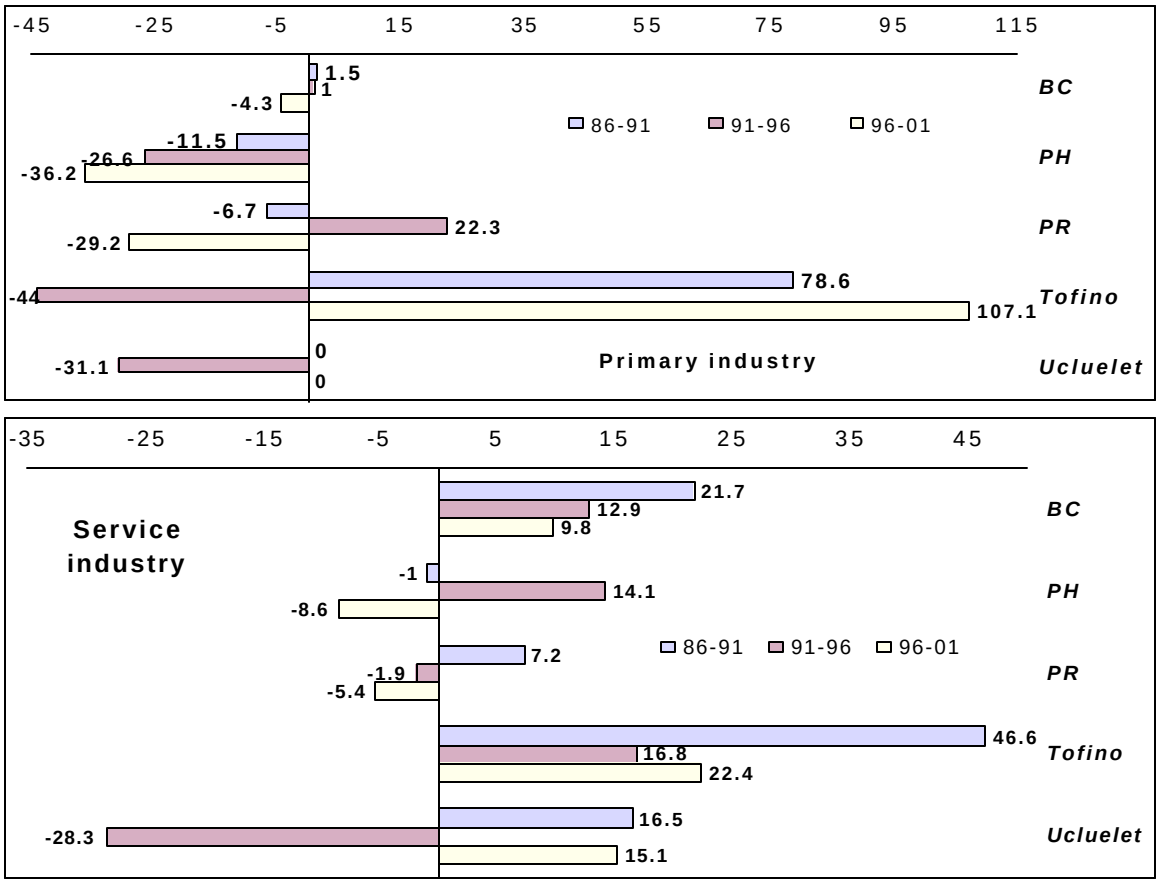
BC's fishing policies resulted in an overcapitalized and privatized fishery ownership which damaged the viability of coastal communities and their residents, especially, First Nations, and the next generation of the fishers. As a result, traditional fishers are forced to watch as fishing vessels from Vancouver and Victoria fish in the waters near their homes. "It's a tragedy," says Ian Gill, president of Ecotrust Canada. "The one thing people in these communities know how to do is fishing. And they are not getting the opportunity to do so. They cannot compete for these very expensive licences" (Baglole 2004; Catch-22 research team 2004).

The problem is not only in the fishing sector. “Rural people and First Nations are being squeezed out of the fishery and there is fear that forestry tenure reform could do the same, decoupling local manufacturing requirements from tree/forest licenses” (Coastal Community Network 2002b). BC’s coastal forest region consists of 20 million hectares of the most productive forest land in Canada. Each year, the BC coastal forest industry contributes about $4 billion in wages and benefits to workers and families. It provides almost 100,000 direct and indirect jobs and supports more communities than all other business sectors combined. But this industry is in a steady decline that began more than 15 years ago. There are at least 23,000 fewer people working in the industry in the 2000s than in the 1980s (Davies, McElligott et al. 2003). The dramatic increase in international competition means that customers have more choice than ever before. In the mid-1980s, only six regions of the world supplied Japan with wood products. Today, more than 100 regions compete for its business. Since 1992, European competitors, such as Sweden and Finland, captured $800 million in annual sales to Japan from BC coastal forest products companies. During the last 15 years, there has been decline in virtually all of the coastal forestry sector’s key markets and, as a result, lumber shipments to the US and Europe declined by 40% and 75%, respectively (Davies, McElligott et al. 2003). Between 1998 and 2002, eight large sawmills, two pulp mills and two panel board mills closed on the west coast. Job losses since 1990 are 5% in logging, 36% in pulp mills and 40% in saw mills (Coastal Community Network 2002a).

Economic change in coastal communities is not isolated from trends in global economic development. In the event of changes in the global economy, communities necessarily experience transition, resulting in either decline or growth. Global economic

pressures have had significant economic and social impact on these BC coastal communities (Glavin 2000). Stresses are being felt particularly in communities that have been traditionally dependent upon staple production in the fishery, forestry and mining industries for employment and social stability (BC Stats 2002).

Figure 2.3: Change of Labor Force in Primary and Service Industries (%) by Community, 1986–2001



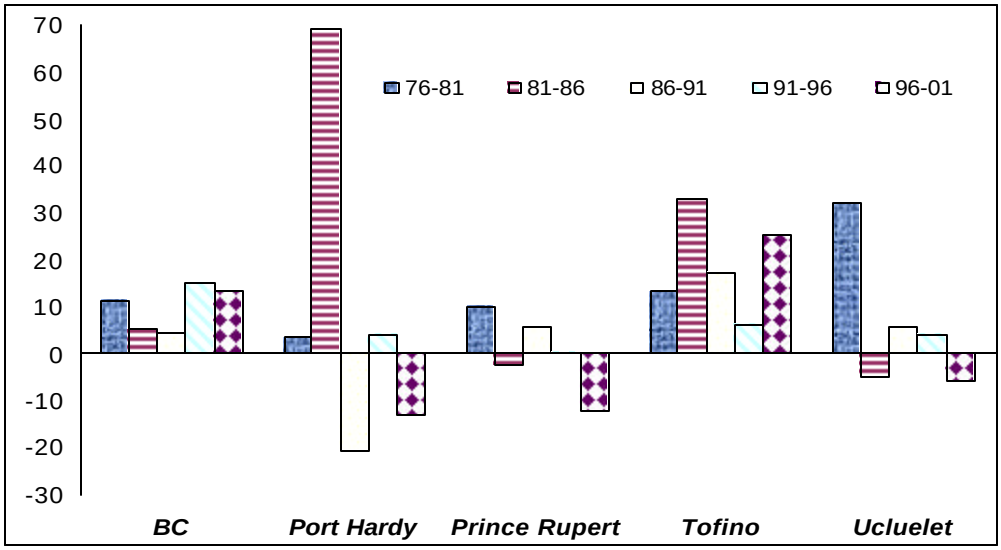
Source: Statistics Canada (1986, 1991, 1996, 2001). Primary industry: Agriculture and other resource-based industries.
Service industry: Wholesale and retail trade, finance and real estate, health and education.
PH: Port Hardy, PR: Prince Rupert.

Major events at the global level have precipitated significant employment changes, including job losses. As companies struggle to survive, coastal communities are marginalized in their traditional resource-dependent economy. How has this cumulative

process of change affected the health of communities and their residents? To answer this question, four coastal communities were selected. They are all relatively isolated and have traditional resource-based economies and their industrial change reflects overall shifts in BC. Figure 2.3 shows industry change, based on percentage shifts in employment levels between 1986 and 2001 in the four communities and the province. In all places, the primary sector has declined and the service industry increased, except for Tofino where the primary industry increased between 1996 and 2001 due to the development of fish farms.

Economic restructuring is reflected in a worldwide pattern of rural to urban migration. In BC's case, beyond the broad rural to urban population shifts of the 1980s and 1990s, BC's regions also experienced absolute population declines, whereas population and economic growth have been steady in the Vancouver CMA (Statistics Canada 2003). In 1931, 1 in 3 Canadians were living on farms compared with 1 in 30 in 1996 (Statistics Canada 2003). Of the four study communities, all but Tofino have experienced population losses since the early 1980s. Figure 2.4 and Table 2.2 show the population trend between 1976 and 2001 in all four communities and BC. Before 1981, population was on the rise in all the areas, but today, among the four communities, Tofino is the only one echoing the provincial trend, in positive population growth between 1976 and 2001. After experiencing a big boom period in the late 1970s, the population of Ucluelet and Prince Rupert declined in two census periods: between 1981 and 1986 and again between 1996 and 2001. The population of Port Hardy also declined twice, with the first period occurring five years later than the others (1986-1991), and the second period of decline coinciding with the others.

Figure 2.4: Change of Population (%) by Community, 1976 – 2001



Source: (Moffat 2001; Statistics Canada); Statistics Canada (2002): Community Profile.

Table 2.2: Population Trends in the Communities and BC (1976 – 2001)

Population	BC	Prince Rupert	Port Hardy	Tofino	Ucluelet
1976	2,466,608	14,754	3,653	623	1,210
1981	2,744,467	16,197	3,778	705	1,593
1986	2,883,367	15,755	6,389	940	1,512
1991	3,011,330	16,620	5,082	1,103	1,595
1996	3,456,245	16,714	5,283	1,170	1,658
2001	3,907,738	14,643	4,574	1,466	1,559
1996-2001	+13.06%	- 12.39%	- 13.42%	+25.30%	- 5.97%

Source: (Moffat 2001), (Census Canada), Statistics Canada (2002): Community Profile.

Finally, Table 2.3 provides selected information on the study communities and BC. With the exception of Tofino, the reported percentage of the First Nations population, the unemployment rate and the percentage of out-migrations are all higher than the provincial averages.

Table 2.3: Selected Information on the Study Communities

		BC	Port Hardy	Prince Rupert	Tofino	Ucluelet
Location		West Canada	The largest North Island centre	The largest North Coast centre	Pacific Rim	
Land area (km^2)		934,169.4	40.9	53.6	10.6	6.6
Year incorporated			1966	1910	1932	1952
Population	1996	3,456,245	5,283	16,714	1,170	1,658
	2001	3,907,738	4,574	14,643	1,466	1,559
Change (%)		13.05	-12.39	-13.42	25.30	-5.97
First Nations (%)	1996	3.8	3.0	31.1	4.3	10.8
	2001	4.4	5.7	29.8	8.2	12.2
Unemployment rate (%)	1996	9.6	7.9	12	9.4	16.4
	2001	8.5	5.0	9.7	7.6	15.4

Source: Statistics Canada: Community Profiles, 1996 and 2001, and Official Community Plan of each community.

Each community has experienced changes specific to its economy and population, and the remainder of this chapter provides a more detailed investigation of each community's specific responses.

2.3 Port Hardy

Situated on the protected shores of Hardy Bay, Port Hardy is the largest community on the northern end of Vancouver Island, and is connected to Victoria by Highway 19 or the Island Highway, which was constructed in 1979 (Map 2.1). First occupied about 8,000 years ago, Port Hardy has a very rich history of Aboriginal culture. European settlers first came to this area in 1904, and built an economy based on fishing, logging and mining (see Photo 2.1). The community has relied on harvesting and extraction of natural resources as the basis of its economy since it was first settled.

Map 2.1: Port Hardy and Northern Vancouver Island

Source: http://www.ph-chamber.bc.ca/map.html

Photo 2.1: Symbol of Port Hardy

Photo 2.1: Fishing, Logging and Mining? Symbol of Port Hardy.
Photo by the author, February 2003.

In the 1970s and 1980s, Port Hardy was a booming town but, since the early 1990s, it has experienced a serious economic downturn. The copper mine closed, and both fishing and logging declined. This has directly affected individuals as well as the economic base of the community. Local economy and employment is down and, as a result, municipal revenues are also down. The closure of the Island Copper Mine in 1995 resulted in the direct loss of approximately 500 union and 40 non-union jobs, along with many other jobs which had been sustained by businesses that supported the mine. The Alpha Processing Ltd. Fish plant burned down on February 21, 2003, resulting in another 200 people losing their jobs. As the work force was primarily trained in resource extraction, this example of economic restructuring dealt a heavy blow to the local people whose re-employment abilities were very limited. The social problems are obvious: in that, between 1991 and 1996, single parent families increased from 5% to 17% in Port Hardy (District of Port Hardy 1999; District of Port Hardy 2002; District of Port Hardy 2003).

This community is a place of strong contrasts between the past and the present. One informant said that the town is now *"very different…. in the 80's, it was very good; we were expanding the town, this mall was just built, there were two new malls, the population was booming, building was going on like crazy.*" The malls now have many vacant stores, and there are many closed shops on the Main Street. Another account reinforces the contrast: *"Oh boy, 20 years ago, it was just booming. I remember 20 years ago, my friend and I, we were probably in Grade 10, so we were just starting to drive, and so we had my parent's car, and I tell you, logging, fishing and mining were going*

strong up here and so it wasn't uncommon to see brand new trucks in every other driveway."

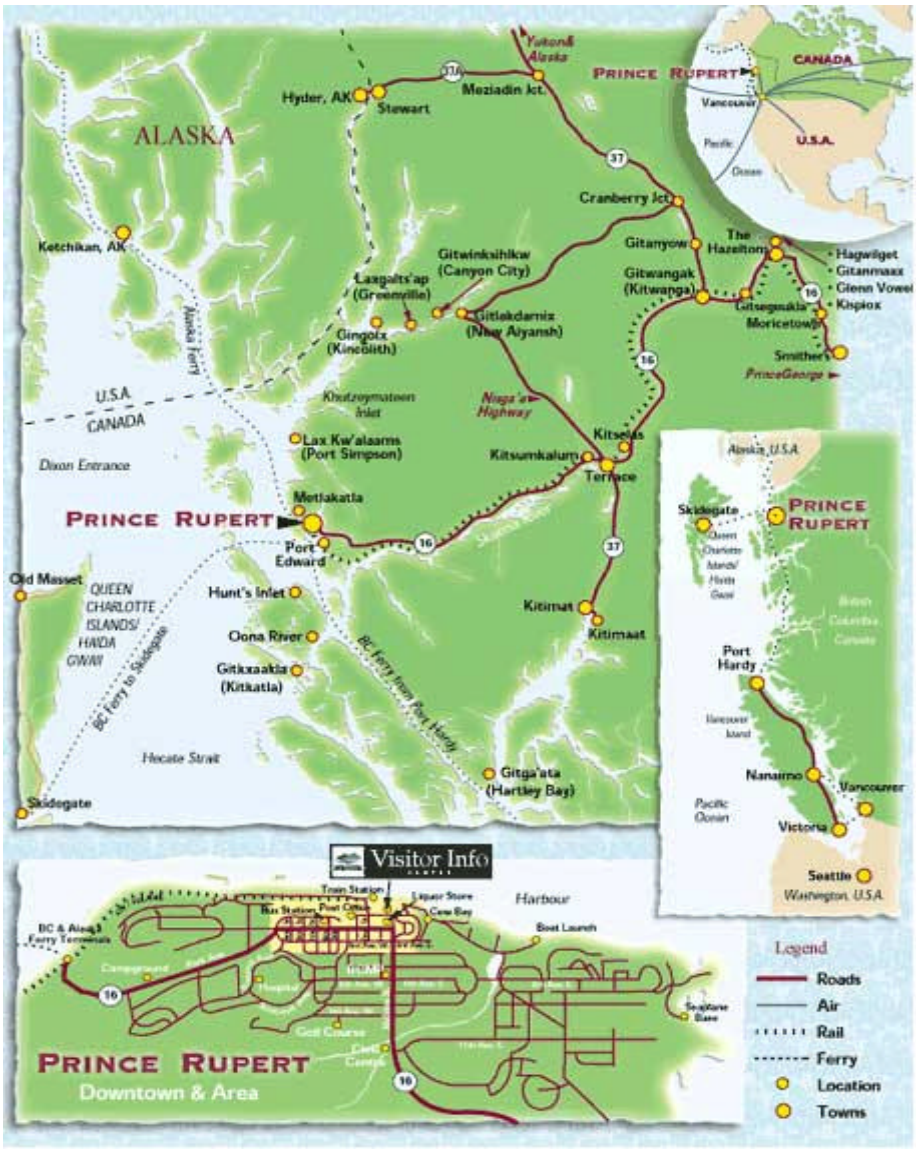
The economic pressure on students is significant and some families depend on their children for income support. "I was talking to a student yesterday, and she wasn't even spending money, it was money for the family. Yes, to support the family, this girl is 17 years old, and she is helping. She gets $300 every two weeks and she works 6 days a week after schools for 3 or 4 hours at a time, and both parents are unemployed, so herself and her sister work …That kind of information just blows me away, because I am thinking wow, when I was 17, after Christmas I still had $2,000 left in my pocket." This local resident provides an important and contrasting image of today's teens and past teens with two different economic situations. He and his peers had substantial pocket money some 20 years ago, but today's teens are struggling to make enough money to help support their families.

2.4 Prince Rupert

Port Hardy is not alone in its economic decline in the past two decades. Prince Rupert is the regional centre for BC's north coast. It is located in the western part of Kaien Island, near the mouth of the Skeena River. Kaien Island was once the meeting place of the Tsimshian and Haida—an important historical site—and the city has preserved numerous relics of its native past (Map 2.2). The city of Prince Rupert was incorporated on March 10, 1910, and held the title of being the closest North American port to Asia. Entrepreneurs shipped a variety of commodities to and from North America through Prince Rupert, while the fishing and forest industries have been major contributors to the economy throughout its history. In 1972 it was designated a national

port and in 1984 became a locally controlled Port Corporation. A general cargo and forest products terminal was completed in 1977, and it was expanded in the early 1980s. The Skeena Cellulose pulp mill was once one of the city's major employers, while grain and coal transportation also contributed significantly to its economy (Office of the Mayor 2001; Prince Rupert Economic Development Commission 2001).

Map 2.2: Prince Rupert and the North Coast



Source: http://www.hojoprincerupert.com/images/PRMap.jpg

However, over the past 10 to 20 years, Prince Rupert has been experiencing a difficult transition. Its economy has been hit hard by a protracted downturn in its major resource sectors (Office of the Mayor 2001). The recent decline in salmon stocks has had a devastating impact on the community (Catch-22 research team 2004). Moreover, although a primary shipping location and the world's third largest, natural ice-free port, as well as being BC's closest port to Asia, since the late 1990s, it has experienced a decline in shipments of grain and coal—two of the major commodities the port has handled (Robinson 1998). On December 18, 2002, the JS MacMillan Fisheries plant burned down, which resulted in 250 people losing jobs (CBC News 2002). Finally, the largest employer and major contributor to the local economy—the Skeena Cellulose Mill, which directly employed 1,100 employees and paid over $90 million annually in wages and benefits (Office of the Mayor 2001)—was totally shut down in early 2004 after struggling for five years to survive.

Not surprisingly, the downturn in these industries has had a domino effect on the city's economy. Local construction has been hit hard as a result of the lack of housing starts, as well as commercial and industrial construction. Numerous real estate companies line the main street. An experienced realtor who came to this city in 1980 has witnessed the city's boom-bust cycle. She compared the real estate market in Prince Rupert between 2002 and 2001. In 2002, units listed increased by 60%, prices plummeted by 37%, and the number of units sold dropped by 30%, while days to sell extended from 119 to 212. As she recounted, the real estate businesses were very busy, but as realtors, "it is sad to see so many of our friends and neighbours compelled by job loss and bankruptcy to leave

the city." In 1995, 74 new homes were built in Prince Rupert, but only one house was built in 2003 (Catch-22 research team 2004).

Photo 2.2: Port of Prince Rupert

Photo 2.2: A quiet place? Port of Prince Rupert. Photo by the author, March 2003.

The result of the series of economic failures has been an overall out-migration of people from the community due to a lack of employment opportunities. Importantly, many of the local skilled trades people have left to find work in other jurisdictions, while the remaining population has seen the equity in their homes drop by more than 35% over the past few years (1996-2001) (Office of the Mayor 2001). The housing vacancy rate now stands at about 25%. The cumulative effect of all the economic distress in the area has created an increase in the number of citizens who face homelessness or poverty. The number of lone-parent families with school-aged children increased by 35% from 1990 to 1999, and that percentage is higher for First Nations (50% of the students in Prince Rupert are of First Nations ancestry). Around half of the First Nations students are also

not meeting the expected standards in mathematics or reading (Office of the Mayor 2001), which bodes ill for their future employment potential.

2.5 Tofino

Further south, on the west coast of Vancouver Island, are Tofino and Ucluelet which are located approximately 42 km apart (Map 2.3). Both communities have traditionally been dependent on resource industries, particularly fishing and logging. Tofino was named in 1792 after Spanish hydrographer Vicente Tofino, who visited the area between 1773 and 1776. It is now part of the Clayoquot Sound Biosphere Reserve and adjacent to the 11-km Long Beach. It is a small community with a high proportion of First Nations people (8.1% compared to 4.4% in BC, Statistics Canada, 2001) and a low proportion of visible minorities (4.0% compared to 21.6% in BC). It has traditionally been heavily reliant upon logging and fishing. Since the 1990s, however, employment in traditional resource industries has decreased sharply, due to shut-downs in forestry and decline in the fishery.

In 1993, the Clayoquot Sound protest against logging in the old-growth forest made Tofino internationally famous. As many as 12,000 people from Canada, the US and Europe occupied the Kennedy River Bridge for three months, blocking the logging road to Clayoquot Sound. Police arrested 856 protesters in the largest mass arrest in BC history. The main logging company, MacMillan Bloedel, eventually stopped logging and was bought out (Common Ground 2003). *"Did this logging protest affect Tofino's employment*?" I inquired of Valerie Longer, who was a major organizer of the 1993 protest: "*No, not really, there were very few loggers in Tofino and the majority were*

those who lived in Ucluelet." Certainly, after the protest, Tofino quickly relied more on tourism and new fish farming companies.

Map 2.3: Tofino, Ucluelet and Pacific Rim

Source: http://www.britishcolumbia.com/Maps/?id=34

From its origins as a fishing village, Tofino has become increasingly recognized for its beautiful natural setting, whale watching, beaches and outdoor recreation. It has evolved rapidly from a small resource-based community to an international tourism destination receiving approximately 1 million visitors per year (District of Tofino 2002). Tourism has benefited the community, and Tofino has become a money-generating place, the only community out of the four study areas that has experienced a population increase in the last 25 years (Statistics Canada).

That said, the picture is not all positive, as Tofino residents continue to express many concerns, including worries about the lack of housing and the lack of a sense of community. Tourism provides low-paid seasonal jobs, and non-resident business owners fail to make contributions to the community. Conflicts also arise among different sub-groups: “old timers” vs. “newcomers”, and “environmentalists” vs. “forestry workers”. The fact that there are many non-resident property owners also creates and reinforces a sense of community fragmentation.

2.6 Ucluelet

As a community, Ucluelet is a sharp contrast to Tofino. It is approximately 100 km west of the major centre of Port Alberni and connected to it by Highway 4. Settled in the early 1870s, the name Ucluelet means “safe harbour” in a local native language. About the time of World War I, the fishing industry started there and shortly after World War II, it was a busy place (District of Ucluelet 2001). Incorporated as a village, it became a District Municipality in 1997.

Like Tofino, Ucluelet is a small community, which was heavily dependent on logging and fishing, but during the 1980s, declines in fishing and forestry negatively affected its local economy. The coastal forest industry has been in decline in the last 15 years. Specifically, 300 forest jobs were lost in Ucluelet after the Clayoquot Sound protest in 1993; and between 1994 and 2002, residents in Ucluelet also lost 60% of their fishing licences. Similar to many coastal residents, traditional fishermen can only watch as fishing vessels from other places fish the waters near their homes. Now Ucluelet is going through a period of transition by adding tourism, services and new economic sectors in an effort to increase employment. By the end of 2000, the community had to

take extreme steps to address the loss of over $250,000 in tax and other revenue that year (District of Ucluelet 2001). Today, in the early 2000s, this community is still struggling, with people now experiencing difficulty obtaining Employment Insurance (EI). For example, a total of 39 families rely solely on the food bank, especially during the winter season. The community also faces a continuing lack of job opportunities.

Here, as in Port Hardy and Prince Rupert, the current situation is in stark contrast to the 1970s and 1980s. One Ucluelet resident recalled his own experience when he first came to this town in 1975. *"Oh yes, easy to get a job. Guys with no experience would just go out and shake the herring and be instantly rich, make like a ton of money basically overnight. Because when the herring would come in, the boat owners would be looking for people, they needed people to shake the roe, so you could get a job easily, Yeah, I made $8,000 in three days for shaking herring. The money was really good, even for us, like I was working at the fish plants, and the money was good there too because we would work on, because we got our wage, but we also did like a piecework kind of thing, the faster you went, the more you could make, you would get a bonus. So we made good money too, and long hours*."

A previous business owner also made a comparison between the present and the early 1980s. *"My deckhands were making $3,000 a day, and three weeks we were out they were just bringing in the fish. We were making $4.00 or $5.00 a pound, yes that was good money*." In dire contrast, today's situation is described as being: *"Sad, because fishing is down, fishing is pretty well out of the picture and logging too. The only thing we have here now is probably the whale watching. I can't buy stuff like I used to, now I have to hold two jobs to make ends meet*."

2.7 Conclusion

This chapter serves as a background to an examination of the relationship between socio-economic restructuring and health. Situated on the BC coast, the four communities are quite distant from the provincial economic centres—the Vancouver CMA and the Victoria CMA. All four communities are characterised by a traditional resource-based economy (i.e., logging and fishing) and have undergone considerable changes in the last two decades with the resource-based economy in decline and service industries increasing. Along with the economic change, social and demographic change occurred also. Except Tofino, the other three communities have experienced significant population loss and sharp economic decline, particularly Port Hardy and Prince Rupert. By contrast, Tofino's service industry, especially the tourism industry, has steadily increased, and Tofino's population has also increased in the last two decades. This recent history of major socio-economic change sets the stage for the investigation of its impacts on the health of the communities and their residents through the community health survey and in-depth interview studies presented in chapters 4 and 5. The following chapter explores the literature on population health and socio-economic restructuring, and provides an overview of the methodologies used in the study.

CHAPTER 3. LITERATURE REVIEW AND METHODOLOGY

3.1 Introduction

Research is a careful, diligent search for new knowledge. It is an investigation or experiment aimed at the discovery and interpretation of facts, as well as the revision of accepted theories or laws in the light of new facts, or the practical application of such new or revised theories or laws (Graziano and Raulin 1996; Truman, Mertens et al. 2000). Research is guided by a paradigm: a way of breaking down the complexity of life (Reichardt and Cook 1979). To understand the complex relationships between socio-economic restructuring and health outcomes in BC coastal communities, the population health paradigm was adopted, along with a mixed methods approach, to address two main questions.

The first question is: does socio-economic changes affect the health of individuals and their communities? In this dissertation, the relationship between individual and community health outcomes and socio-economic restructuring is examined by means of a cross-sectional survey in the study communities. The second question is: what makes individuals and communities vulnerable or resilient to the impacts of restructuring? Factors affecting residents' resilience or vulnerability to impacts of restructuring are explored through in-depth interviews.

3.2. Literature Review

3.2.1 Health and Population Health

Health was defined by the World Health Organization (WHO) in 1986 as the extent to which an individual or group is able on the one hand to realize aspirations and satisfy needs and on the other hand, to change and cope with the environment. Health is therefore seen as a resource for everyday life. It is a positive concept emphasizing social and personal resources as well as physical capacities (World Health Organization 1986). According to the WHO, the definition of health has undergone changes from "absence of disease" to "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity". This new vision portrays health as a part of everyday living, an essential dimension of the quality of our lives which is influenced by people's physical, socio-economic and cultural environment. A related explanation was offered by the Canadian Minister of Health and Welfare in 1986 (p.3):

> Health is thus envisaged as a state of well being that gives people the ability to manage and even to change their surroundings. This view of health recognizes freedom of choice and emphasizes the role of individuals and communities in defining what health means to them (Health and Welfare Canada 1986).

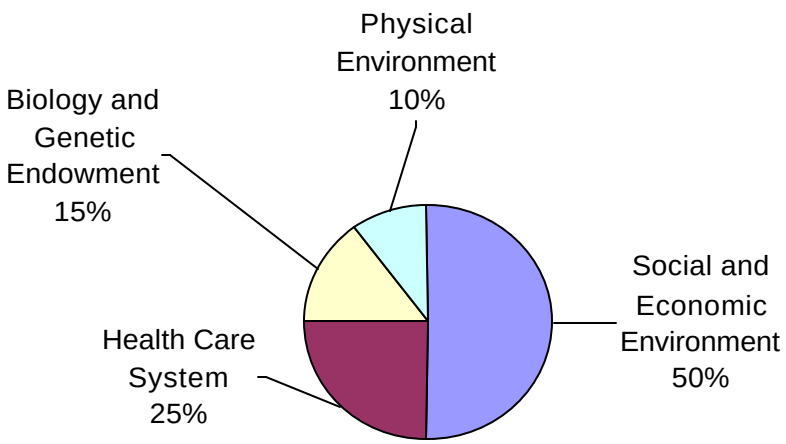
In Canada, the population health approach recognizes that health is a capacity or resource rather than a biological state (Health and Welfare Canada 1986). This definition corresponds primarily to the notion of somebody being able to pursue his/her goals, to acquire skills and education, and to grow. This broader notion of health recognizes a range of social, economic and physical environmental factors that contribute to health. Perhaps, the best articulation of this concept of health is "the capacity of people to adapt to, respond to, or control life's challenges and changes" (Frankish 1996).

As a distinct school of thought, population health has evolved over a period of two to three decades. The term *population health* was gradually agreed upon by researchers. It was frequently used in reference to the health of populations in the 1990s (Young 1998). *A New Perspective on the Health of Canadians* reported by M. Lalonde (Lalonde 1974) may be regarded as a pioneering piece in advancing the proposition that health was influenced by four broad elements: human biology, environment, lifestyle and health care organization. In January 1997, the Canadian Federal, Provincial and Territorial Advisory Committee on Population Health (ACPH 1997:7) proposed the following definition for population health:

> Population health refers to the health of a population as measured by health status indicators and as influenced by social, economic and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services (Federal Provincial and Territorial Ministers of Health 1999).

Clearly, the ACPH concept of population health was a significant step forward from the Lalonde 1974 concept, because it recognized, in a more comprehensive way, a larger number of factors that had a bearing on human health, and some of the factors were differentiated. There is a growing body of evidence about what makes people healthy (Evans and Barer 1994; Frankish 1996; Marmot 2002). The broader notion of health recognizes the range of social, economic and physical-environmental factors that contribute to health. According to the Canadian Institute for Advanced Research (CIAR), the major determinants of health are the social and economic factors which account for an estimated 50% of health outcomes (Kirby and LeBreton 2001).

Figure 3.1: Determinants of Population Health



Source: Estimation by the Canadian Institute for Advanced Research (2001).

In Canada today, population health is viewed as a major platform for health research and social policy reform (Hayes, Foster et al. 1992). Theoretically, population health is a function of a number of determinants. In other words, population health depends on a series of biomedical and non-biomedical factors. The determinants of health might include the following 12 factors (Federal Provincial and Territorial Ministers of Health 1999):

- Income and social status
- Social support networks
- Education
- Employment/working conditions
- Social environments
- Physical environments
- Personal health practices and coping skills
- Biology and genetic endowment
- Healthy child development
- Health services

- Gender
- Culture

A population health approach reflects a shift in our thinking about how health is defined. One of the major challenges in Canada's health field is how to apply the knowledge we already have about what makes and keeps people healthy, and at the same time learn more about how to enhance the health of Canadians (Strategic Policy Directorate 2001). A population health approach establishes, measures and analyzes the indicators for the health status of the population as a whole and/or population groups. It is critically dependent on the social and physical environments in which we live and work. Since the socio-economic environment is a vital factor affecting the health of population (Kirby and LeBreton 2001), it follows that the impacts of restructuring process on population health was a major focus of the CUS project, and the prime focus for this study. Population health at the community level is much more than simply the aggregate of the health of the individual members of the population; it also involves the issues of inequalities in health and inequitable access to the determinants of health across a community, and more importantly, how well the community functions, whether the community as a whole is healthy (Hancock, Labonte et al. 1999). As a component of the CUS project, my dissertation seeks to apply the concept of population health in examining the effects of socio-economic restructuring on the health of coastal communities and their residents.

3.2.2 Socio-economic Restructuring

In the context of the CUS project, socio-economic restructuring refers to changes in community size and demographics, changes in health care delivery and education,

changes in income and income distribution, changes in working conditions and employment opportunities, changes in cultural diversity, and changes in the structure of industry sectors. For example, the resource industry declined and the service sector increased, and in turn, such changes affect the social determinants of health, and health outcomes of individuals and communities (Wilkinson 1996; Williams, Gabe et al. 2000; Ommer 2002).

The term "restructuring" was first used in the mid-1970s in the economic sector to describe measures taken by industries to adjust to changing global trade conditions in the wake of World War II (Kearns and Joseph 1997; Joseph and Knight 1999; Leach and Winson 1999). Studies of restructuring have been on the rise in recent years. They now encompass a consideration of the various outcomes of restructuring, which are inscribed on the social and economic fabric of communities in particular places and in the lives of individuals (Joseph and Knight 1999). Restructuring results in the opening up of opportunities for some communities and/or individuals and the closing of opportunities for others. In other words, restructuring is a process of change, and it provides opportunities for inclusion and threats of exclusion, as well as growth and stagnation, adaptation and resilience (Shortall and Bryden 1997). Individuals and communities differ in their vulnerability or resilience to impacts of restructuring. As noted in the previous chapter, the study communities in the BC coastal region are more resource-dependent when compared with the provincial economy, and consequently they have experienced more difficult times than the province as a whole since the 1980s. While there are more employment opportunities opening up in the Vancouver CMA, many businesses closed in the regions as part of the process of restructuring during the last two decades (BC

Progress Board 2002; BC Progress Board 2003). The BC economy experienced positive growth each year in the period of 1984-1999. All the study communities but Tofino have lagged significantly behind the province as a whole. The major challenge that the communities face is a lack of employment opportunities, resulting in the out-migration (BC Stats 2002).

3.2.3 Impacts of Socio-economic Restructuring on Health

Socio-economic restructuring has resulted in social changes which have major implications for the health and well-being of individuals and communities (Wilkinson 1996; Williams, Gabe et al. 2000; Ommer 2002). There is evidence that, over time, increases in health inequality and social polarization are strongly correlated in developed societies (Phillimore, Beattie et al. 1994). The amplified social and economic gaps have created many socio-economic stressors and vulnerability for both individuals and communities. Communities are particularly vulnerable to socio-economic restructuring and they are disadvantaged in both economic development and social services. The vulnerable communities are at risk of shrinking and dying by losing their traditional economic base, reducing employment opportunities and losing residents. *Vulnerable* or *disadvantaged* individuals are people living in poverty, people who experience unemployment and income assistance, low-skilled and low-income workers, and people lacking education, training and marketable skills (Shaw-Taylor 1999).

The effects of socio-economic restructuring at a community level are especially profound in rural and resource-based communities. The ability of a community to cope with ongoing changes in society can be greatly affected by the capacity of its residents to work together to accomplish projects and take action. This capacity to work together is

referred to as the cohesiveness of a community or, more generally, as its sense of community. A cohesive community is more likely to be a resilient and healthy community (Russell and Harris 2001). *Resilience* is defined as the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances (Masten, Best et al. 1991; Masten and Coatsworth 1998). Healthy communities begin at the local and regional level, with people and institutions within the community taking the lead. Healthy communities embrace a complex set of factors that contribute to good health: quality education, adequate housing, the availability of gainful employment, access to job skills and training, access to efficient public transportation, the availability of recreational opportunities, healthy and clean physical environments, and access to education and health education, and preventive services (Hancock, Labonte et al. 1999; Lund 1999; Hancock 2002).

3.2.4 Research Questions

This study focuses on relationships between socio-economic restructuring and health. The general research question leads to several specific research questions:

1. Do the *self-reported* health status and stress level of community residents differ from *expected* levels based on provincial and national statistics?
2. Do the health status and stress levels of residents and the perceptions of community health differ among the selected communities?
3. What factors affect residents' health status and stress levels? and
4. Are differences in health status and perceptions of community health attributable to restructuring processes and events?

3.2.5 Conceptual Model

A major utility in developing a framework is to simplify and organize the complex components of reality from a perspective that discloses the values and concepts of those who propose them (Hancock, Labonte et al. 1999). The *social ecological framework of restructuring and health* for the CUS project as a whole recognizes the complex interactions among environmental, institutional, industrial and social processes, in order to address the full range of determinants and outcomes (CUS; Dolan, Taylor et al. 2005) related to environmental, community and human health over time. While the CUS social ecological framework describes broad-level interactive restructuring processes, this study focuses more specifically on the relationships between socio-economic restructuring and the health of communities and their residents in the BC coastal region. In so doing, it is nested within the larger conceptual framework of the CUS research.

From a population health perspective, the conceptual model for this dissertation is developed with a focus on social and economic restructuring that affects community health and individual health through multiple determinants and pathways—socio-demographic and lifestyle factors, social capital and social cohesion. There is growing evidence that the health and wellbeing of the individuals in a community depends upon how well the community functions, such as the degree of participation, the degree of social capital and social cohesion. These are seen as fundamental to good health and wellbeing (World Health Organization 1986; Putnam 2001). Measures of such attributes of a well-functioning community should also be a component of an assessment of population health at the community level (Hancock, Labonte et al. 1999). According to

Lund, the vehicles for achieving community health include partnerships between a variety of community sectors, local governmental involvement, community involvement, sustainability, holistic approaches to health, and a focus on human development (Lund 1999).

Figure 3.2: Socio-economic Restructuring and Health

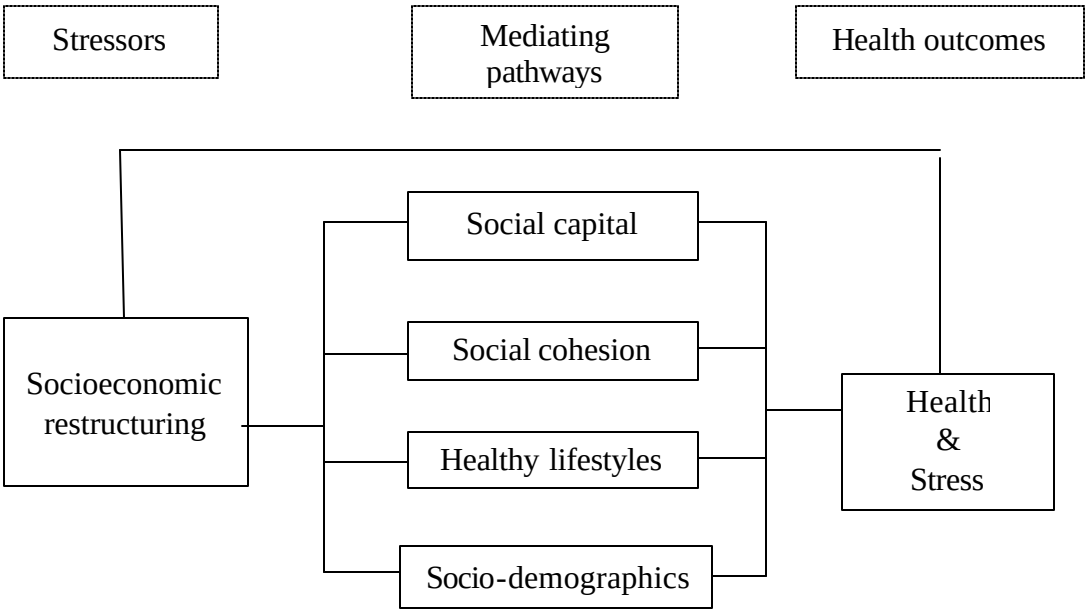


Figure 3.2 illustrates the relationships between socio-economic restructuring and health in the coastal BC context, as conceptualized in the literature on health. The major theoretical support for this framework derives from Wilkinson's relative income distribution and Putnam's social capital arguments (Wilkinson 1996; Putnam 2001). Arrows are drawn in the directions from stressors (socio-economic restructuring—amplified income and social inequalities) to mediating factors (social capital, social cohesion, lifestyle and socio-demographics) and to outcomes (health and stress). While the mediating factors serve as pathways to channel the effects of socio-economic restructuring on health outcomes, health/stress outcomes and socio-economic restructuring stressors can also influence each other.

Figure 3.2 provides a model that illustrates the relationships between restructuring factors as conceptualized in the literature on population health (Wilkinson 1996; Putnam 2001). Restructuring impacts the health of individuals and communities through its effects on social structure and process, particularly amplifying income and social

inequalities. The relationships between socio-economic restructuring and population health are mediated by social capital and social cohesion (Grootaert 1998; Lomas 1998; Putnam 2000; Cattell 2001; Glaeser 2001; Putnam 2001; Lindstrom, Merlo et al. 2002). The major theoretical support for this framework derives from Wilkinson's relative income and Putnam's social capital arguments (Wilkinson 1996; Putnam 2001). Health determinants such as individual lifestyle and SES are also included in this model as control variables to examine the effects of social capital and social cohesion.

The relationship between income and health has been a primary focus in the population health literature. Evidence strongly supports an income gradient in health status, which shows lower income groups experiencing poorer health (Marmot and Wilkinson 1999; Marmot 2002). Furthermore, there is evidence that income inequality, also known as the gap between high and low income groups, is a determinant of health, particularly in wealthier societies (Wilkinson 1996; Marmot and Wilkinson 1999). Consequently, a primary pathway for the effects of restructuring on health is through its impacts on employment opportunities and income potential, as well as its possible consequences for increasing income inequalities. The research that provides evidence for these findings has occurred at the level of communities, regions and countries. At the individual level, the determination of health status is more complex and has to take into account the mediating effects of both contextual and individual factors. These mediating factors are represented in the framework by four components: social capital, social cohesion, healthy lifestyles and socio-demographic characteristics, based on evidence from previous research supporting their relationship with the health status of individuals (Rehm, Fichter et al. 1993; Godsland, Leyva et al. 1998; Grootaert 1998; Lomas 1998;

Putnam 2000; Cattell 2001; Glaeser 2001; Putnam 2001; Lindstrom, Merlo et al. 2002). These relationships constitute the focus of this chapter's analysis on the determinants of individual health and community health in the four BC coastal communities that are the study areas for this dissertation.

The model contains three main parts: 1) restructuring as stressors, 2) the mediating effects of social capital, social cohesion, healthy lifestyles and socio-demographic factors, and 3) the impacts on health outcomes. First, restructuring is conceived as stressor—changed opportunities for some communities and individuals, and as amplified social and economic inequalities at the individual and community levels. At an individual level, according to Pearlin, restructuring is increasingly recognized as a stressor. Stressors refer to the experiential circumstances that give rise to stress (Pearlin 1989). Stress is any environmental, social, or internal demand which requires the individual to readjust his/her usual behaviour patterns (Aneshensel 1992; Thoits 1995). A simplified view of stress is the way in which one reacts physically, mentally, and emotionally to daily life events. The response should not always be considered negatively, although it may include negative consequences (Geuna and Brunelli 1996). The positive or negative consequences of stress '…depend on the relationship between the people and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being' (Lazarus and Folkman 1984). Therefore, Lazarus and Folkman (1984) defined stress as the relationship between person and environment, which takes into account characteristics of the person on the one hand, and the social environment on the other (Lazarus and Folkman 1984). The judgment that

a particular person-environment relationship is stressful hinges on the ability to access resources and select appropriate models of success—cognitive appraisal and coping.

Economic restructuring, economic growth and prosperity are typically distributed unevenly within and between societies (Phillimore, Beattie et al. 1994; Williams and Collins 1995; Draut 2002), regions, and communities. At a community level, BC coastal communities are under continuous social, economic and environmental pressures. As Hertzman notes, "Rapid economic change affects population health. Rapidly expanding economies are associated with increasing health and rapidly contracting economies are associated with declining health… the period of rapid economic contraction was also a time of increasing income inequality" (Hertzman 2000). Social inequality refers to differences that become socially structured, like power, poverty and wealth, occupation, education attainment, and so on. The advantaged groups or individuals tend to obtain greater access to the various rewards and privileges that are available in society (Grabb 1993). Amplified social and economic gaps have created many socio-economic stressors for both individuals and communities. Particularly vulnerable individuals are people living in poverty, people who experience unemployment, those seeking income assistance, low-skilled and low-income workers, and people lacking education, training and other marketable skills. The effects of socio-economic stressors at a community level are especially profound in rural and resource-based communities. These stressed communities are usually shrinking and their population is in decline (Barnes, Hayter et al. 1999; Coastal Community Network 2002b).

The second part of this model identifies the mediating effects of social capital, social cohesion, lifestyles, and socio-demographic factors. *Social capital* is a social

structural resource. Carbonaro (Carbonaro 1998; McClenaghan 2000) explains that trust, obligations, expectations, norms, relations of authority, and shared information all exemplify social capital, because they are resources that arise from the social relations of individuals who share membership in a common social structure. Social capital is simultaneously a concept in economics, sociology, and political science, as well as in geography. The implication of many studies? that the character of social relationships in a locality can be more than the sum of its parts? has obvious resonance with discussions of social capital (Mohan and Mohan 2002). The Strategic Directorate of Health Canada has been interested in this topic since 1999. Social capital presents itself as an alternative to structural materialist inequalities, which relate to class, gender and race, by bringing to the forefront of social epidemiology and social psychology argument to which everyone can relate? e.g., good relations with one's community are beneficial to one's health (Muntaner, Lynch et al. 2000). The concept of social capital is applicable to understanding health inequalities, on account of the evidence that substantial disparities exist in spite of rising living standards. Wilkinson and others have advanced the following basic propositions: 1) inequality in power and status influence social relationships and interactions; 2) within the developed world, the highest health standards are found in the most egalitarian societies, as opposed to the richest ones; and 3) the most important links between disease and income inequality are psychosocial ones, which operate through the construct of social cohesion (Wilkinson 1996; Marmot and Wilkinson 1999; Mohan and Mohan 2002). Social capital is one of the significant domains of social cohesion (Forrest and Kearns 2001).

Kawachi and his colleagues (Kawachi, Kennedy et al. 1997) claim that income inequalities increase mortality through disinvestment in social capital. However, Muntaner et al. (Muntaner, Lynch et al. 2000) argue that evidence suggesting social capital as a determinant of better health is still scant or ambiguous, depending on the definition employed. Social capital is now considered in public health as an alternative to both state-centred economic redistribution (e.g., living wage, full employment, and universal health insurance) and party politics (e.g., gaining control of the executive branch of the government). One other difficulty with the concept of social capital is that, just as the definition of social capital varies, so does its measurement (Forrest and Kearns 2001; van Kemenade 2003a; van Kemenade 2003b). According to Health Canada (2003), the selected indicators for measuring social capital are the following (van Kemenade 2003a): trust, social support and immediate networks, civic participation and social engagement, income distribution, and health.

Social cohesion refers to the ongoing process of developing a community of shared values, shared challenges, and equal opportunities within the country, based on a sense of trust, hope, and reciprocity among all Canadians (SSCSAST 1999). Social cohesion within a society refers to the harmonious development of society and its constituent groups towards common economic, social and environmental standards. Social gradients in health status are persistent and widening and are related to relative rather than absolute levels of social inequality which are, in turn, linked to social cohesion, social support networks and social capital (Wilkinson 1996; Wilkinson 1997; Elliott 2000). Health impacts of stress are buffered by emotional and perceived social support. Social support refers to actions undertaken by others to provide coping

assistance whereas coping refers to actions taken on one's own behalf. Coping and support perform parallel functions, influencing and impacting stressful life experience (Aneshensel 1992; Thoits 1995). The social support literature suggests that 1) social integration is directly and positively related to mental health and physical health; 2) perceived emotional support is associated directly with better health; and 3) the simplest and most powerful measure of social support is determined by whether a person has close relationships and people where they can confide (Jacobson 1986; Thoits 1995; Cohen, Underwood et al. 2000).

Studies that seek to link socio-economic restructuring and health in a BC coastal context are rare (Aneshensel 1992; Elliott 2000; Moffat 2001). In the recent past, the resource-based economy has been in decline, and communities on the BC coast have been shrinking. This study focuses on whether these changes affect the health of individuals and their communities, and whether the factors such as social capital, social cohesion, lifestyle and socio-demographics mediate the impact of restructuring on health. In this study, measures of social capital and social cohesion focus on the individual level. Being concerned with the relationships between residents and their communities, these measures reflect residents' perceptions of community environment, community involvement, community satisfaction and community attachment. Satisfaction with and being attached to a community are processes that provide personal and group identity, while fostering security and comfort with one's immediate surroundings (Brown and Perkins 1992). A strong attachment to a community has been associated with high residential satisfaction, and an easy adjustment process for change (Altman and Low

1992). The establishment of a sense of community and attachment to community appears to be particularly important for community health research.

The second part of the model also examines the role of lifestyles and socio-demographic factors in moderating the impacts of restructuring on health. Coping strategies depend on resource availability and personality (Heth and Somer 2002). Very often, stress researchers focused on the negative physical and mental health consequences of major life events (Pearlin, Managhan et al. 1981; Thoits 1995). They found that the distribution of stressors depends on people's location within social structures (Elstad 1998). Social integration is only protective of mental and physical health for higher-socio-economic status (SES) neighbourhoods (Elliott 2000). There is ample evidence suggesting that the lack of coping resources and pathways lead to many health problems (Lazarus and Folkman 1984; Folkman and Lazarus 1988; Thoits 1995). Since these impacts have been widely recognized, socio-demographic (gender, age, education, employment, family income, marital status, ethnicity) and lifestyle factors were included as control variables for examining the role of social capital and social cohesion in mediating the impacts of restructuring on health. Alcohol consumption, cigarette smoking, and physical activity are major lifestyle factors that affect health (Rehm, Fichter et al. 1993; Godsland, Leyva et al. 1998). Smoking is a well-known risk factor for many respiratory diseases, coronary heart disease, and cancer. Smoking also induces a harmful effect on reproductive health (Doll and Peto 1981; Godsland, Leyva et al. 1998; Østbye, Taylor et al. 2002; Pincock 2004; Vaez and Laflamme 2003).

The relationship between socio-demographics and health status has been extensively documented over the years. The fact that the relationship between socio-

demographic status and health has endured even as risk factors have evolved (e.g., from sanitation and immunization in the early 20th century to factors such as smoking and exercise in modern times) indicates the major role of such structural effects. Link and Phelan (1996: 472) declare that "fundamental social causes influence disease even when the profile of risk factors changes" (Link and Phelan 1996). The positive association between socio-demographics and health may reflect selection or drift processes, where poor health is the cause of low SES. The competing social causation hypothesis views the elevated rates of illness among low SES populations as a consequence of the low socio-economic circumstances (Adler, Boyce et al. 1994; Adler and Newman 2002).

The third part of this model is concerned with stress and health outcomes. This study focuses on individual health and stress, and the individual health outcomes may reflect the population health of the coastal communities. Individual health is measured by self-rated health status in general and emotional health. Individual stress is measured by stress level in considering one's life as a whole. Self-rated health is universally recognized as a simple but comprehensive indicator to measure health status in current health research (Kawachi and Kennedy 1999; Eriksson, Unden et al. 2001; Deeg and Bath 2003). The majority of health studies show that self-rated health remains a robust predictor of mortality even when health risk factors are accounted for in regression models (Eriksson, Unden et al. 2001).

3.3. Research Design

3.3.1 Mixed Methods

There is growing interest in employing *mixed methods* in health research, which is evident in books, journal articles and funded projects. A mixed method approach is one in

which qualitative and quantitative techniques are combined in one study or among several studies in a program of inquiry. Currently, new research methods are being developed and traditional methods are being revised to meet the needs and curiosity of researchers. This is also true in population health research and health geography (Elliott and Baxter 1994; Graziano and Raulin 1996). Traditionally, the study of human health relied heavily on epidemiological approaches that focused on a set of variables related to the incidence of diseases. In contrast, population health takes a broader view of health status, involving observations of both objective and subjective indicators of health, and invoking a broad range of putative determinants.

Different terms are used for mixed methods, such as integrating, synthesis, combined qualitative and quantitative methods, multi-method and multi-methodology, etc. (Creswell 2003). The relationships between qualitative and quantitative approaches should be viewed as complementary rather than mutually exclusive. "Combining qualitative and quantitative methods has gained broad appeal in public health research. The key question has become not whether it is acceptable or legitimate to combine methods, but rather how they will be combined to be mutually supportive and how findings achieved through different methods will be integrated" (Creswell 2004). As opposed to considering the use of mixed methods as a dichotomy, a mixed method approach is more consistent with a coherent philosophy of science (Newman 2000).

Pragmatically, one way to undertake effective research is to use the philosophical and/or methodological approach which works for the particular research problem. Therefore, research design and implementation decisions are made, based on the choice of suitable methods that best meet the practical demands of the particular inquiry

(Tashakkori and Teddlie 1998). Based on the five purposes for the mixed method approach—corroboration (or triangulation), elaboration (or complementarity), expansion, development and initiation (Greene, Caracelli et al. 1989; Rocco, Bliss et al. 2003), the main reason for using quantitative and qualitative data collection and data analysis in this research is the complementarity purpose, specifically, 1) to enable confirmation or corroboration of evidence derived from each approach, 2) to elaborate or develop analysis, providing richer detail, and 3) to initiate new lines of thinking for providing fresh insight (Rossman and Wilson 1984; Padgett 1998; Tashakkori and Teddlie 1998).

The two-phase, sequential mixed method employed in this research is to provide a better understanding of the research problem than either method being used alone. The first phase of this research obtains statistical results from a household survey and follows up with a smaller number of in-depth interviews with individuals to explore those results in more depth. In this research, the sources of data include: 1) census and community profile data, 2) data from a community health survey, and 3) semi-structured, in-depth interviews.

The quantitative approach examines the relationships between self-reported health outcomes and factors related to the community environment, community involvement and socio-demographics. The key constructs, indicators and measures associated with the socio-economic determinants and health outcomes are summarized in Table 3.1. The qualitative approach (i.e., in-depth interviews) explores the question of what makes individuals vulnerable or resilient to the impacts of restructuring.

Table 3.1: Socio-economic Determinants and Health Outcome Measurement

	Construct	Method	Indicator	Analysis
Determinants	Socio-economic restructuring	Census data, community profile for case study	Change of population and employment structure	Textual and statistical analysis
	Social capital	CUS health survey	Community change index Community problem index Community services index Community attachment	Textual and statistical analysis
	Social cohesion	CUS health survey In-depth interview	Community participation index Social/family support index Community involvement	Textual and statistical analysis
	Lifestyle	CUS health survey In-depth interview	Smoking behavior Alcohol Exercise/physical activity	Textual and statistical analysis
	Socio-demographic	CUS health survey In-depth interview	Age, Gender Marital status Income, Education Employment Ethnicity	Textual and statistical analysis
Health outcomes	Individual health	CUS health survey In-depth interview	Self-reported health Physical health Change of health Mental health Emotional health	Statistical Textual
	Stress	CUS health survey In-depth interview	Stress level Change of Stress	Statistical Textual
	Community health	CUS health survey In-depth interview	Self reported Perceptions	Statistical Textual

Source: Compiled on the basis of Federal, Provincial and Territorial Ministers of Health 1999; Taylor 2001; McDowell and Newell 1996 (McDowell and Newell 1996; Federal Provincial and Territorial Ministers of Health 1999; Taylor 2001).

3.3.3 Quantitative Methods

The objective of the community health survey was to examine the relationships between self-reported health and socio-economic factors in the four study communities. The cross-sectional survey instrument was designed to gather data with which to measure and determine whether social and economic factors have an impact on the health of individuals and their communities. The survey instrument was developed after examining

several other related health surveys. The questionnaire included 63 open-ended and close-ended questions in four main sections: community environment, community involvement, individual health and stress, and social demographics (see Appendix 3: The CUS community health survey questionnaire).

3.3.3.1 Survey Design: Sampling

The sample was generated by randomly selecting an adult household member from the lists of telephone books for each of the four selected communities. Sampling rates ranged from 10% to 30% of households with larger sampling fractions for the two smaller communities to ensure sufficient sample sizes for comparative analysis. The survey was conducted by telephone in July and August, 2002 by an independent survey company. The average time for administration of the survey instrument was 21.5 minutes (survey time ranging from 10.6 minutes to 47.2 minutes). The distribution of completed surveys by gender (Table 3.2) shows a relatively equal balance of surveys completed by both men and women in Prince Rupert and a moderate bias in favour of female respondents in the other three communities. A total of 1,204 (51.56%) surveys were completed, and 1,131 (48.44%) people refused to participate.

Table 3.2: Survey Completions and Gender Distribution of Survey Completions

Community	Total households*	Total Completions	Total population**		Male		Female	
			Total N	% F	N	%	N	%
Prince Rupert	6,601	683	14,645	49.3	335	49.0	348	51.0
Port Hardy	2,267	227	4,575	48.9	88	38.8	139	61.2
Tofino	527	178	1,465	49.8	77	43.3	101	56.7
Ucluelet	913	116	1,560	48.7	52	44.8	64	55.2
Total	10,308	1,204	22,245	50.3	552	45.8	652	54.2

Source: * Canada Post (2001). ** Census Data, Statistics Canada (2001).

3.3.3.2 Survey Data Analyses

The data analysis was conducted using SPSS 11.0, specifically, descriptive statistics, bivariate correlation, and logistic regression. For the logistic regression analysis, self-rated health status, emotional health status and stress levels were used as the dependent variables. Self-rated health has been shown to be a reliable robust indicator of physical health. It was measured by the question: 'how would you rate your health, in general, at this time? Would you say it is… 1) *poor*, 2) *fair*, 3) *good*, 4) *very good*, or 5) *excellent*.'

Measurements of independent variables included the constructs of social capital, social cohesion, healthy lifestyle and socio-demographics. Considering the differences in their definition and measurement in the literature, social capital and social cohesion were measured in terms of residents' perceptions of social and economic conditions in their communities, which contain two major aspects: community environment and community involvement. The indicators of lifestyle included: alcohol consumption, smoking and physical activity. The primary socio-demographic variables were gender and marital status, age, ethnicity, education, employment status, and family income.

3.3.4 Qualitative Methods

3.3.4.1 In-depth Interview

Personal interviews are one of the most common and powerful ways to understand human experience in its social context (Fontana and Frey 1998). In-depth interviews are conversations in which the researcher encourages the informant to relate, in their own words, experiences and attitudes that are relevant to the research topic or

question (Walker 1985). In-depth interviews are a highly effective approach to gaining greater clarity, insight and depth of understanding about the complexity of experiences and questions. These strengths can counteract the insufficiency of a cross-sectional survey (Neuman 1991; Creswell 1994) which can provide only limited understanding of the complex determination of health outcomes. At the same time, in-depth interviews have their own limitations, including the self-selection bias inherent in those who agree to be interviewed (Sullivan 1981).

3.3.4.2 Purposive Sample and Participants

The participants in the interviews were a subset of the survey respondents (N=41) and key informants (N=25). They were selected, on the basis of purposive sampling using several criteria to identify eligible individuals. In the survey sample, an initial objective was to select people based first on their willingness to be interviewed, and second, on the length of time they had lived in the respective communities—at least 10 years. An objective of the in-depth interviews was to compare the experiences and responses to restructuring of those who on the basis of their survey data appeared *a priori* to be more or less resilient (or vulnerable). To that end, the criteria for selecting interview participants were as follows:

1. At-risk Sample (Vulnerable):
    - Personal economic and employment situation has worsened;
    - Self-rated health is poor or fair; and
    - Very stressful or considerably stressful in his/her life.
2. Healthy Sample (Resilient):
    - Personal economic and employment situation has been improved;
    - Self-rated health is excellent or very good; and
    - Not at all stressful or slightly stressful in his/her life.

In Port Hardy and Prince Rupert, this selection process yielded more than ten eligible individuals in each category. However, in Tofino and Ucluelet, the same criteria yielded a very small number of suitable candidates. Therefore, in these two latter communities, the sample was selected from individuals who have lived in Tofino or Ucluelet for 10 years or more. To gain insight into relatively complex issues in the communities, an additional 25 key informants were selected from the four communities. The key informants included mayors, RCMP officers, social workers, realtors, employment counsellors, and Chamber of Commerce leaders.

3.3.4.3 Interview Process

The average interview time for all interviews was 48 minutes, and ranged between 20 – 111 minutes. Fifty-nine of the 66 interviews were taped with a digital recorder based on participants' willingness. An open and reflexive approach was adopted in conducting the interviews which focused on the four core topics: perceptions of the local economy and quality of life; perceptions of community health; perceptions of personal health; and coping strategies.

3.3.4.4 Data Analysis

An interview is a complex social process involving interviewer and respondent bias which has to be consistently considered in analysing and interpreting the interview transcripts (Jones 1985). The analysis of qualitative data is therefore a process of systematic and structured interpretation of textual information that reveals meaning based on context, common sense, and cultural knowledge (Adler and Adler 1998). This

process includes structuring through categories, mapping the data, comparison and integration (Miles and Huberman 1994; Coffey 1996).

3.3.4.5 In-Depth Interview Checklist

The main purpose of undertaking in-depth interviews was to better understand how socio-economic restructuring has impacted residents and their communities, and what makes individuals and communities vulnerable or resilient to the impacts of restructuring. The interview focused on residents' perceptions of local economy and quality of life, perceptions of their community health, perceptions of personal health and stress, and ideas about coping strategies (for a detail interview checklist see Appendix 4).

3.4 Analysis

Data analyses involved the use of a combination of quantitative and qualitative methods to address two main research questions: *1) does socio-economic restructuring affect the health of individuals and their communities?* and *2) what makes individuals and communities vulnerable or resilient to the impacts of restructuring?*

3.4.1 Statistical Analysis

SPSS (11.0) was used to conduct a multi-stage statistical analysis. The first stage provided descriptive results from the survey focusing on socio-demographic indicators and health outcomes. The second stage analyzed the correlations between health status and socio-economic factors plausibly linked to restructuring, such as job and financial changes, social support and social capital. The third stage used logistic regression to estimate predictive models of health and stress outcomes based on social capital, social cohesion, lifestyle and socio-demographic factors as independent variables.

The analysis first addressed whether the self-rated health status reported by residents in the four communities differed from expected levels based on data for BC and for Canada. It also examined variations in health status and stress level among the four communities. Provincial and national data were drawn from the Canadian Community Health Survey (CCHS) Cycle 1.1 that included the same five point scale of self-reported health status. The hypothesis was that a negative impact of restructuring in the study communities would result in a lower health rating compared with provincial and national levels. Logistic regression analysis was used to investigate the combined effects of social capital, social cohesion, lifestyle and socio-demographic factors on health status and stress levels.

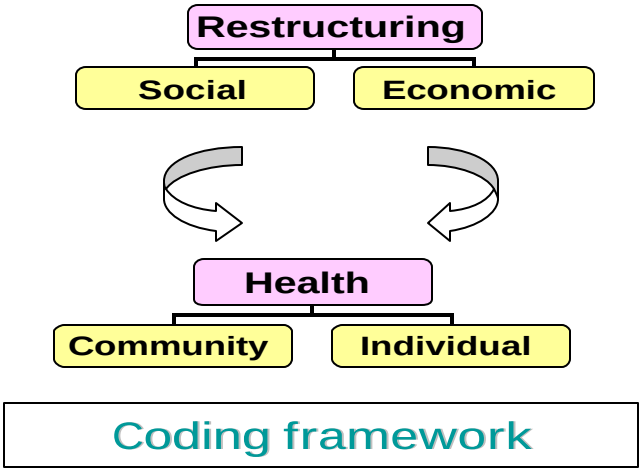
3.4.2 Textual Analysis

Analysis of qualitative data involves using explicit, systematic, and reproducible methods (Greenhalgh and Taylor 1997). While surveys have been repeatedly identified as effective ways of generating data necessary in statistical analysis to examine health knowledge and health behaviour, qualitative methods can fill current research gaps and explain why these gaps occur (Kitzinger 1995). Qualitative data exist in the form of text, written words, or symbols describing or representing people, actions and events in social life. These narrative data are usually made ready for analysis by converting raw material into partially processed data, which are then coded for analysis. In this study, there were 59 transcripts from the 66 interviews, as several participants refused to be taped. The analytical framework (Figure 3.3) was based on the two major themes, restructuring and health. Restructuring included social restructuring and economic restructuring, and health

included individual health and community health. Data analysis focused on exploring these themes and sub-themes and identifying the linkages among them.

Using the Qualitative Solutions and Research software (QSR N6), the 59 text files were coded by developing both Tree Nodes and Free Nodes[1]. The Tree Nodes were generated by each category and sub-categories and focused on comparing factors affecting community and resident resilience to negative health status changes. Appendix 5 lists the Tree Nodes and Free Nodes. The analysis conducted using this coding scheme led to the emergent themes and sub-themes described in chapter 5.

Figure 3.3: Interview Data Coding Framework



3.5 Conclusion

Ultimately, no single method is capable of addressing all aspects of a complex social research problem, but each method has a role to play in providing partial answers to questions related to the issue in view, in this case the relationship between socio-

[1] Node is a container for any item in a project that the researcher may wish to refer to. Nodes can represent anything that matters to a project. Tree Nodes can be organized hierarchically to represent categories and sub-categories. Free nodes are nodes the researcher can create at any time for any purpose.

economic restructuring and health. Socio-economic restructuring affects health through several dimensions that have been partially identified in the literature. Building on this prior research, the conceptual framework for this study posits that social and economic restructuring affects population health in the four communities through four principal sets of determinants—social capital, social cohesion, lifestyle, and socio-demographic factors. The following two chapters examine the relationships between restructuring and health based on analyses of the community health survey data and the in-depth interviews.

CHAPTER 4. COMMUNITY HEALTH SURVEY

4.1 Introduction

This chapter examines the relationships between individual health and perceptions of the social and economic conditions in the communities of Port Hardy, Prince Rupert, Tofino and Ucluelet based on the CUS community health survey. A conceptual model of socio-economic restructuring and health was presented in the previous chapter (Figure 3.2) to illustrate the interactions among the stressors (socio-economic restructuring), mediating factors (social capital, social cohesion, lifestyle and socio-demographics), and outcomes (health and stress). The survey analysis addresses the following questions: 1) do the self-*reported* health status and stress level of community residents differ from *expected* levels based on provincial and national statistics? 2) do the health status and stress levels of residents and the perceptions of community health differ among the selected communities? 3) what factors affect residents' health status and stress levels? and 4) are differences in health status and perceptions of community health attributable to restructuring processes and events?

4.2 Survey Methods

The survey questionnaire included a mixture of 63 open-ended and closed questions in four main sections, which map onto the four sets of intervening factors and the health outcomes: 1) community environment including physical and socio-economic environments, as well as changes in socio-economic situation, services, and industries, 2) community involvement including community satisfaction, community attachment, and community participation/volunteer activity, 3) individual health status, stress levels, and

changes in health and stress, and 4) lifestyles, demographics, and changes in personal financial and employment situations.

Households in each community were randomly selected for inclusion in the survey using differential sampling rates (10-30%) to ensure adequate sample sizes in the four communities. Adult respondents were randomly selected within each household. The survey was conducted by telephone in July and August 2002 and on average took 21.5 minutes to complete. The distribution of survey completions by gender shows a relatively equal balance of men and women in Prince Rupert and a moderate bias in favor of female respondents in the other three communities.

4.2.1 Measurement of Individual Health and Stress

Self-rated health status was measured using the question adopted in many other health surveys, e.g., the Canadian Community Health Survey (CCHS): *how would you rate your health, in general, at this time? Would you say: 1) poor, 2) fair, 3) good, 4) very good, or 5) excellent*? In order to gather more detailed information, five additional questions related to self-rated health status were included in the survey regarding: physical and emotional health compared to others, health satisfaction, and current health status compared with that of one year ago. Other questions determined overall and source—specific stress levels and changes in stress over the past year using a five point rating scale. Emotional health was assessed using the question: *compared to other people of your age, how would you rate your emotional health? Would you say: 1) much worse, 2) somewhat worse, 3) about the same, 4) somewhat better, or 5) much better*? Stress level was measured using the question: *considering your life as a whole, how stressful is it? Would you say: 1) not at all stressful, 2) slightly stressful, 3) moderately stressful, 4)*

considerably stressful, or 5) very stressful?

4.2.2 Measurement of Health Determinants

Based on the conceptual model (Figure 3.2), the measurements of health determinants include social capital, social cohesion, lifestyle and socio-demographic factors. Socio-demographic factors were measured by age, gender, marital status, ethnicity, education, employment status, family income, and financial and employment change. Lifestyle factors included: alcohol consumption, smoking status, and frequency of physical activity, which were all strongly correlated with health status.

Social capital which is usually viewed as a property of a community enables residents to connect with each other and benefit for health (Kawachi and Kennedy 1999; Cattell 2001; Seeman and Crimmins 2001). Social capital can be measured at different scales from individual to national levels. Currently, research on social capital and health focuses on two broad aspects of the social environment: structural features and social support. Structural features refer to both the types and the number of relationships, and social support refers to the quality of the social relationships (Seeman and Crimmins 2001; Frumkin, Frank et al. 2004). In this study, social capital was measured by residents' perceptions of the social and economic conditions in their communities and by their engagement in civic behaviours. Perceptions were measured by: overall satisfaction with the area as a place to live (community satisfaction)[2]; satisfaction with community services, including health, education, recreation, and physical infrastructure; identification of specific community social problems; and perceptions of change in the

[2] Community satisfaction was measured by using the question: *how satisfied are you with the area as a place to live? Would you say: 1) very dissatisfied, 2) dissatisfied, 3) neither dissatisfied nor satisfied, 4) satisfied, or 5) very satisfied?*

availability of economic opportunities, provincial services and local services. Engagement in civic activities was measured by a community participation index[3], which included attending public meetings, signing petitions related to local issues, joining a volunteer organization, and communicating with a public official.

Social cohesion was assessed by community attachment, and a social support index. Community attachment was measured by using the question: *how would you describe your attachment to your local community? Would you say: 1) very weak, 2) somewhat weak, 3) neither strong nor weak, 4) strong, or 5) very strong?* Social support was based on who respondents reported they could rely on in times of need.

4.3 Results

4.3.1 Reported vs. Expected Health Status and Stress Level

The research questions addressed in the analysis examined whether the health status reported by residents in the four communities differed from expected results based on levels reported for BC and for Canada. Health status and stress level across the four communities were compared and changes in health status and stress level over the past year were also considered. Provincial and national data drawn from the CCHS include the same five point rating scale, that is, *poor* to *excellent* health status. The supposition here is that if health status has been negatively impacted by restructuring in the communities, then lower ratings compared with provincial and national levels should result.

[3] A set of community indices were developed as summary measures by combining several variables. The indices were also developed to make maximal use of the available information through reducing the number of variables for logistic regression analysis. The indices comprise community problems index, community change index, community services index, and community participation/volunteer index; for details, see Table 4.8.

Table 4.1: Self-rated Health Status by Community, BC and Canada

Community**, BC, Canada		Poor/Fair		Good		Very Good/Excellent	
		N	%	N	%	N	%
Prince Rupert		127	18.6	236	34.6	319	46.8
Port Hardy		52	22.9	63	27.8	112	49.3
Tofino		25	14.0	46	25.8	107	60.1
Ucluelet		14	12.1	39	33.6	63	54.6
Total		218	18.1	384	31.9	601	49.9
Canada[1]	Total		12.0		26.6		61.4
	Urban		12.0		26.6		61.4
	Rural		12.0		26.8		61.2
BC[1]	Total		12.4		28.5		59.0
	Urban		12.7		28.7		58.5
	Rural		11.5		27.3		61.8

** Difference in health ratings by communities significant at .01 level (Kruskal Wallis Test).
[1] Statistics Canada, Canadian Community Health Survey, 2000/01: Cycle 1.1.

Table 4.1 summarizes the health status ratings into three categories, "*poor/fair*", "*good*", and "very *good*/*excellent*". The ratings for BC and Canada are similar and more positive than those for the four communities combined: the ratings for "*poor*/*fair*" are 12.4% (BC), 12.0% (Canada) and 18.1% (coastal communities), respectively, while they are 59.0% (BC), 61.4% (Canada), and 49.9% (coastal communities) for "*very good*/*excellent*". The combined figures for the communities, however, conceal a wide range from 12.1 to 22.9% for "*poor/fair*" and from 46.8 to 60.1% for "*very good/ excellent*", and the differences in median ratings are statistically significant.

The relationships between self-rated health status and the main characteristics of the survey respondents are summarized in Table 4.2. Respondents who reported better health tended to be younger ($p<.01$), non-First Nations ($p<.05$), employed ($p<.01$), in married/common law relationships ($p<.01$), to have higher levels of education ($p<.01$), and higher family income ($p<.01$). Respondents who reported poor health tended therefore to be older ($p<.01$), First Nations ($p<.05$), unemployed ($p<.01$), to have lower

levels of education (p<.01), to be divorced, separated or widowed (p<.01), and to have a lower family income (p<.01).

Table 4.2: Characteristics of Survey Respondents

Variable		N	%	% poor/fair health	% good/very good/excellent health
Gender	Female	651	54.1	19.8	80.2
	Male	552	45.9	16.1	83.9
Age**	19-44	565	47.1	14.0	86.0
	45 and over	634	52.9	21.9	78.1
Ethnicity*	First Nations	167	13.9	25.7	74.3
	Non-First Nations	1,036	86.1	16.9	83.1
Education**	Grades 1-12	504	42.1	25.8	74.2
	Certificate/college	433	36.1	14.3	85.7
	University	261	21.8	9.2	90.8
Employment	Unemployed	216	18.0	28.7	71.3
status**	Retired	143	11.9	24.5	75.5
	Self-employed	169	14.1	14.2	85.8
	Employed	670	55.9	14.3	85.7
Marital status**	Other	410	34.1	21.2	78.8
	Married/common law	793	65.9	16.5	83.5
Family income**	≤ $39,999	355	35.3	28.2	71.8
	$40,000 – 69,999	364	36.1	14.8	85.2
	≥ $70,000	288	28.6	10.1	89.9

** Significant at .01 level; * significant at .05 level (Pearson Chi-Square Test).

Table 4.3 presents the change in health status by community. The majority of the respondents (59.6%) felt that their health status was unchanged. The percentage who felt that their health status was *significantly/somewhat worse* than the previous year was highest in Prince Rupert (17.1) and lowest in Ucluelet (12.2). In contrast, for those who felt that their health status was *somewhat/significantly better*, the percentages ranged from a low of 21.1 in Prince Rupert to a high of 30.9 in Tofino. The differences in median ratings were statistically significant.

Table 4.3: Change in Health Status by Community

Community*	Significantly/ Somewhat Worse		Unchanged		Somewhat/ Significantly Better		Total
	N	%	N	%	N	%	
Prince Rupert	117	17.1	422	61.8	144	21.1	683
Port Hardy	36	15.9	131	57.7	60	26.4	227
Tofino	27	15.2	96	53.9	55	30.9	178
Ucluelet	14	12.2	68	59.1	33	28.7	115
Total	194	16.1	717	59.6	292	24.3	1,203

* Difference in median ratings significant at .05 level (Kruskal Wallis Test).

Table 4.4 presents the percentage reporting a negative change in health status by sub-group. Respondents who felt that their health was worse than a year before included women ($p<.01$), non-First Nations ($p<.01$), those with lower levels of education ($p<.01$), people who were divorced, separated or widowed ($p<.01$), those engaging in less frequent exercise ($p<.01$), and people with lower family incomes ($p<.05$).

Table 4.4: Changes in Health Status by Sub-group

Variable		N	%	% Significantly/ somewhat worse
Gender**	Female	652	54.2	18.1
	Male	551	45.8	13.8
Ethnicity**	First Nations	168	14.0	14.9
	Non First Nations	1035	86.0	16.3
Education**	Grade 1-12	503	42.0	20.3
	Post high school	695	58.0	13.1
Marital status**	Married/common law	793	65.9	14.2
	Other	410	34.1	19.8
Family income*	≤ $39,999	355	35.3	18.9
	$40,000 – 69,999	364	36.1	15.9
	≥ $70,000	288	28.6	11.5
Exercise**	Exercise low	612	51.1	19.0
	Exercise high	585	48.9	13.0

** Significant at .01 level; * significant at .05 level (Pearson Chi-Square Test).

For overall stress (Table 4.5), the percentage reporting *no stress* or *some stress* is higher in the communities than in either BC or Canada. It follows that the reporting of

considerable stress is correspondingly lower in the communities. The provincial and national data derived from the CCHS used a three point ("*none*" to "*considerable*") scale, as compared with the five point ("*none*" to *extremely*") scale employed in the CUS survey. For comparison purposes, the "*very*" and "*extremely*" categories were combined to equate with "*considerable*", while the "*slightly*" and "*moderately*" categories were combined to equate with "*some*" in the CCHS.

Table 4.5: Stress Level by Community, BC and Canada

Community		None		Some		Considerable	
		N	%	N	%	N	%
Prince Rupert		133	19.6	453	66.6	94	13.8
Port Hardy		46	20.6	161	72.2	16	7.2
Tofino		33	18.5	123	69.1	22	12.4
Ucluelet		20	17.2	86	74.2	10	8.7
	Total	232	19.4	823	68.8	142	11.9
Canada[1]	Total		12.8		61.0		26.1
	Urban		12.5		61.0		26.5
	Rural		14.4		61.3		24.3
BC[1]	Total		12.0		64.2		23.6
	Urban		11.8		64.2		23.6
	Rural		13.2		63.2		23.5

1 Statistics Canada, Canadian Community Health Survey, 2000/01: Cycle 1.1.

The lower stress levels for the study communities is consistent with the results from the CCHS data which show lower stress for rural (vs. urban) residents for both BC and Canada which may be attributable to the stress reducing effects of a rural lifestyle. However, the poorer health reported in the study communities contrasts with the CCHS findings which indicate better health for rural (vs. urban) residents, and so provides possible evidence of the adverse health impacts of the socio-economic changes that have impacted coastal communities in BC.

Table 4.6: Change in Stress Level by Community

Community**	Much/Somewhat Less Stressful		Unchanged		Somewhat/ Much More Stressful		Total
	N	%	N	%	N	%	
Prince Rupert	159	23.4	301	44.3	219	32.3	679
Port Hardy	62	27.3	96	42.3	69	30.4	227
Tofino	55	31.0	81	45.8	41	23.1	177
Ucluelet	33	28.5	58	50.0	25	21.5	293
Total	309	25.8	536	44.7	354	29.5	1,199

** Median ratings significant at .01 level (Kruskal Wallis Test).

Table 4.6 shows the change in stress level over the past year. Less than half of the respondents rated their stress level as *remaining the same* (44.7%). Prince Rupert had the highest percentage (32.3%) of residents reporting life as *somewhat/much more stressful* and Ucluelet the lowest (21.5%). The percentage reporting their stress level as *much*/*somewhat less* than the previous year was highest score in Tofino (31.0%) and lowest in Prince Rupert (23.4%). The change in stress level differed significantly by community.

Table 4.7: Change in Stress Level by Sub-group

Variable		N	%	% more stressful
Gender*	Female	649	54.1	31.0
	Male	550	45.9	27.8
Age**	19-44	564	47.0	32.6
	45 and over	635	53.0	26.8
Ethnicity**	First Nations	168	14.0	14.9
	Non First Nations	1,035	86.0	16.3
Employment**	Unemployed	129	10.8	44.2
	Other	1,070	89.2	27.8
Smoking**	Smoking	371	31.0	35.8
	Never smoking	826	69.0	26.8
Community satisfaction**	Dissatisfied	146	12.2	43.7
	Other	1,049	87.8	27.5
Community attachment*	Weak attachment	158	13.3	38.0
	Strong attachment	1,033	86.7	28.5

** Significant at .01 level; * significant at .05 level (Pearson Chi-Square Test).

Respondents reporting increasing stress included (Table 4.7) females ($p<.05$), younger people ($p<.01$), non-First Nations ($p<.01$), those unemployed ($p<.01$), smokers ($p<.01$), people who felt *weakly attached* to the community ($p<.05$), and those who were dissatisfied with the community ($p<.01$).

4.3.2 Perceptions of Community Health

Community health was assessed by residents' perceptions of the quality of the community environment and by their involvement in community activities. Community health takes into account the tangible and intangible characteristics of the community—its formal and informal networks and support systems, its norms and cultural nuances, and its institutions, politics, and belief systems (National Association of County and City Health Officials 2005). Residents' community perceptions in this study took into account employment opportunities, services to local residents, and social problems. Furthermore, community health is also seen to be related to the degree of social cohesion such that a cohesive community, having strong social networks and informal support systems, is healthier. Therefore, the assessment of community health in this study included measurements of both social capital and social cohesion (Table 4.8).

The community change index Prince Rupert had the highest percentage of negative responses to the three questions which were combined to form the community change index - changes in economic opportunities, provincial services and local services. The lowest percentage was reported for Tofino and responses differed significantly by community for all three indicators.

Table 4.8: Perceptions of Community Health by Community

Community problem index	Port Hardy	Prince Rupert	Tofino	Ucluelet	Average
(%) Agree with …					
Alcohol abuse is a problem here**	87.6	84.2	76.5	73.2	82.7
Drug abuse is a problem here**	89.3	87.1	69.2	60.7	82.5
Family violence is a problem here**	58.5	62.1	45.7	44.2	57.4
Unemployment is a problem here**	85.8	97.1	27.4	84.4	83.5
Sexual abuse is a problem here**	46.8	49.1	36.7	26.7	44.9
Average	73.6	75.9	51.1	57.8	70.2
Community change index					
(%) Negative change in …					
Economic opportunities available**	61.3	83.6	11.4	18.0	62.6
Provincial services available**	55.1	71.7	54.3	46.8	63.7
Local services generally**	8.2	26.6	8.7	12.9	19.2
Average	41.5	60.6	24.8	25.9	48.5
Community services index					
(%) Dissatisfied with …					
Health services**	34.5	21.9	24.5	24.6	25.0
Education system/schools**	37.4	21.2	47.6	17.8	27.5
Road maintenance**	12.8	52.9	32.6	61.2	43.1
Sewage system**	6.4	20.3	52.8	8.6	21.6
Water system**	4.4	8.7	40.1	35.8	15.0
Recreation services**	12.0	19.2	32.5	39.6	21.6
Average	17.9	24.0	38.4	32.3	25.6
Community participation/volunteer index					
(%) Have you…					
Attended meeting of city council/school board**	29.5	21.4	52.2	29.3	28.3
Signed a petition related to a local issue**	41.1	57.1	71.8	50.4	55.6
Joined an organization**	38.3	37.9	52.8	44	40.8
Spoken/written to an official**	30.5	38.1	53.1	46.6	39.7
Volunteered at a church/religious organization**	17.6	27.8	19.1	15.5	23.4
Volunteered at a sporting/civic/local event**	59.5	52.6	61.2	66.4	56.5
Average	36.1	39.2	51.7	42.0	42.2
Community satisfaction					
(%) (Very) dissatisfied with the area as a place to live**	6.7	16.8	7.3	3.4	12.2
Community attachment					
(%) Weakly attached to local community*	11.9	14.8	11.9	10.4	13.4

** Significant at .01 level, * at .05 level (Pearson Chi-square Test).

The community problem index Although community differences were less pronounced, a similar pattern of responses occurred for the five questions included in the community problem index with Prince Rupert reporting the highest percentage agreement

on three of the five—unemployment, family violence, and sexual abuse. The responses for Port Hardy were quite similar, and in contrast with those for Tofino and Ucluelet, where a lower percentage, though still a majority, of respondents agreed that there were social problems. Again, community differences in agreement rates were significant for all five problem issues.

The community services index Responses to the six questions comprising the community service index are quite different with Tofino reporting the highest percentage of dissatisfaction with the education and school, water, and sewage systems[4]. This may reflect variations by community in expectations regarding the quality of community service provision as well as variability in the demand for services related to differential rates in population growth. In this context, it is perhaps not surprising that the results for Tofino differ from those of the other communities, especially Prince Rupert and Port Hardy.

The community participation/volunteer index Similarly, Tofino responses are distinct from those for Prince Rupert and Port Hardy, and to a lesser extent Ucluelet, on the six questions related to participation in community and volunteer activities with the highest percentage of engagement being reported in Tofino.

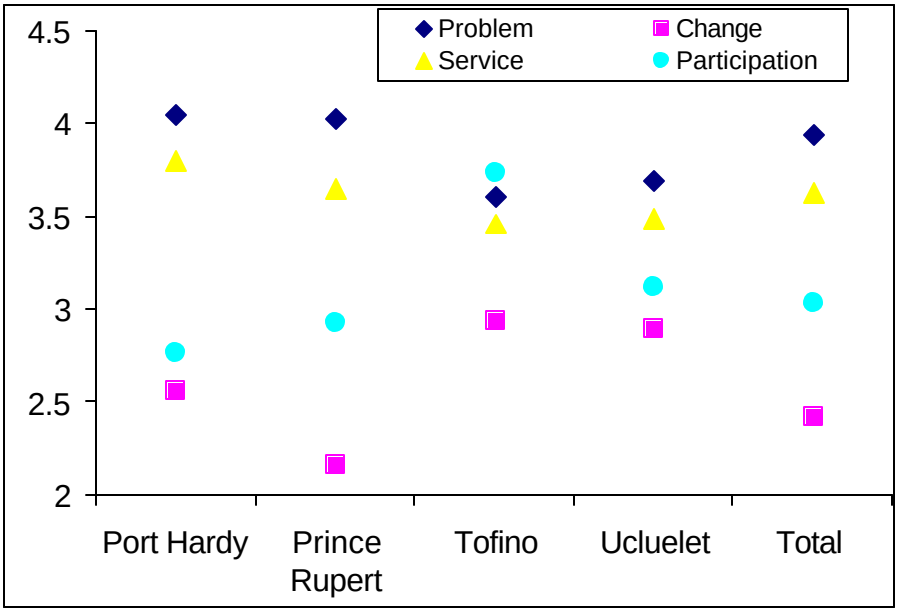
Consistent with the relatively high negative community problem and community change index ratings, Prince Rupert residents reported the highest dissatisfaction with the area as a place to live and also the highest percentage of residents feeling weakly attached to the local community. This contrasts especially with the relatively high satisfaction and community attachment reported by Ucluelet residents. As expected, residents in general

[4] Tofino residents complained about their water restrictions in the summer season due to too many tourists. Further, there is no high school in Tofino and the residents have to share one with Ucluelet.

reporting a high degree of community dissatisfaction and weak attachment to their local community also reported more community problems and more negative changes, and less community involvement.

Furthermore, all of the four community indices pertaining to problems, changes, services, and participation differ significantly ($p<.01$) among the four communities (Figure 4.1). Health status and three indices (the community problem index, the community change index and the community participation index) were correlated significantly at the 0.01 level. The higher the value of the problem index, the more problems are perceived to exist in the community; the higher the value of the participation index, the more people participated in the community; the higher the value of the service index, the greater the degree of satisfaction with the community services; and the higher the value of the change index, the more positive change is perceived to have occurred in the community.

Figure 4.1: Community Indices by Community



** The four indices are all significantly different ($p<.01$) among the communities by One way ANOVA test.

4.3.3 Factors Affecting Self-reported Health and Stress

The third objective of the analysis was to identify the determinants of health and stress. Binomial logistic regression was utilized to estimate models for self-reported health status, emotional health status, and stress level (Table 4.9). Health status was initially dichotomized by combining ratings of *poor/fair* health and ratings of *good/very good/excellent* health to distinguish those reporting poor vs. better health. Similarly, emotional health status was dichotomized by combining ratings of *much worse/somewhat worse* compared to other people, with those of *about same/somewhat better/much better*. Stress level was dichotomized by combining ratings of *not at all/slightly* stressful with those of *moderate/considerably/very* stressful. Regression models were estimated for self-reported health, emotional health status, and stress level using a backwards stepwise and block procedure. Independent variables in each of the four categories (social capital, social cohesion, lifestyles, and socio-demographics) were selected for inclusion in the logistic regression models based on their statistical association with health status and stress from the results of bivariate analyses. Independent variables were included in the model in two blocks: lifestyle and socio-demographic factors were included in the model as control variables; the social capital and social cohesion variables were combined with the significant variables retained from the first block to estimate the final models.

4.3.2.1 Self-reported Health Status

The logistic regression analysis provides estimates of the probabilities of residents reporting *good/very good/excellent health* as a function of individual lifestyle/socio-demographic factors, stress levels, and social capital and social cohesion variables. The results show that seven of the twelve socio-demographic and lifestyle factors were

retained for inclusion in the final model. Nine variables were significant predictors of health status in the final model which correctly predicted 70% of the cases.

In terms of the life-style and socio-demographic factors, better health was more likely to be reported by those who were younger, non-smokers, more highly educated, have higher household incomes, exercise more frequently, and report lower stress levels. Modest alcohol consumption was also a positive predictor of better health status. Of the social capital and social cohesion variables, the only significant predictor was community satisfaction.

4.3.3.2 Emotional Health Status

The results for the emotional health status model show that eleven variables were significant predictors of *somewhat better/much better* health with 80.9 percent of cases correctly predicted. The significant life-style and socio-demographic factors were lower stress level, higher education, more frequent exercise, and a positive change in personal financial/employment situations. Better emotional health was also more likely to be reported by men and those living with partners. For the social capital and social cohesion variables, better health is associated with community satisfaction and perceptions of positive community change. In addition, Prince Rupert residents were the least likely to report better emotional health.

4.3.3.3 Stress Level

For the stress model, there were ten significant predictors of lower stress levels with 64.9 percent of cases correctly predicted. Lower stress was more likely to be reported by those who were employed, non-smokers, those reporting improved personal financial/employment situations, and more positive ratings of general and emotional

health status. Of the social capital and social cohesion variables, lower stress was associated with community satisfaction, positive perceptions of community services, and stronger social/family support.

Table 4.9: Odds Ratios for Reporting *poor/fair* vs. *good/very good/excellent* Health, *much worse/somewhat worse* vs. *about the same/somewhat better/much better* Emotional Health, and *moderate/considerable/very* Stressful vs. *not at all/slightly* Stressful by Logistic Regression Analyses

Variable	Self-rated Health				Emotional Health				Stress Level			
	N=990 (82.2%)				N=990 (82.2%)				N=989 (82.1%)			
	B	Exp (B)	95.0% C.I.		B	Exp (B)	95.0% C.I.		B	Exp (B)	95.0% C.I.	
			Lower	Upper			Lower	Upper			Lower	Upper
Gender =F					-.573*	.564	.324	.981				
Age =19-44	.752**	2.121	1.474	3.051								
First Nations												
Divorced/widowed					-.574*	.563	.328	.966	-.201	.818	.603	1.109
Education=higher	.538**	1.713	1.199	2.447	.589*	1.803	1.053	3.087				
Employment=yes									.764**	2.146	1.319	3.493
Income= $70,000	.414**	1.513	1.188	1.928								
Alcohol=modest	.738**	2.091	1.458	2.999								
Smoking-free	.718**	2.051	1.426	2.951					.475**	1.607	1.189	2.173
Exercise=more	.644**	1.903	1.331	2.722	.737*	2.090	1.192	3.665	.266	1.304	.990	1.718
P-change=improved					.447**	1.564	1.176	2.080	.156*	1.169	1.001	1.367
Better emotional health									1.493**	4.448	2.277	8.691
Better Health status									.222*	1.248	1.039	1.500
Low stress level	.590**	1.805	1.263	2.579	1.580**	4.855	2.500	9.430				
Port Hardy					-2.019	.133	.016	1.072				
Prince Rupert					-2.154*	.116	.015	.896				
Tofino					-1.300	.273	.030	2.438				
C-satisfaction=satisfied	.554**	1.740	1.171	2.587	.788*	2.198	1.171	4.125	.433*	1.542	1.002	2.375
C-attachment=weak												
C-involvement=more												
C-services=satisfied									.624**	1.866	1.386	2.512
C-problem=negative												
C-change=negative					-.525*	.592	.383	.914				
C-participation=non												
C-Support=non									-.514**	.598	.425	.843
Constant	-6.715**				.788*				-8.516**			
Model fitting χ^2	129.575				85.630				140.778			
% correct predictions	70.0 (67.6 & 70.5)				80.9 (68.6 & 81.8)				64.9 (47.0 & 79.8)			

Note: ** indicates that the coefficient is statistically significant at .01 level; * at .05 level.
B: Coefficient. Exp (B): odds ratios (OR).
The cut value is .800 for self-rated health, .900 for emotional health, and .500 for stress level.

Twelve variables that entered block 1 for self-rated health and emotional health: gender, age, ethnicity, education, employment status, marital status, household income, personal financial/employment change index, alcohol consumption, smoking, exercise, and stress level.

Thirteen variables that entered block 1 for stress: gender, age, ethnicity, education, employment status, marital status, household income, personal financial/employment change index, alcohol consumption, smoking, exercise, self-rated health and emotional health.

Nine independent variables that entered block 2 for all three dependent variables: community, community problems index, community change index, community services index, community participation/volunteer index, community satisfaction, community involvement, community attachment, and social/family support index.

4.4 Discussion

From the conceptual model of socio-economic restructuring and health (Figure 3.2), restructuring impacts the health of individuals and communities through the mediating effects of social and demographic factors. This section discusses the following relationships between restructuring and health from the CUS survey results: do the *self-reported* health status and stress level of community residents differ from *expected* levels based on provincial and national statistics? Do the health status and stress levels of residents and the perceptions of community health differ among the selected communities? What factors affect residents' health status and stress levels? And are differences in health status and perceptions of community health attributable to restructuring processes and events?

The communities have experienced restructuring processes in the last few decades, but it is impossible to make a direct causal link between the restructuring events and processes and the health outcomes through a cross-sectional study. However, possible indicators of the effects of restructuring on health can be obtained by indirect measurements and evidence gathered in the survey study. The findings of the community health survey provide the following evidence on the effects of socio-economic restructuring on the health outcomes of individuals and their communities. No single source of evidence is sufficient to establish a relationship between restructuring and health, but taken together they provide consistency and strong support for the linkage.

First, evidence from the survey indicates that the study communities reported poorer health than both the province of BC and Canada as a whole. However, the CCHS study suggested that people living in Canada's northern remote communities are the least

healthy (Shields and Tremblay 2002) due to health risks associated with socio-demographic and lifestyle factors, such as high smoking rates and alcohol consumption (Tremblay, Ross et al. 2002). So is this a sufficient explanation of the poorer health status reported for the CUS communities? Probably not, because for those particular communities, at least for the random sample included in the survey, the smoking and alcohol consumption rates are below the provincial and national levels. Nevertheless, it is not possible to conclude therefore that the poorer health status in the study communities is attributable to restructuring.

In general, residents in the CUS study communities report lower levels of stress compared to national and provincial statistics. This result is consistent with findings from other studies that show lower levels of stress for smaller, rural communities relative to urban centres (Shields and Tremblay 2002). In the follow-up interviews, many respondents reported that the local environment was a key factor in mitigating individual stress. Highly developed social networks among residents, a strong sense of safety, and an absence of the typical urban stresses of traffic and pollution were considered main reasons for low stress levels. Easy access to wilderness areas and availability of clean water and air were also cited as environmental features that eased or prevented stress. People in these areas, while admitting that they were concerned with their financial situation and worried over the future of their communities, could somehow put these concerns into perspective and this translated into lower perceived stress levels.

Regarding the second question, there is a different history and process of restructuring in each community (see chapter 2). Evidence from the analyses suggests

that health status, change in health status, change in stress level, and perceptions of community health differ significantly among the study communities.

Among the four communities, the poorest health was reported by Port Hardy and Prince Rupert, the communities more seriously impacted by restructuring (see Chapter 2). These two communities also had higher percentages of residents reporting negative changes in both health status and stress level. In terms of perceptions of community health, residents perceived more community problems and more negative changes in Prince Rupert and Port Hardy as well. For Prince Rupert, unemployment was the most serious problem for almost all the respondents (as high as 97.1%), and it was also a major problem for Port Hardy (85.5%). In addition, the percentage of residents holding a view of negative change in the availability of economic opportunities and negative change in provincial services were higher for both Prince Rupert and Port Hardy.

Third, the findings from logistic regression analyses reveal that self-rated health status, emotional health and stress level are associated with a broad range of factors? social capital, social cohesion, socio-demographics, and lifestyle. The strength of logistic regression analysis is that it controls for socio-demographic and lifestyle factors while examining effects of restructuring mediated by social capital and social cohesion factors. Taken together, the findings for the three models are very instructive about the relative effects of the four sets of variables as predictors of general health, emotional health, and stress. The contrast in the composition of the three models is quite striking. For the first, the predictors are primarily the socio-demographic and lifestyle factors that are very well established from numerous previous studies as health determinants (Robert 1999; Adler and Newman 2002); in other words, the control variables are dominant, whereas the

hypothesized mediating factors for restructuring effects? social capital and social cohesion? are conspicuously weak. Socio-demographic and lifestyle factors plausibly play a dual role, both as control variables and as mediating factors, given the likelihood that restructuring impacts on both and so potentially compounds their effects on health status. In addition, social capital and cohesion indicators included in the analysis are measured as residents' perceptions and not as direct indicators of the quality and quantity of social resources, networks, and relationships. To that extent, their effects may be weakened in ways which are uncertain and unknown within the intrinsic limits of cross-sectional self reported survey data.

For the second and third models, the control variables, that is, socio-demographic and lifestyle variables are weaker, while the effects of the social capital and cohesion variables are stronger. Community satisfaction is a strong predictor of all three dependent variables. Perceptions of economic and employment situations for both personal level and community level are associated strongly with emotional health and stress but not for general health. Community services are a strong predictor for stress, and community of residence *per se* is a significant predictor for emotional health. So for emotional health, there is certainly stronger evidence for a restructuring effect, mediated by social capital and cohesion and linked to the particular community in ways that correspond with the recent histories of change in those places. Hence poorer emotional health was reported in Port Hardy and Prince Rupert compared with Tofino and Ucluelet. The same general conclusion applies to the findings for the stress model in terms of the relatively stronger effects for the social capital and social cohesion factors, although in that case, community

was not a significant predictor, which is consistent with the descriptive statistics reported earlier that show relatively low and uniform stress levels for all four places.

Finally, the question that follows is whether the differences in health status and perceptions of community health in the study communities are attributable to restructuring processes and events? As this is a cross-sectional survey study, a causal linkage cannot be established. This study does, however, provide strong evidence that residents of the communities that had experienced profound restructuring were less healthy in general. Indeed, residents of Port Hardy and Prince Rupert reported poorer health status, higher levels of stress and worse emotional health. The evidence also indicates that socio-demographic factors, lifestyle, social capital and social cohesion are related to health and stress in ways that are consistent with a mediating effect on the relationship between health and stress. Moreover, the community effect in the emotional health model (reinforcing the poorer health status in Prince Rupert), after controlling for other community factors, is consistent with the hypothesized relationship between restructuring and health. However, what cannot be examined in the statistical modeling is the restructuring process and history in the selected communities which strengthens the rationale for the follow-up in-depth interviews to complement this cross-sectional survey study.

4.5 Conclusion

The community health survey provides important insights into the health status and stress level of the BC coastal population. First, due to the limitations of cross-sectional surveys, it is not possible to draw causal inferences about the relationship between restructuring and health, as restructuring is a longitudinal process. Despite this

limitation, the survey results provide evidence of the effects of restructuring on health. First, self-rated health status in BC coastal communities is poorer than that reported at provincial and national levels. Among the communities, the poorest health was reported by Port Hardy and Prince Rupert, the communities more seriously impacted by restructuring.

Second, health status is associated with residents' perceptions of their social and economic situations in the communities and socio-demographic, and lifestyle factors. Health status is poorer and stress level is higher for some sub-groups, such as residents of Prince Rupert, women, the unemployed, those with low income, and individuals with low levels of social capital and social cohesion. The trend toward poorer health status experienced by vulnerable sub-groups is consistent with the impacts of chronic stressors and a lack of strategy to cope with socio-economic restructuring in the long run within the context of global change.

Finally, the results consistently indicate that higher levels of community satisfaction, lower levels of community problems, better provision of services, and positive economic changes are associated with better health status, a lower level of stress, and better emotional health. Individuals who reported better health status tend to have a higher SES, a healthier lifestyle, and more positive perceptions of social capital and social cohesion for themselves in their communities. To achieve a deeper understanding of the relationship between restructuring and health, the next chapter examines in-depth interviews conducted with residents and key informants in the study communities.

CHAPTER 5. PERCEPTIONS OF RESTRUCTURING AND HEALTH—A QUALITATIVE STUDY

5.1 Introduction

To achieve a deeper understanding of the relationship between restructuring and health, this chapter focuses on 66 interviews conducted in early 2003 in the four study communities. The interview data are the basis for addressing the second major research question for this dissertation: what makes individuals and communities vulnerable or resilient to the impacts of restructuring? The qualitative study complemented the survey research by examining residents' and key informants' daily life experiences of restructuring in their communities. In so doing, the intent of the interviews was to provide richer detail on the relationship between restructuring and health, especially fresh insights on what makes individuals and communities vulnerable or resilient to the impacts of restructuring.

5.2 Method

5.2.1 Purposive Sample

The importance of in-depth interview data is the insights that are gained, with the quality of such insights taking precedence over the sample size (Wainwright 1997). In this study, participants were selected by "purposive sampling", where several criteria were used to identify suitable individuals who could offer rich information on restructuring and health (Curtis, Gesler et al. 2000). In the survey sample, an initial objective was to select people based first on their willingness to be interviewed, and

second, on the length of time they have lived in the respective communities. In order to maximize potential insights and to facilitate comparative analysis, participants from both 'vulnerable' and 'resilient' groups were selected based on their survey data. To provide additional insights, 25 key informants were also selected from the four communities. The key informants included mayors, RCMP officers, social workers, realtors, employment counsellors, the Chamber of Commerce managers and others. The participants (Table 5.1) are therefore a sub-set of the community health survey respondents (N=41) and key informants (N=25). The criteria for their selection were given in Chapter 3.

Table 5.1: Sample Selections and Interview Participants in the Communities

Community	Survey N	Potential interviewees	Target sample	Survey Respondents		Key Informants	Transcripts
				V	R		
Port Hardy	227	143	10-12	6	4	7	15
Prince Rupert	683	407	10-12	6	5	7	18
Tofino	178	110	10-12	4	6	3	10
Ucluelet	116	74	10-12	6	4	8	16
Total	1,204	734	40-48	22	19	25	59

V: Vulnerable group; R: Resilient group

5.2.2 The Interviews

The interviews were guided by a checklist which focussed on four main topics: 1) perceptions of the local economy and quality of life, 2) perceptions of community health, 3) perceptions of personal health, and 4) ideas about coping strategies. Fifty nine of the 66 interviews were taped with the agreement of the participants and were subsequently transcribed. The 59 interviews came from 61 participants since two couples were interviewed at the same time. The demographic details of the interviewees are listed in Table 5.2.

Table 5.2: Description of the Interview Sample

Sample 1: From survey respondents		PH	PR	Tofino	Ucluelet	Total
Gender	Male	6	6	6	5	23
	Female	4	5	4	5	18
Age	19-44	4	4	6	3	17
	45 or over	6	7	4	7	24
Ethnic background	First Nations	1	1		2	4
	Non-First Nations	9	10	10	8	37
Education	Grade 1-12	2	7	4	5	18
	Certificate/college	5	3	2	4	14
	University degree	3	1	4	1	9
Employment	Homemaker				1	1
	Retired	1				1
	Unemployed	1	4	2		7
	Leave of absence		1	1		2
	Self-employed	3	1	1	4	9
	Paid work	5	5	6	5	21
Marital status	Married/common law	9	8	7	8	32
	Widowed			1		1
	Divorced/separated	1	2	1	1	5
	Never married		1	1	1	3
Family income	Up to $39,999	2	6	2	3	13
	$40,000-69,999	3	3	3	2	11
	$70,000 and more	4	2	4	4	14
Total respondents from survey		10	11	10	10	**41****
Sample 2: Key informants		PH	PR*	Tofino	Ucluelet	Total
Gender	Male	4	4		1	9
	Female	1	5		5	11
Total key informants		5	9	0	6	**20****

* There were seven interviews with nine individuals in Prince Rupert.
** There were a total of 61 participants with 59 interviews, specifically, 29 females, 32 males, aged 26-69.

5.2.3 Data Analysis

A qualitative study involves critical assessment and interpretation of the participants' narratives, and understanding of their lived experience. It is necessary to provide sufficient detail and context for the data interpretation (Pyett 2003) so that the analysis produces rich stories (Revill and Seymour 2001). The choice of what stories the interviews tell, as well as whose point of view and voice prevail in subsequent analysis is a complex process. In this case, using the Qualitative Solutions and Research software

(QSR N6), the 59 transcribed interviews were coded using both Tree Nodes and Free Nodes (see Appendix 5). The Free Nodes were coded by specific issues, such as Clayoquot Sound protests. The Tree Nodes were coded by categories and sub-categories with common issues. For example, economic restructuring was voiced in terms of the decline of resource-based industry and tourism expansion. As many categories and sub-categories as the data allowed were generated from the Tree nodes and Free nodes. To determine the relationship between various nodes, two different "combining operations"? *Intersection* and *Overlap*[5] were used. For example, to find those people who talked about resource-based industry (tree node 2), along with decline or downsizing (tree nodes 1 and 2) and who were also negative (1 5) with respect to healthy community (13), the *Intersection* operation was used to identify the text units that contained all these topics. The *Overlap* operation revealed the text units which contained any of the above selected nodes.

After searching and comparing the nodes in this way, the major themes and sub-themes were generated focusing on the main interview topics: 1) perceptions of the local economy and quality of life, which included economic restructuring, and, more specifically, the decline of resource-based industry and the expansion of the tourism industry, and related changes in social service provision and policy; 2) perceptions of community health, in relation to economic and social restructuring, affecting both the sense of community and increased employment stress; 3) perceptions of personal health and stress, particularly related to insufficient income, uncertainty, anxiety over the future,

[5] The Combining operations locate text units that belong to combinations of nodes. Intersection is an operation that will find text units coded by both of two or more selected nodes. Overlap is an operation that will find overlapping text units coded at any of the selected nodes.

and associated family-related concerns; and 4) coping strategies in response to personal experiences of restructuring. This thematic analysis was the basis for a synoptic assessment of the general relationship between restructuring and health and the factors contributing to resilience and/or vulnerability at the individual and community level.

5.3 Results

The major themes and sub-themes which emerged from the tree node and free node based analysis of the interview data are listed in Table 5.3. After exploring the major themes of economic restructuring and social restructuring, the health outcomes of individuals and their communities were interpreted and the links between restructuring and health outcomes were examined.

Table 5.3: Emergent Themes Constructed from Analysis of 59 Interviews

Theme	Sub-theme
Economic restructuring	Resource-based industry decline
	Tourism expansion
Social restructuring	Policy change
	Social services provision
Health and stress	Individual
	Community
Coping strategy	Individual
	Community

5.3.1 Economic Restructuring

5.3.1.1 Resource-based Industry Decline

In the past two decades, there has been a significant decline in commercial fishing, forestry and mining. There have also been reductions in related secondary industries such as fish and wood fibre processing. The loss of jobs in resource-based

industries has caused substantial out-migration as people leave coastal communities to find work elsewhere. Port Hardy was a booming town in the 1970s and 1980s due to its strong resource-based economy founded on fishing, logging and mining. The participants in the interviews described how they enjoyed “the good old days”, as well as how and when the economy declined and what they felt. Three major resource-based industries that were operating successfully suddenly declined or were shut down, hurting this community severely. The local residents were not adequately prepared to cope with the rapid economic change and lacked alternative economic activities. Poor economic performance and a resultant lack of ability to maintain physical plant was instrumental in the burning down of the fish plant in Port Hardy on the night of February 21, 2003. The fish plant was the community’s largest employer. Two months earlier, there had been a similar fire in a Prince Rupert fish plant

Photo 5.1: Fish Plant Destroyed by Fire in Port Hardy

Photo 5.1 shows the fish plant Alpha Processing Ltd. in Port Hardy, which was destroyed by fire. As a result, more than 200 people lost their jobs. Photo by the author, early morning of Feb. 22, 2003.

> "It's not a good economic situation right now. This town has enjoyed, even prior to me coming here ten years ago, this town was booming, it was doing very well, we had a copper mine, the logging industry was up and running very well, the fishing industry was doing really well. Since then, the mine is shut down…and it was about at the same time that the fish industry was drastically cut back. And at the same time the logging industry took a bit of a beating, so it all kind of came at once." (Port Hardy Key Informant)

> "The turns and the fluctuations and the downturns in the last few years in forestry, mining, fishing have really hurt us badly." (Port Hardy Key Informant)

Prince Rupert is the largest city on BC's North Coast. Its resource-based economy is in substantial decline. Participants described the dismay in the community caused by the plummeting of their major industries (forestry and fishing), when alternative economic activities were yet to emerge. The Skeena Cellulose Mill was the largest employer in Prince Rupert, and many people held hopes of its re-opening during the time the interviews were conducted in early 2003 (Photo 5.2). Unfortunately, the mill was totally shut down in early 2004.

> "It's pretty dismal right now, we've been here for eight years, we moved in right at the top, and since we have been here, it has been nothing but downhill, and I am hoping that we are at the bottom of it, I'm hoping that we are not going to go any further down. But when the main economic driving forces are not working, the [Skeena Cellulose] mill is not working, forestry is not what it used to be, fishing is not what it used to be and while they are working hard to diversify their industry, it is just not coming fast enough." (Prince Rupert Key Informant)

In Prince Rupert and Port Hardy, the key issue of restructuring is the concurrent decline of forestry, fishery and other major industries. The industrial decline impacting the communities was too rapid to allow an adequate coping strategy to emerge.

Photo 5.2: Hope in Prince Rupert

Photo 5.2: There was hope that the New Skeena would open soon in Prince Rupert. Unfortunately, the mill was totally shut down in early 2004. Photo by the author, on March 1, 2003.

Tofino used to be a fishing village, but now the fishery industry is gone. Instead, Tofino has become a tourism destination, renowned both nationally and internationally.

> "I certainly alluded to that with the fishing being a dominant force even in the mid to late 80's and certainly was in existence, but the growth has exploded and I think you can certainly tie that, I don't know if there is a cause and effect but you can correlate it to the environmental conflict of 1993, there was a huge jump in tourism after that time. It was great for tourism, all that conflict, but of course logging went away so it is the old story going from the character, the character of the town was defined by resource extraction and resource economy of fishing and logging, okay, then now in that time, it has switched to, very much dominated by the tourism industry, you can see." (Tofino Respondent)

In comparison, Ucluelet was first a fishing village and then a logging company town. People in Ucluelet reminisced about "the good old days" while struggling with current conditions of economic depression. Today, this resource-rich town is shrinking, and hardly able to cope with restructuring within its major employment sector—the forest

industry. People are struggling with poor economic situations due to job losses and a lack of government support for small businesses.

> "Back to twenty years ago, it was easy to get a job… guys with no experience would just go out and shake the herring and be instantly rich, make like a ton of money basically overnight. Because when the herring would come in, the boat owners would be looking for people, they needed people to shake the roe, so you could get a job easily, like guys that we were staying with, went to Hawaii after. Yeah, I made $8,000 in three days." (Ucluelet Respondent)

A former fisherman recalled how in the past people could get jobs easily and earn big money, even those without experience.

> "If I had known ten years ago what I know today, I would have left this town. In 1994 I would have just sold everything and got out. But I put my trust in the government who was promising all kinds of good things, like value-added industries, jobs, jobs, jobs, I don't know if you remember that or not… All it means to me nowadays is a photo-op for some bureaucrats or politicians, because nothing, absolutely nothing. In fact those [small forestry] businesses, who put up their own money and tried to get started, were broken and basically sent out of town." (Ucluelet Key Informant)

This is a powerful statement about the anxiety and uncertainty associated with industrial change. He regretted being stuck in the town, and not selling his business some ten years before the economic downturn. While 1994 was a turning point for forestry industries in that area and Ucluelet, the Clayoquot Sound protest in 1993 stopped the logging of old-growth forests, and at the same time pointed to the importance of value added forestry industries in BC at large and in this town as well. However, government promises faded and caused small businesses to decline. Things have changed since 1994. As the situation worsened, the informant could not get another chance to sell his business anymore, because no one wanted to buy a declining business.

Photo 5.3: Poor Living Conditions in Ucluelet

Photo 5.3: In terms of social and economic inequality, some people have been living in trailers for years in Ucluelet. Residents claim: "we live in a very rich resource environment, but we are poor." Job loss has affected this community seriously. Photo by the author, February 2003.

5.3.1.2 Tourism Growth

Tourism has steadily increased in all four communities, though most significantly in Tofino. Active promotion of tourism is considered important to regional economic development. Despite this, some individuals expressed concern that tourism-related employment pays less and is less stable than working in traditional resource-based jobs.

> "…we'll get some tourism rolling, well on our totally best day we have got the potential of three months of tourism out there, and tourism is not $25.00 an hour jobs or even $20.00 an hour jobs. It's great to have that, but that is not going to sustain us, there's not a hope of that. It's good for kids or whatever, things like that…Entry level jobs, yes, but you are not going to pay a mortgage and all the other things you need, unless you own the outfit, but again it's one small little piece, it's all beneficial, but it's not the answer." (Port Hardy Respondent)

Some residents hold a fairly positive view about the tourist industry in Tofino, because economic development has benefited from tourism.

> "Most definitely has benefited from development. The town [Tofino] has benefited from our tourists." (Tofino Respondent)

> "Most definitely [the increase in tourism is a positive thing for Tofino], it has developed into really, in my opinion, very well made, very well run, resorts. They cater to the tourist and I think they give a very nice appeal." (Tofino Respondent)

> "This is a money generating place and that really makes it stand out on Vancouver Island. It makes it very, very different from Ucluelet and Port Hardy and the other ports." (Tofino Respondent)

Ucluelet needs tourism to charge up its economy; however, the community has no desire to become a second Tofino.

> "They have to understand that they [the community] need it [tourism], it's needed here, but they don't want to overcrowd it. It's a beautiful place to live; they don't want to ruin it. In Tofino they have houses on top of one another; there is hardly any space over there now." (Ucluelet Respondent)

5.3.2 Social Restructuring

Along with economic restructuring, the policy changes in social services have more seriously impacted people who need income assistance. Support for social services has also changed rapidly in the local communities, because government has cut funding for service provision and training programs. A substantial number of respondents expressed concern at the reduction in these services, especially cuts to Income Assistance, changes to Employment Insurance (EI) regulations, and shrinking health care services such as mental health support. In Ucluelet, residents are struggling because of a lack of job opportunities. Many people are fighting to obtain EI. Thirty-nine families rely solely on the food bank, especially during winter.

While many residents are critical of what they see as government dysfunction (the shortage of, and limited access to, services), many others feel that they are being ignored.

Some feel strongly that it is the responsibility of the government to get jobs back for them, since it is the fault of poor government policy that their jobs have been lost. Some key informants added that local municipalities and non-profit groups had to step in to fill the gaps left by reduced provincial and federal services. However, three of the four municipalities, excluding Tofino, face shrinking budgets, which affects municipal services provision.

> "We always have to leave [to access special health care], and very few specialists, as they cut back funding, the trips that specialists used to take up here periodically are becoming less and less. So we have to go down wherever it is…now we have to travel to see them." (Port Hardy Respondent)

As a part of restructuring, social services have indeed been reduced. Health care in local communities, for example, has been affected, resulting in a dearth of specialists. One respondent, who has heart disease, had to travel to Victoria or Vancouver to see the specialists routinely which was not easy for him and his wife. First, their health conditions hardly allow them to make the trips. Second, both are seniors, retired, and they planned to move to Victoria or Vancouver but could not sell their house due to the economic decline in Port Hardy.

> "Every department [in the hospital] that I can think of has lost staff in the last year or people are leaving and they are not being replaced, not necessarily that they lost their job, somebody moved away, we are not going to fill that position." (Prince Rupert Respondent)

> "I know there have been cuts, like in social programs, like what you would call social assistance and welfare now. That is getting harder and harder for people to obtain." (Prince Rupert Key Informant)

Things are not good in Prince Rupert either. Government funding cuts resulted in job losses, along with reduced social programs and services. The largest hospital in the North Coast was also affected.

> "There has always been a fear that the hospital is going to shut down and sometimes you hear squeaks of this with the new government coming in and they were talking about, well, there is 1,400 people here and they can go to Port Alberni, but the fact is that we get a million visitors here a year here and they are going to require that, I mean the nature of this place is isolation, you need a hospital. It's not just Tofino, it is Ahousat, it is Opitsat, it's Esowista, and it's Ucluelet too." (Tofino Respondent)

> "Well the mental health, it fluctuates. Sometimes we have a worker here and sometimes we don't and sometimes the ones that we have aren't really very qualified or very good… So I find that quite lacking." (Ucluelet Respondent)

Social services, especially health care are major concerns for all the study communities. BC health care cannot meet the needs of local communities, such as specialists, mental health care, and even some general health care. Another major concern is how to get EI. It is getting harder and harder for people to obtain EI due to the closure of local social service offices, funding cutbacks and the increase in the number of required hours.

> "These plants now run 24 hours a day, 7 days a week. They run two 12 hour shifts and they run 4 shifts a week, so a person can actually work a full plant, work Monday to Thursday at one plant, and Friday to Sunday at the other plant and some of them do that, because that is the only way they can get enough hours in to get EI, to make enough money to survive in the winter, so they work seven days a week for three or four months and then take their winter." (Ucluelet Respondent)

It is clear from the analysis thus far that, on the one hand, the decline of the resource-based industry and services sector expansion have resulted in job losses and reduced income; on the other hand, it is getting increasingly difficult for people to obtain

EI due to the closure of local social service offices, funding cutbacks and the growing number of required hours.

5.3.3 Health and Stress

5.3.3.1 Community Health

Perceptions of community health vary widely within each community. The principal criteria for evaluating a healthy community, according to respondents and key informants, are: sense of community, economic situation and social problems. Elements that are crucial to healthy communities were found to be common across all communities: clean air and water, aesthetic landscapes and a social environment composed of a peaceful and closely-knit atmosphere, cultural diversity, openness, and supporting each other, volunteerism, willingness of local residents to adapt to change, and healthy lifestyles. It is clear that friendship, bonding, volunteerism, social and physical activities contribute to community health.

Views on the negative impacts on community health differ by community, except on the issues of drugs and alcohol abuse among youth and remoteness. Many respondents felt that economic crises have impacted community health. A few people felt that economic crises have resulted in stronger, more tightly-knit communities as people support each other through difficult times. Others expressed concern over the increasing levels of alcohol and drug use, a lack of opportunities for youth, and a general shortage of employment within their communities. In Port Hardy, Prince Rupert and Ucluelet, respondents commented on the impacts of out-migration on community health? declining populations result from poorer economic and employment situations, fewer volunteers and less individual involvement in community events and organizations.

However, what are the factors that affect people's viewpoints on community health? Do resilient and vulnerable individuals express different opinions? Whose voices should be cited? To minimize bias, the voices of key informants and both resilient and vulnerable individuals from the study communities are cited. Comparisons of the vulnerable and resilient groups show that, in general, the resilient group holds more positive views than their counterparts about their community's and their personal health status.

Port Hardy

The perception of whether or not Port Hardy is a healthy community varies from individual to individual and from family to family. When asked "Would you see Port Hardy as a healthy community?" people responded as follows:

> "…I think it could be a lot healthier, I don't think it is a real healthy community. I think just because of the negative impact on the community with the economy, like we are a very resource based economy here in Port Hardy, and I think that there is a lot of negativity. I feel there is…You don't see new businesses opening up; you just see businesses closing down. I don't think that fosters a healthy community." (Port Hardy Key Informant)

> "No, I don't. I have a 13-year-old daughter, whom I believe and know, has not tried alcohol or drugs, doesn't smoke and she's the minority. I think there are kids her age who are regularly drinking every weekend and I don't know where the problem stems because it didn't used to be that way. I don't know whether it is economic frustration, whether it's lack of things to do, there used to be more things to do for teenagers when there was more money in the community. With the adults as well, despite the fact that there isn't a lot of money around, people spend a lot of their time getting impaired. I think it has improved but it is still pretty bad here. The rate of teenage pregnancy, I read statistics that I believe were based on 2000, and the rate of teenage pregnancy, Port Hardy was No. 1." (Port Hardy Vulnerable Respondent)

Port Hardy, in general, is not seen to be a healthy community, because first, it has been negatively impacted by its sluggish economy. A number of local residents

complained that few new businesses were emerging to counter business closures in the resource sector. Second, there are many problems among teenagers in the form of drug use, drinking, smoking, and a high rate of teenage pregnancy. Informants reveal that the teenagers in the community did not have that many problems in the past 10 or 20 years. Further, there used to be more things for teenagers to do when the community was more prosperous.

> "On the whole, I would say, yes it is [a healthy community]. We have facilities for exercise and entertainment, and they are used. There are lots of community groups that get together to do different things. There is not the isolation that there would be in a city, and so I think that's a good thing. People care about you and you know when you read of people… because neighbours are very aware of when you are in or out. So, I do think it is quite a healthy community." (Port Hardy Resilient Respondent)

From a different viewpoint this woman sees Port Hardy as a rather healthy community, because there are facilities for exercise and entertainment, and people are more caring compared to city residents, reflecting greater involvement and social support.

Prince Rupert

"Would you see Prince Rupert as a healthy community?"

> "Do I think it's a healthy community? It's been way healthier. I think it has some problems. We do have some drug problems in the community and that could be because of the money that's been floating around for a few years. We see some gaps in our services and we find it difficult being a northern community, attracting qualified, competent people to fill the void, it is a real challenge…" (Prince Rupert Key Informant)

> "There is an awful lot of alcohol abuse in this town… I just know for me, like the mental health thing, there is quite a large, in my opinion, there seems to be a large population for a small town that have mental health problems." (Prince Rupert Key Informant)

Neither of these two key informants thinks that Prince Rupert is a healthy community. There are some major points from their observations: the negative change in

community health—"it's been way healthier", which means that it used to be a healthy community, but not now, given the alcohol and drug abuse, the prevalence of mental health problems, and the lack of services and professionals. All these problems are linked to an ongoing lack of investment within the context of economic decline.

> "Not any more. There is a hell of a lot of mental stress, people have their sicknesses and stuff like that. Let's say two or two and a half years, the mental attitude… People are worried where the next paycheque is coming from, about their job. Some of the younger generation, they didn't have any seniority and they got terminated right off the bat. There were quite a few that sat around waiting to see if they get called back. A lot of separations, divorces. A lot of people are hitting the drugs and the booze." (Prince Rupert Vulnerable Respondent)

Similarly, for this man, Prince Rupert is not a healthy community anymore. There is too much mental stress, sickness, drug abuse and family break-up. Many residents, like him, were "worried where the next paycheque is coming from" because of job losses and the only hope is "waiting to see if they get called back" to their former employer.

> "That's a toughie. There are a lot of sick people here. I don't know if that has anything to do with the financial end of it, but there are quite a few people here, we are getting older. Well, it hasn't grown very much. It shrinks. You just walk around town and you will see lots of empty stores. You go to the malls, and businesses are closing up and shutting their doors, so I don't know if that is healthy or not. I wouldn't say it is healthy when you are losing business and your population is decreasing and it's aging." (Prince Rupert Vulnerable Respondent)

Community health in Prince Rupert is negatively impacted by the changes in the economy, including business closures, and the associated population loss, leaving an increasingly aging population facing health problems.

> "Economics plays a huge part I think, more than probably it should. But I mean if you don't have a job, things look pretty bleak. I think too that in our community, we have, like we help that those that don't have, we have the Salvation Army Soup Kitchen, and the Catholics runs a soup thing on Sunday, and we run a pancake breakfast, like this last Saturday, we served 85 meals... So we get very hungry people. The other thing too, is that welfare has cut down on the payments

> of Welfare and like they want you to go out and get a job but to be blunt, a lot of people that come to us, they are unemployable." (Prince Rupert Resilient Respondent)

For this woman, Prince Rupert is not a healthy community though she is in a very good position and plays an active role in many social events. According to her, there are too many hungry and unemployed people, who suffer from a lack of social services. In contrast, there were some who viewed Prince Rupert as a healthy community and an ideal place to live, despite the problems.

> "They say that there is a lot of drug use, but I don't see it personally but I am not on the scene with the drug use. Alcohol, people drink I guess. You don't see too many drunks staggering around during the day or anything… There were some cuts at the hospital too, recently which was negative. One of my friends was going out with a nurse and she had to move away because she got laid off. I know someone who was affected…"

He repeatedly expressed his positive feelings about the town, attachment to the community, his cheerful outlook, and his satisfactory economic situation. He admits that he is an exception, because "you don't hear that very often".

> "I can't say enough good things about Prince Rupert. Everybody says I am cheesy advocate for the place but I really do like it here, I don't want to be anywhere else. I like to go on vacation but I don't want to live anywhere but Prince Rupert. For me Prince Rupert is the place to be. I don't want to live anywhere else, you don't hear that very often but that is the way I feel. Here everybody knows me so I like it like that… My first house was paid off and then we had to get a big brand new house." (Prince Rupert Resilient Respondent)

Tofino

Different viewpoints were expressed in Tofino on the question: "Would you see Tofino as a healthy community?"

> "Yes, because one of the major determinants of social health is the fact that we are exposed to perspectives of Europeans and South Americans and Asian people all summer long. It makes for a very strange characteristic for such a small town and I believe that it contributes to our social health. Also the fragmentation of the

> sub-cultures that are referred to does lend a real air of vibrancy. It is never boring. You have to really go out of your way to be bored in this town, in contrast to other small villages of the same size." (Tofino Resilient Respondent)

This man viewed Tofino as a very healthy and vibrant community and attributed that mainly to the tourism industry. However, others held a completely different opinion about tourism.

> "Everybody I know, I'll just take this winter as an example, now I kind of blame it on that we do have, you know, a million tourists come through town from all other parts of the planet and we don't have a really good immune system because we are so small and a lot of people just sort of basically stay in the community, and the flu bugs that people have been getting over the years, are way worse than a number of years ago. There are a lot of bronchial problems, respiratory problems." (Tofino Vulnerable Respondent)

For another woman, Tofino is a healthy community for some but not for others, especially for First Nations young people.

> "Yes and no. There are a lot of, especially with the First Nations, there are a lot of substance abuse problems that you just walk down the street and you see people just sort of sitting around and then once again there are very healthy, like myself, our family and people we know, and people we associate with. There are a lot of kids with special needs, First Nation's kids." (Tofino Resilient Respondent)

Additional concerns expressed included the fact that property and business owners who are not local residents are not contributing to the community.

> "There are non-residents who perhaps own property, who are also making money, either through leasing their B & B's, or leasing their houses, or leasing their businesses, leasing their boats. A lot of people are making money that don't even live here." (Tofino Vulnerable Respondent)

Several of these concerns contribute to a sense of community fragmentation. Tourism tends to provide low-paying seasonal jobs. The seasonal nature of employment

causes mental stress, due to overwork during the tourist season and underemployment and a lack of income in the off-season.

> "Because of tourism, we have a lot of people from all over that come to work and they just stay for six months, so it is not like a close-knit community that we had before and I think because they encourage tourism a lot." (Tofino Vulnerable Respondent)

This community fragmentation was evident in the apparent conflicts among different sub-groups, for example, long-time residents vs. newcomers, and environmentalists vs. forestry workers (see Photo 5.4).

Photo 5.4: Protecting a Tree in Tofino

Photo 5.4 shows a symbol of the struggle between environmentalists and some local people. A huge amount of money ($125,000) has gone into protecting this particular tree. Photo by the author, February 2003.

> "It was big money for that [to protect the tree, Photo 5.4]. It looks sad, not pretty anymore." "We have no budget for improving our sewage system, we have water restriction in summer, hey, this is rainforest." "It was also in summer, we have no parking, no rooms, and everywhere you see nothing but people." "But we spent big money on that dying tree." (Tofino Respondents, male and female)

Ucluelet

"Would you see Ucluelet as a healthy community?"

> "No. There is a lot of drug abuse in this town, especially among the young people but even the older ones too. The older ones, yeah, the crack, it drives me nuts. Smoking crack is just terrible. I know that there is a lot of pot smoking in the high school, I was quite surprised to learn that some of the students were smoking as much as they were, so I can't answer why." (Ucluelet Vulnerable Respondent)

> "Well I think it can be, I think it depends on your personality, but no! I think it has many health and social problems, such as drinking and drugs. I think that most of our teenage kids go through it, I don't think anyone is excluded from that. I think the ones with strong minds don't go there, but I think that most kids dabble in it and a lot of them get hooked and their lives are ruined." (Ucluelet Vulnerable Respondent)

> "Jobs, jobs, jobs. And for the children, a gymnasium, cultural centres and the children are left alone a lot, they are really badly left alone. The ones I just finished guarding last week, we are knocking on wood, banging our heads on the wall dealing with these little 13 year olds." (Ucluelet Key Informant)

Several people expressed the view that Ucluelet should be a healthy community but, unfortunately, it is not. There are many youth involved in drinking and drug use, and their lives are ruined. The teenagers' problems, explained by a woman who had worked in Ucluelet for more than ten years, were due to economic decline, because kids have been badly provided for by their parents, by a broken family, and by a lack of jobs for both adults and youth.

> "When I think of a healthy community I think more of economics and that sort of thing and I would say no. They are really struggling and it is certainly not a very

> vibrant community. A lot of people think it is because of policies at city hall, they don't want small businesses. I won't say they don't but they don't seem to understand how policies affect small business and they are trying to get as much tax dollars out of them and it is prohibitive for small businesses to start, which makes it even more difficult for people who want to stay and try and get something going and I think that is changing. There is certainly, because of my involvement in the food bank, I see a lot of the people that come in the food bank tend to drink quite a bit. Where the cause and effect there is I don't know, but the food bank numbers are increasing." (Ucluelet Key Informant)

A key informant has worked in Ucluelet for nearly ten years. He has been involved in many voluntary activities including a food bank, established in 1999, which has been in high demand in the last few years. There are 39 families relying on the food bank. During a half day, when I volunteered at the food bank, some 13 people came for food. They admitted that life was tough, with a lack of funding support and no job opportunities, especially in the last few years. When I asked if I could interview them, one young single mother with three young kids felt "embarrassed" because of her poor economic situation. One person told me that he would agree to an interview if he got a job, and he had been told to get back to his job soon, once the fish plant reopened. He left a phone number with me and said "you can find me if I am working in this plant; otherwise you cannot find me because I have no place to live and I do not have a phone." I tried this number several times, but the fish plant operator answered the phone and he did not know when the plant would open.

> "For those that are working in the seasonal industry, no I don't believe that it is healthy… When I first moved here in '91 I felt that this was a really great place, with opportunities to work and there were more services, you could access assistance if you needed it, not just social services, like just day care and things like that. It is falling apart." (Ucluelet Key Informant)

A fish plant employee believed that the community's health had declined in Ucluelet, from a really vibrant place with many job opportunities in 1991 to today's poor conditions with only seasonal jobs. Moreover, economic decline has been accompanied by a decline in the quality and quantity of community and social services.

> "No, I would not consider it a healthy community. Well what comes to mind when I say that is there seems to be no outlet for any kind of new expansion or growth or change. For some reason, it is still sidetracked on these issues that never got resolved: that have left this kind of either broken homes or broken relationships and you know people who are now ill who were very healthy and vibrant. So it seems to me that individually, yes there are some individuals who have moved forward, but as a whole, it still has that kind of cloud resting over it, in my mind… So, whether something is happening or not, it doesn't trickle down to the people at hand, they don't really know. So I would call it unhealthy. There is a lack of something that is core to a community that makes it feel good, that I just, I have never seen it here to this day." (Ucluelet Key Informant)

A female key informant who had worked in Ucluelet for more than ten years pointed out many problems that affected community health in Ucluelet - the lack of economic growth and positive change in the whole community, the forestry industry decline since the Clayoquot Sound protest in 1993, associated social problems such as broken homes and broken relationships, personal health problems related to these changes, and a lack of identity with the community.

One of the few people who regarded Ucluelet as a healthy community was a woman who felt strongly committed to the community because it is a desirable place for her to raise a family despite the uncertainty about the future.

> "Yes, I feel committed to this community and I can't see, in the foreseeable future, wanting to move… Both my husband and I had experiences living in cities and knew that it was not the kind of environment that we wanted to raise a family in so very definitely…I mean I'm sitting here looking outside and thinking how beautiful it is." (Ucluelet Resilient Respondent)

This analysis shows that the respondents are aware of a clear link between social and economic restructuring and community health. Though resilient individuals view their community more positively than those who are vulnerable, there is consensus that restructuring has negatively impacted community health through its effects on the local economy, business closures and social service provision. Both Port Hardy and Prince Rupert were seen to have been healthy communities, but not today. Tofino and Ucluelet are also challenged communities with drug use and drinking among youth being just one indicator of the problems. The next two sections explore the relationships between restructuring and individual health and stress.

5.3.3.2 Individual Health

Self-reported health ranged from *poor* to *excellent*. There is strong evidence that residents have experienced or are experiencing poor health because of changes in their personal employment and/or the community economy, especially in Prince Rupert and Port Hardy. Many people reported knowing individuals whose health had been negatively affected by the economic downturn in the community with depression, suicide, marital break-ups and family violence being mentioned as associated outcomes.

> "I think if you went up to the Druggist's…you don't need to know names or anything, and asked them how many prescriptions that they have put out there on a regular basis for depression…When people become depressed they do things that are not ordinary to their nature, they may become violent, they may decide to drink too much, they might go into physical abuse of spouses, they might go into physical abuse of siblings and it seems to escalate and snowball." (Port Hardy Resilient Respondent)

To emphasize her view of the effect of economic decline on health, this woman suggested examining the increase in the number of prescriptions in the drug store. In her

view, economic problems have caused many social problems in the community. Several examples were given including depression, violence, drinking and physical abuse.

> "I have seen some significant changes. I don't know whether we are seeing them now because they are more prevalent or basically the blinders are off, it is hard to say. We are seeing a suicide increase in the community; we have had a few in the last few months that we can say pretty much is directly related to the economic uncertainty." (Prince Rupert Key Informant)

While the attribution of suicide events to economic stress and future uncertainty is speculative, the recurrence of references to the link with specific cases in view certainly strengthens the evidence for a direct connection.

> "A lot of people are going through that right now, losing homes, losing cars. I was just talking to this one friend of mine, and it's a good thing he is in church, otherwise I think he would be the next one that they would hear about suicide or something like that. He's in the process of losing his home and his car. He used to work at the mill here and our mill has been shut down for so long that… A lot of people are so sad to living high on the hog, they have to come down to a certain level, and they can't get used to it, and they can't deal with it. I think that is why a lot of people tend to turn to drinking and drugs or they just commit suicide and totally give up." (Prince Rupert Key Informant)

This key informant provided a detailed statement about the linkage between economic decline and health, noting the negative effect of having to adjust to a significantly reduced standard of living; the implication being that it is the relative deprivation compared with past personal circumstances that is particularly hard to deal with.

> "[My health] is going downhill [because of] stress for one, not knowing if I am going to get a job back out there [at Skeena Cellulose Mill]. If I don't get a job back out there, then I have to start looking, that means that I am going to have to move, so that means that I am going to have to sell my house at a loss." (Prince Rupert Vulnerable Respondent)

This man draws a direct causal connection between health, stress and unemployment compounded by the prospect of loss of equity by being forced to sell his home in a depressed housing market.

> "Well, I have had some health problems, I have inflammatory bowel disease and it is stress related, and I know when I get under periods of stress that it flares up. So basically I am a very healthy person, I eat well, I exercise, I do all the good things, but the stress kind of gets to me, so I have this condition that I have to stay on top of." (Ucluelet Vulnerable Respondent)

Stress was quite frequently mentioned as a determinant of ill health and a cause of vulnerability to physical health problems among those who otherwise considered themselves to be healthy and who actively pursue a healthy lifestyle.

> "I need more exercises. I used to do a lot of surfing. I have far less time in the sense of physically actually going out and doing things. I play soccer once a week, but in the past, it was hiking, fishing, we used to be fairly active. You are focusing more on business; you used to have an 8 to 10 hour a day job with a company, now you are probably spending 14-15 hours trying to keep your business rolling along, so it cuts into your physical activity and other things." (Ucluelet Resilient Respondent)

This self-employed business owner provides insights into how his lifestyle has been influenced by the time required to run a business which substantially reduced the number of hours he could spend on exercise. In his case, the shift from company employee to self employment, due to economic restructuring in his community, impacts on not only health but also quality of life.

> "Yes, unemployment in Ucluelet when the logging closed down… I had to watch these people get sick, there were suicides, marital break-ups, like the divorce bug hit that town like you have never seen, and families just fell apart. For these guys, this was their career and these were men that were 32 and 36 and 38 and 44 years old." (Tofino Resilient Respondent)

While there was no direct reference to effects of economic changes in Tofino on residents' health, concerns were expressed about the negative impacts of unemployment on health in the neighbouring community of Ucluelet. This particular quote emphasises the consequences for early and mid-career men and their families resulting from plant closures in the logging industry.

> "[My health is] Excellent, I'm 39 years old, and I think I look pretty good, my health is excellent, I have never had a sick day in my life and I'm excellent." (Tofino Resilient Respondent)

This final quote indicates that, at least in Tofino, for some the local economy is a source of prosperity as this manager of a high profit company happily describes his excellent health status linked to the success of his business.

5.3.3.3 Individual Stress

For those people reporting a high level of stress, the most common stresses included insufficient income, uncertainty, and anxiety over the future, work environment issues, and family-related concerns.

> "Anxiety over the future, not knowing is the big one. If you know what you are going to do next February, not this February, next February - I like to plan things out there, but when you don't know, it makes it very stressful…If you are working on a continuous basis, your stress isn't there. Underemployment is a significant factor, and I don't care – anybody that you interview in this town, they may say that things aren't doing too bad, but anybody who is underemployed or unemployed, they are experiencing significant stress." (Port Hardy Vulnerable Respondent)

Anxiety over the future, typically linked to uncertainties in employment, was a big issue for many residents in Port Hardy, Prince Rupert and Ucluelet. These communities are under stress and the unemployed are especially hard hit.

> "The economics, no money, wondering where I am going to go next month, what is going to happen, the bills are piling up and I have a restless time sleeping. In the last six months, I am not sleeping as good as I used to. Back then I wasn't sleeping all that good, but it just seems to get worse, I sleep 3 or 4 hours, sometimes I wake up every 2 hours." (Prince Rupert Vulnerable Respondent)

Personal reactions to job and income-related stressors can compound the situation, as in this case where anxiety impacts on sleep patterns and thereby quality of life and ability to cope.

> "That is a loaded question. My job, and I think our lifestyle is hard, with [my husband] gone all summer [fishing], and home all winter, I find that kind of stressful." (Ucluelet Vulnerable Respondent)

Even for those who have kept their jobs, albeit sometimes at reduced income, lifestyles can be very challenging due to the seasonal nature of the employment, for example, in the fishing industry, where long absences present difficulties for those being away and leaving families behind.

5.3.4 Coping Strategy

Given the prevalence of employment and financial stress, it is not surprising that the coping strategy that most residents expressed for both their communities and themselves was the acute need for jobs.

> "I think that financial stress is the leading break-ups of the home. And when that happens, then all the mental anguish comes in on top of it, so now you not only have financial trouble, you have mental stress" (Port Hardy Respondent)

At an individual level, reliance on family and friends was a key coping strategy for dealing with stress and ill health. Participation in leisure activities and community involvement were also very important.

5.3.4.1 Community Coping Strategy

Coping strategies vary from one community to another. While there are some demands that all communities have in common, particular issues are distinct for each individual community. For example, the availability of employment opportunities is a common concern for all the communities but Tofino. Many of the participants commented that the creation of a healthier community was a shared responsibility of government and the community itself, although there were significant barriers to achieving this, not least because of generally poor communications and understanding between local residents and government agencies.

Port Hardy

In Port Hardy, comments on an effective coping strategy centred on the need to increase employment opportunities, such as:

> "Probably, another industry."
> "A couple of strong employers."
> "Promote tourism."

> "I think more employment opportunities. There are a lot of resources up here, it's a matter of exploiting those resources in every possible way, they are just sitting there, including logging and I think that could be done responsibly."

> "I would like to see value-added business in the wood industry, or the fishing industry, whether it be farmed or wild. I think that there is potential there."

> "Well, some economic boom, if some industry decided to come in here, environmentally safe industry I should say, and create jobs for people, it helps, it gives a bigger tax base so the town can do more, it gives employment, so that in itself gives people a sense of wellbeing."

The creation of a healthier community through increased employment was seen by some to be a shared responsibility of the government and the community itself.

Nevertheless, many were quick to identify government at all levels as having prime responsibility. Some expressed anger and frustration of the actions (or failure to act) represented by both federal and provincial government policies. For example, federal government policy was widely seen to the major reason for the substantial decline of the fishery industry. Furthermore, as a small, isolated community, residents felt that Port Hardy had been neglected by the provincial government in its failure to address under- and unemployment.

> "I think it has to be the provincial government. There has to be a commitment to look at rural communities and to give us a bigger piece of the pie. We are taxpayers too."

> "I think the present provincial government is not doing us any good. It's the federal with the fishing. I don't think they are really thinking of everyone. I think they are introducing all these rules and regulations, but I don't think they have ever been out to see how it affects people."

> "Both the federal and provincial government, they have to sit down at the table and talk. And provincially, I think they are finally coming around now. We have been hammering at them quite a bit and we have been unhappy and this is throughout the province, we've been unhappy that the rural has seemed to be forgotten about. And just recently I have noticed that there is a bit more of a trend to get their… 'oh, oh, we are making a mistake here, let's have a look.' So I think they are starting to respond. Federally, I don't think they know we exist… They have not, I don't believe they have in their mind, a sense that there is a community like Port Hardy in existence."

Prince Rupert

Not surprisingly, similar views were expressed about coping strategies for Prince Rupert. Increasing employment opportunities was the predominant theme and priority, especially the high hope (subsequently dashed) that the Skeena Cellulose Mill would be reopened, which in the past had played a key role as the major employer in the community.

> "Well, to see the pulp mill operating."
> "The mill goes full time."
> "Get the pulp mill off the ground. They should give us tax free for one year."
>
> "Jobs obviously, we have so much here, we just need the jobs. If the mill is up and running."
>
> "It wouldn't bother me if that mill didn't open, because I think too many people depended on that, and I would like to see other things happening. Certainly the container port would be awesome."
>
> "We need to get some closure on this mill, some certainty. To know which way we are going so we can actually plan for the future. I see that in the next year we will resolve that, I see the mill coming back up and changing how we do our business.
>
> "Well, definitely the mill will play a big role one way or the other, if it stays down, there is obviously going to be some permanent changes."

Some residents recognized the vulnerability of economic dependence on a single industry and employer, and therefore the desirability of developing a more diversified economic and employment base in Prince Rupert:

> "Having the industry diversified, so we are not so reliant on one or two things."
> "Definitely more businesses."
> "Economic development."
>
> "A full time large industry, I think that is what this place needs right now is security, job security."
>
> "Probably a little more diversity with the jobs, we are not only relying on the fishing or the pulp mill."
>
> "If something like that was to come in and put more jobs in and the mill were to start up, the grain terminals to start up, then things would be great around here."

The combination of municipal and provincial governments was seen as having the main responsibility for economic development and job creation, and the provision of

adequate social support services. As in Port Hardy, there was a sense of being ignored as an isolated northern community.

> "I think that the mayor has a lot to do with it, and actually we have a new mayor so hopefully there will be some good change."
>
> "I think putting some things into place within our social policies that would bridge the gap... I definitely see that as a need."
>
> "I think it is a little bit of local government, provincial government, part of our community, to try to entice people to come here, but I don't know, I think it is just a mix of people trying to make it more stable or a place where people want to put in a company or put industry. I guess it is up to the company to decide whether or not they want to plant themselves here."
>
> "I see that the provincial level of government has to realize that their small communities are here to stay whether they like them or not, and they are not going to move into these big major cities and everything doesn't revolve around Vancouver. There is a world north of Prince George, Gordon Campbell doesn't realize it. There are other people out here. I don't know what the population of B.C. is, maybe around 3 million and what do they have, 2 million in Vancouver. The rest of us are scattered throughout the province. And the north is a big economic generator for people in the south. There are a lot of jobs that are actually created in the south from the north and some of the people down there don't realize that. They don't know, they don't have a clue."
>
> "But in another way, it's your local government, it's your provincial government, it's your federal government, I mean it is a big issue, but basically rural Canada, which we are, nobody cares about."

Tofino

Quite different views about creating a healthy community were expressed by Tofino residents. There was far more emphasis on the need for improved recreational facilities, seniors care, social programs, and hospital and health care. At the same time, not everybody wanted to see any more change in Tofino, given the rapidity of the changes that the community has experienced in recent years with the major growth of tourism.

> "More recreational facilities, formal recreational facilities, a pool, an arena, stuff like that, it is not that great for elderly people because of the less sophisticated medical facilities, and it really, really sucks for teenagers."
>
> "Long term care facilities for elderly people… I think that there are two, huge, huge environmental issues that must be dealt with and one is our waste disposal."
>
> "A community centre with a youth oriented, like a rec-centre for the children. Take drugs off the popularity scale and put them on your certain element of people, take it away or get it out of the circle of the young people right now and get them to more activities, you know.
>
> "The hospital is going to need to be expanded, especially with this thing down in Ucluelet occurs. Still, the little hospital over in Tofino is going to need some improving."
>
> "It doesn't need anything more here. I can't, I don't know, more sunshine, but rain, you can't have rain forests without rain. [Even during summer], there is so much room here, it is still not crowded, you don't feel like you are downtown in the big cities. 99% of the people in the world are nice people. What would I do better, what could be done better? What more could be done? I don't have any answer to that. You can always find something to complain about if you choose to, but why bother, because in my case it is not going to take you anywhere.

In terms of making Tofino a better and a healthier place to live, residents here, as elsewhere, felt that responsibility should be shared among the municipal council, local businesses and the community itself with support from the provincial and federal governments.

> "Council in collaboration with provincial and federal governments, because they are too expensive for our council to pursue by itself."
>
> "Well community lobbying, the MP's and MLA's, I do a lot of writing nasty letters, that is what I do for my entertainment, you know."
>
> "Well I think that people within the community basically have to take a bit of responsibility. I'd say a lot of responsibility falls on the municipal government, to make by-laws and take some responsibility for dealing with that, like at this point, we are basically a resort town, you know, without that designation and we don't have any tourist tax.

> "It is the council, I think the council that we have right now takes in a broad perspective of the people here, and we have a fellow who works at the local co-op. We have a real good general mix of people that went in."

Ucluelet

Similar to Port Hardy and Prince Rupert, the major coping strategies for Ucluelet were economic development and increased employment opportunities. There were mixed views on expanding tourism in Ucluelet as the base for employment growth. High priority was also placed on community and recreation facilities, especially for youth. However, not everybody wanted to see change in the community, as one person expressed it: "I don't think I would do anything, I think I would just kind of leave it."

> "More jobs."
> "We are looking more at whether it is tourism related businesses."

> "I would like to see more employment, but where it is going to come from I don't know. I want employment, not just for us but for the young people to survive. I would like to see a little bit busier."

> "I think the biggest thing that would help us here is with the tourism industry, we need a big increase there."

> "If we diversified in industry. Even small businesses, taking advantage of a lot of the wild produce that we have, like the mushrooms, the berries, make little cottage industries that would be awesome. Get more into the tourism, but have a greater say in it, allow the community more voice, more people get involved in the council and make the council here accountable. We need better services here, have services coming in to this community, not leaving but coming in, add into it, like if you don't want to have it open full time, well at least part time, but right now there is really nothing."

> "A community centre. Like building an ice rink or something, that would be good. And mental health, they have to do something, because the drug problems are going to get worse, there is no help for anybody with depression around here, or mental illness."

> "For my community as a whole, would be better representation within government and easier access to government services and, I think the more that I hear about government cutbacks, you know, we've got to get rid of so many,

> factors like that in government policy. And beyond that, year round bus service between Ucluelet and Tofino. So many people that I encounter find a job half way up the highway and get there without a vehicle."

Concerning responsibility to make Ucluelet a healthier community and a better place to live, the views expressed echo those elsewhere in terms of the shared roles of the various levels of government, while recognizing the need to customize policies and programs to suit the circumstances of the local situation, and, in so doing, to take advantage of the capacity in the local community itself.

> "I think our municipal government has a lot to do with it."

> "Our band council and the band councillors should be setting by-laws over there, because they don't have any by-laws on that side at all, nothing."

> "It is pretty much focused on the personal responsibility. People have to have their own sense and vision of where they want to be, and then I think corporately you elect or you demand out of your officials that responsibility."

> "Well I guess, like most communities, we need to get away from our reliance on tourism. Not that it is a bad thing, but it is all people can see, is tourism, and we need to change government policy that allows more fishing, more small business type operations. And so it's going to be an increase in economic diversity, that's the only hope."

> "Governments have to loosen up policy stuff to understand how communities work. There has to be more information and support for things and the municipal politics has to recognize some of the economics, understand more about economics generally and they might understand the finance of their own business, but they have no clue, from my perspective, about economics generally other than to follow the same path that everybody is following… So politicians need more education around that, what can we do otherwise. I think that communities need to be more open to new ideas and that has to come from council. I think if council would show more support, more openness to new ideas then, and show that support through community things, then I think the community would start to recognize it. I think that is the same with the federal government and the provincial government. If they put in good policies and follow them, instead of being forced to put some good policies in place, and then don't follow them anyway… So it is the responsibility of everyone. Canada is a community, and we all need to do this together, 52% of the people in the province live in and around

Vancouver, but 48% don't, so we have to figure out to make a balance and make rural communities work as well."

5.3.4.2 Individual Coping Strategies

Support from family and friends

Family and friends constitute the major support for almost everybody who was interviewed. Many similar statements came from the participants, for example,

"My mom lives here too and she helps out."
"I have lots of friends here, family lives right here."
"I have a few very close friends here in town."

"I have a small group of friends who give me excellent opportunities for stress release".

"I have a good core of friends that I have grown up with here, and colleagues that have now become my friends."

[As husband and wife], "we share with each other, we get our biggest support from each other. We like each other."

"I have a lot of friends and my husband is pretty good and my family is pretty supportive, even though they don't live here I can just call them and cry for an hour or whatever."

"It's my mother and the counsellor and a couple of my uncles and aunties. When it's really stressful, I just turn everything off."

"We both have mutual friends as well as our separate friends, and we try and take turns going out on our own as well as going out together. We make it a point, of going out together at least once every two weeks, even if it is just for a couple of hours and then we try to get out once a week on our own…"

"I'm very lucky that way; I do have a lot of support. I have a wonderful group of friends, very, very close. We have been friends since high school. My brother and his wife live here. My mom is in Terrace which isn't too far away, and my boyfriend, he's been wonderful through all of this."

Particular emphasis was placed on the mutual support provided in times of stress.

"They [My friends] are under a lot of stress, so it's pretty much a two-way street ? I'm there for you, you're there for me."

> "Personally for us, there was a fairly stable relationship and environment and network of friends. We have no family, in the sense of blood in the area, but lots of great friends, so that was an opportunity to make a go of it."

A particularly powerful statement came from a man in Port Hardy, who had lost a leg accidentally thirteen years before. Stress and pain related to his physical disability had resulted in serious emotional problems and the need to rely on his wife for support.

> "My wife I rely on lots, I don't like to burden people with too much of it. And even my wife, I don't like to cry on her shoulder too much, but she knows me well enough, she knows when I am having a bad day, where most people don't really know. I don't get cranky very often, I get cranky at inanimate things more often than people and people that I get cranky at, I want to kill them, and so I sort of try and stay away from that. Because I can't get annoyed, I get mean; I get mad, so it's better to stay away from that whole route there.

Support from neighbours

Many people stated that their very good friends were also their neighbours.

> "Good friends, good neighbours. Like the time when I got one of those notices that your hydro is going to get cut off or whatever, I've got a friend next door, and he said, 'don't worry about it, pay me back when you can', and half the time he just writes it off, he just says forget it, Merry Christmas or whatever. But you know very good neighbours and friends like that, so I don't worry that I am going to starve or that, you know, I have friends that will bring me food, invite me out for dinner, that is one thing that is not stressful, I don't worry about starving."

> "I've got good neighbours across the street, anytime I feel down, I go talk to them. The only trouble is he gets drunk and I don't, I quit drinking, three years now so that gets frustrating at times too."

Involvement in social programs, clubs, and volunteering

Many people reported finding support through joining clubs, involvement in volunteer community activities, and church life.

> "I guess by being involved in the community, by doing the pancake breakfast, being involved in that on Saturday. My husband decided that we had to do something and so we did it, and our church supported us and so we are doing it.

> In the past I have been on the hospital board and done the hospital auxiliary thing. I used to coach basketball and volleyball. I did volleyball this fall until I got sick. You just do stuff. I read and like to fish. I love fishing, I love the outdoors. I have my grandchildren that amuse me. They are funny."
>
> "I've got the Chicks Club and opportunities to go out and have an evening with my husband which is nice. Being able to do things."
>
> "You get involved at different levels, wherever you can make a difference try to help."

These types of community engagement were especially important for those without family in the local area to whom they could turn for support.

> "I don't have much family out here, mostly through my support groups, there's a clique of us, right. And then there are always the therapist if I get really…I am just learning how to deal with this and teaching other people how to deal with it, but then there is a drug and alcohol counsellors in town and then the medical profession, I have back-up if I need it."

Lifestyle

Evidence from the survey analysis confirmed the importance of lifestyle factors as predictors of health and stress. This was reinforced in the interviews where healthy lifestyle choices - walking, running, sports, going to the gym - were frequently cited as strategies to cope with stress.

> "I try to relieve my stress by walking. I really find that if I walk I feel much happier, so I try to walk and stay positive."
>
> "My cell phone, pagers, and radios off and take time off. When I am stressed out, I go for a hike, there is a spot on the beach where I go. I leave everything at home and go sit there for two, three hours and look at the ocean. Doesn't matter if it's pouring down rain or what."
>
> "We both play video games at night after the kids go to bed, because it's just mindless, and you can let go, and we try not to get too excited about the housework."

> "I ran a leg in the Marathon last year, I'm training on a women's team for the Marathon this year, just having the opportunity to do things that are important to me that help to define who I am as well."

> "I have to be myself or go and run or whatever. The gym is open nightly for drop-in volleyball, drop-in basketball, drop-in badminton, and there are other things that are going on for people."

> "Take my mind off it, try to think of something else. I play darts, I play two different dart leagues. A lot of my friends are in that so, it kind of takes your mind off of it temporarily. For a couple of hours you are doing something else."

Keeping oneself busy and other things

In terms of more general lifestyle and attitudinal factors as coping strategies, the value of keeping active and busy was frequently mentioned, as was having someone to talk to, and maintaining a positive and optimistic outlook on life.

> "I can honestly say that I've been pretty lucky because I have been busy all the time. You set your goals a lot lower. Because I am a backyard monkey wrench type of guy and haywire, people always come to me, I'm busy all the time, I just don't make any money. I make lots of noise. I keep busy even though I don't make any money at it."

> "Well I think that most problems can be overcome just as long as you have someone who will listen to you, say you just go over and you shoot the breeze and it comes out, I guess that is kind of venting in a way. I don't see life as, all the stress is self-induced, so if you want to be stressed out, you look for it, if you want to just look at it from arms length, it is not a big deal, like you are not going to get out alive right so there is no reason to get uptight."

Lack of support

Coping strategies are not always available or sufficient and several expressed their vulnerability as a result. Family members and/or friends cannot always be relied upon especially if they are struggling with serious stressors themselves.

> [For stress], "I just stored it up. I probably complained at home, maybe I was miserable at home. As far as using positive coping skills to deal with it and deal

> with it in a proactive way, no. My wife would like to help, but her health has really gone downhill. She was diagnosed with fibromyalgia in about 1995 and she can't work and she is low on energy and what not, and so just maintaining. [To talk about close friends], they just not inclined. They look at me and say they don't want anything to do with anything like that, you know who needs it. You know I agree, if I could step out of my shoes, I would."
>
> "I hadn't spoken to my brother and a couple of sisters for four years. For four years we hadn't been on speaking terms, just going through crisis and stress, with nobody to rely on except him [her husband] and I and one of his sisters and one of my sisters, that's about all we have."
>
> "I have a couple of friends that help me out. But they are struggling themselves. They may be working fulltime, but they have families, they have their rents and mortgages and their food to do too, so they can't be going out and do two families, it is hard enough making one."

5.3.5 Linkages among Emerging Themes

From what has been presented thus far it is clear that socio-economic restructuring has had significant, though varied and variable, impacts on the everyday lives of residents in each of the four study communities. In this section, a synthetic analysis is presented to provide an overall synopsis of the links between the major themes and sub-themes related to restructuring and health at the individual and community level (Figure 5.1).

The first major theme is economic restructuring, which includes resource industry decline and tourism expansion, resulting in employment stress in all four communities and economic downturn in all communities, except Tofino. The second theme, which is social restructuring, includes policy changes in BC and these changes have resulted in a lower level of social services and a fragmented sense of community.

Figure 5.1: Relationships between Socio-economic Restructuring and Health

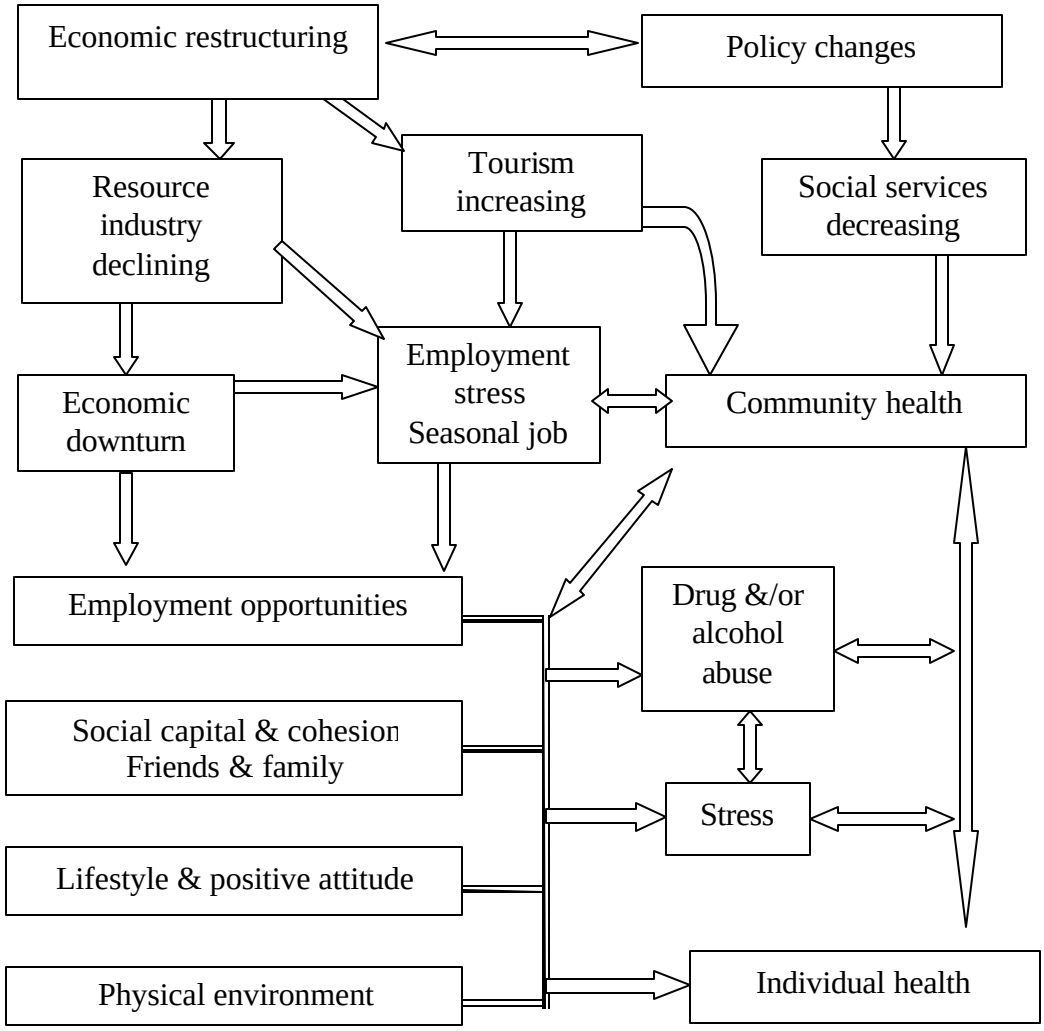


Figure 5.1: A general picture of the relationships between socio-economic restructuring and health is generated from the interview data. Arrows indicate the relationships among the themes and sub-themes. For example, economic restructuring includes resource industry declining and tourism expanding, both leading to employment stress and economic downturn.

Third, both health and stress were seen to have individual and community dimensions. In terms of community health, economic decline and employment stress were primary factors, but social problems, such as drug and alcohol abuse, were also cited as major concerns. Respondents regarded individual health and stress as directly linked to economic and employment stress, winter weather, housing problems and family

problems. Lifestyle, social and physical environment also contributed to individual health status and stress levels. Individual and community health emerged as being interdependent, in that the community provided an economic, social and physical setting which both shaped and was shaped by the lives and lifestyles of the residents themselves.

For communities and individuals, the best coping strategy lay in the availability of employment opportunities. Effective coping strategies at the individual level varied, with the most common being reliance on family members, friends and neighbours, participation in healthy lifestyles, and accessing social capital and social cohesion through involvement in volunteer community activities.

5.4 Discussion

The interview data confirm that economic restructuring has impacted the health of individuals and their communities. When viewing the interview text as a whole, one of the most significant aspects of economic restructuring is the decline in local employment which has resulted in stress and ill health for some residents.

The ability of a community to cope with ongoing changes in society can be greatly affected by the capacity of its residents to work together towards the accomplishment of projects and other actions. This collaborative capacity is referred to as the coherence of a community, more generally, as a sense of community. A cohesive community is more likely to be a resilient community (Russell and Harris 2001) and a healthy one. Whether a community can develop alternative economic activities that are strong enough to withstand the new economic challenge of a global economy is of importance. To a large degree, alternative economic activities are the key factors making resilient or vulnerable individuals and communities. Tofino's experience suggests that a

diversified economy lessens the impact of the decline of resource-based industry on personal and community health. In short, economic restructuring results in mounting employment stress which, in the absence of alternative economic strategies, can produce social and health problems for both the residents and their communities.

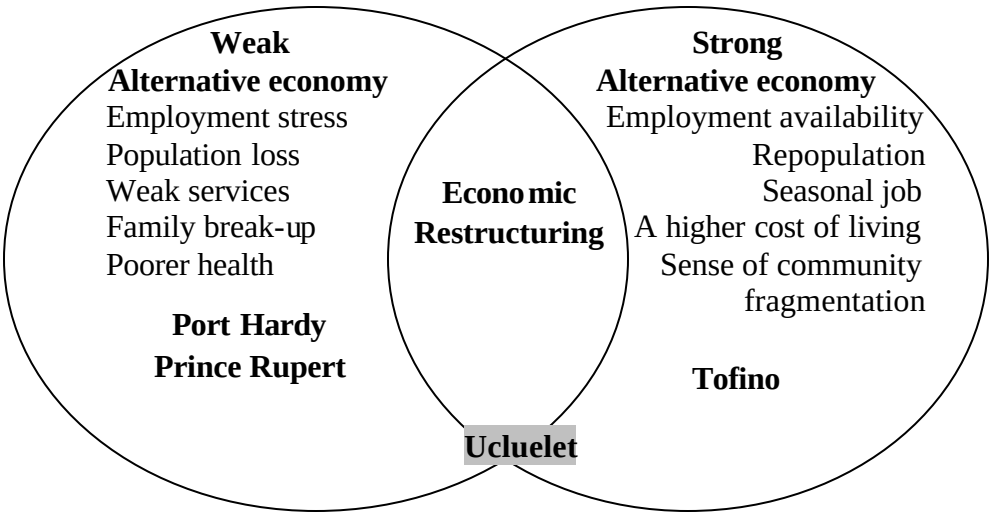
The development of an alternative economy is the most important factor in sustaining a community and its residents. At the community level, alternative economic activities provide employment opportunities, and serve to keep and attract residents to the community. At the individual level, an alternative economy means that another income source can bring money to a household, either by the same person from a different job or by another family member. In the absence of alternative employment opportunities and sources of income, a community and its residents are vulnerable to the process of socio-economic restructuring.

Social and economic factors are seen as fundamental determinants of health which operate through proximal factors such as the ability to purchase health services on account of the availability of and access to resources (Link and Phelan 1995). Economic decline results in job losses, and individuals experience changes in their personal circumstances, depending on access to social support, family support and coping ability (Dooley and Catalano 1980). The most useful coping strategy for the study communities is job security, and the message "we need jobs" is loud and clear. Whether communities can provide employment opportunities to their residents depends on the availability of an alternative economy. Social and physical environments of communities are important factors for generating an alternative economy. The survey results presented in the previous chapter provided evidence of the mediating effects of social capital, social

cohesion, lifestyle and socio-demographic factors on the relationship between restructuring and health. Taken together with the findings from the interviews, it is clear that the factors vary in their interactions and effects depending on the particular circumstances and characteristics of each local community.

In this regard the case of Tofino is instructive. In the wake of the decline of the traditional fishing industry, rapid growth in the tourism industry, taking advantage of the scenic attractiveness of the area, has brought renewed prosperity. The transition was not painless, however, and participants in Tofino reported negative factors impacting community health, such as a local sense of community fragmentation, seasonal and low-paying tourism-related jobs, a higher cost of living, and water restrictions due to excess demand during the summer when the tourist season is at its height. Nevertheless, individual levels of health and stress are very different compared with the other three communities. In Tofino, none of the participants reported knowing individuals whose health had been negatively affected by the economic restructuring and most rated their health as very good. Tofino and its residents have therefore benefited from tourism, which, as an alternative economic activity, has been strong enough to offset the community's loss of resource-based industry. By contrast, Port Hardy and Prince Rupert, and to a lesser extent Ucluelet, suffer from a lack of job opportunities.

Figure 5.2: Restructuring, Alternative Economic Opportunity and Health



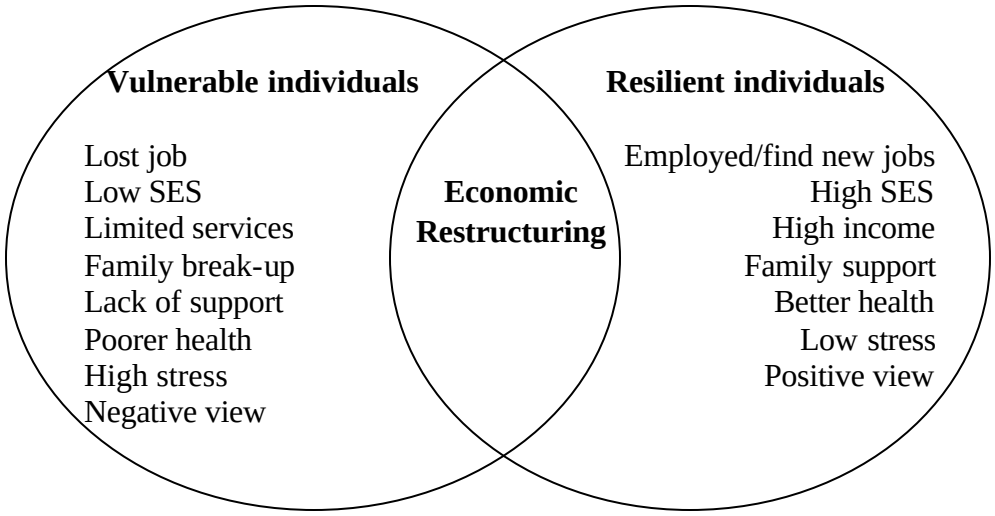
Schematically, Figure 5.2 illustrates how the presence of alternative economic activities can counter the decline of the economy and yield different outcomes in response to economic and industrial restructuring. The development of a strong alternative economy has led to generally positive outcomes in Tofino. The resident population has doubled and the population structure has changed substantially in the last two decades. In addition, community life is profoundly influenced by the influx of large numbers of tourists from across Canada, and from around the world. The employment structure has changed from being resource-based, primarily the fishery, to being service-based to meet the demands of the tourist industry.

Due to a lack of alternative economic activities, the other three communities are vulnerable to economic change, and they have faced greater problems, including employment stress, weakened community services, out-migration, family break-ups, and poor health. Ucluelet has experienced less negative impacts than Port Hardy and Prince Rupert in terms of population decline and health status. This is in part due to its

proximity to Tofino, since some Ucluelet residents can find jobs in Tofino's fish farms and tourist companies. Port Hardy and Prince Rupert are very vulnerable to the adverse impacts of restructuring and to failure in coping with ongoing change and this is reflected in their poor economic performance and major out-migration.

Restructuring creates new opportunities for some and curtails them for others. What factors therefore make particular individuals resilient or vulnerable? Figure 5.3 identifies job security as the key factor and engine for community growth and residents' quality of life and health. The ability to seek employment at the individual level and the ability to generate jobs for residents at the community level are the major factors affecting the resilience or vulnerability of communities and individuals.

Figure 5.3: Restructuring, Vulnerable and Resilient Individuals



The survey results suggest that health status is lower and stress level higher for some sub-groups, such as the Prince Rupert residents, women, the unemployed, those with low income, and individuals with low levels of social capital and social cohesion.

The interview results confirm that those with lower SES are especially vulnerable to health and stress problems. For this sub-group, socio-economic restructuring has resulted in increased employment stress and decreased social services. As a result, their vulnerability is compounded by outcomes frequently associated with job loss—income insecurity, health problems, family break-up, and inadequate access to social, support, and reemployment training services. This combination of factors can produce a vicious cycle leading to chronic unemployment and a negative outlook on the prospects for themselves and their community.

5.5 Conclusion

Complementary to the survey analysis reported in Chapter 4, this qualitative investigation has provided a powerful tool for a more in depth exploration of the relationships between socio-economic restructuring and the health of individuals and their communities. The findings of this study indicate the following. First, socio-economic restructuring has impacted all four communities over the last two decades, especially in the last ten years, due to a decline in resource-based industries. Second, restructuring processes and events have had an impact on the health of the coastal communities and their residents. Employment opportunities are central to the vitality of communities and the quality of life of their residents and thereby are key factors that make an individual and community resilient or vulnerable. Third, several factors condition the extent to which a community is resilient in response to the challenges posed by restructuring. Principal among these is the capacity to generate new job opportunities through the development of an alternative economy. To a considerable extent, such has been the case in Tofino where the combination of the physical environment, geographical

access, local business acumen and community support have fostered the growth of a booming tourism industry, even though this rapid growth and associated changes have brought their own challenges with which the community continues to wrestle.

By comparison and contrast, communities lacking these positive predisposing factors typically struggle in times of restructuring and economic decline. Such is the case in Port Hardy and Prince Rupert where both communities are struggling with the shrinkage and closure of their traditional resource-based industries, and, in the absence of alternative sources of employment, have experienced population decline and deterioration in the health of the community and the residents that remain. Compared to the other three communities, Ucluelet has been less resilient than Tofino and less vulnerable than Port Hardy and Prince Rupert. Problems persist due to the forest industry decline, but many residents can find seasonal jobs in Tofino, and some residents have tried to open tourism related businesses.

Factors that make an individual resilient or vulnerable are strongly related to community health and individual health, and the two are interrelated. Community health is related to the strength of the local economy and availability of job opportunities, while individual health is related to individual SES and the level of family and social support. Resilient individuals are those that are employed, with high income and better health status, and low stress. Vulnerable individuals are those that are unemployed, with low income, family break ups, ill health and higher stress, and a lack of family and social support.

CHAPTER 6. CONCLUSIONS

6.1 Introduction

Socio-economic restructuring is a manifestation of today's trend towards globalization. During the process of restructuring, traditional industries have declined and new opportunities have sometimes, but not always, presented themselves. The resultant uneven distribution of wealth has enlarged the gap between the rich and the poor, impacting health outcomes. As a part of the CUS project, this research has examined the relationships between socio-economic restructuring and the health of individuals and their communities on Canada's west coast. Port Hardy, Prince Rupert, Tofino and Ucluelet were selected as case studies.

The four communities have traditionally depended on a staple economy. Over the past two decades, changes in the resource-based economic structure have resulted in social and demographic changes. Primary industries have declined, while the service sector has expanded. Consequently, family income levels have decreased. Populations grew in all four communities until 1981, but only continued to grow in Tofino thereafter. The other three communities have all experienced their greatest population losses since the early 1980s. All four communities have experienced an overall decline in the provision of social services. With the exception of Tofino, they are all vulnerable to various changes, including lack of a diversified and sustainable economy, lack of flexibility, falling investment, job losses, higher levels of unemployment, lower incomes, increased transportation costs, and uncertainty in trade and markets.

6.2 Health in the Communities? A Synopsis

Socio-economic restructuring has had a significant impact on the four study communities. The CUS community health survey and in-depth interviews examined the following four questions:

1. Do the self-*reported* health status and stress level of community residents differ from *expected* levels based on provincial and national statistics?
2. Do the health status and stress levels of residents and the perceptions of community health differ among the selected communities?
3. What factors affect residents' health status and stress levels?
4. Are differences in health status and perceptions of community health attributable to restructuring processes and events?

Evidence of socio-economic restructuring impacts on the health of individuals and their communities is as follows. First, the communities lag behind the province of BC and Canada as a whole in terms of health status. The health ratings in the four communities are also poorer in comparison to those of rural residents in BC or in Canada. Second, evidence from the survey analysis shows that health status differs significantly among the communities as do recent changes in health status and stress level. Third, the survey analysis provides evidence to support the mediating effects of social capital, social cohesion, socio-demographic and lifestyle factors in the relationship between restructuring and health of the residents of BC coastal communities. Specifically, a healthier lifestyle and higher SES, along with a higher level of community satisfaction, contribute to a better health status, better emotional health, and a lower stress level. After accounting for the effects of all other variables, community itself is also a predictor for

emotional health. Combining the results from the in-depth interviews and the survey, the fourth finding is that differences in health status are plausibly attributable to restructuring processes and major events in each community. In-depth interview data made clear the linkage between economic downturn and poorer health. In addition to the decline of fishery and forestry industries in all four communities, more serious incidents occurred in Prince Rupert and Port Hardy, for instance, the closure of the mine in Port Hardy, and the shut down of the Skeena Cellulose mill and the decline of the port in Prince Rupert. These restructuring events account for large population losses and have contributed to the poorer health status reported in both Port Hardy and Prince Rupert.

Furthermore, the interview and survey analyses suggested factors that may affect the vulnerability or resilience of individuals and communities. The development of alternative economic activities, especially in Tofino, during the decline of a resource economy provided residents with employment opportunities to lessen the impact of restructuring on personal health and community health. Conversely, the lack of an alternative economic activity, for example in Port Hardy and Prince Rupert, amplified the employment stress brought about by economic restructuring, resulting in social problems and poor health for both residents and their communities. Employment opportunities, then, are central to the vitality of communities and the quality of life of their residents, and are key factors related to individual and community resilience or vulnerability. There is a reciprocal relationship here, in that resilient individuals who made successful employment shifts are more often those people with high SES and family and social support; vulnerable individuals who failed to obtain new jobs are those with lower SES and a lack of necessary family and social support.

6.3 Contributions

To examine the relationship between restructuring and health in BC coastal communities, this dissertation was guided by a conceptual model of restructuring and health (Figure 3.2), and provided evidence to support a number of arguments. First, restructuring has had impacts on the health of residents and their communities on the BC coast. Second, social capital, social cohesion, socio-demographic and lifestyle factors have mediating effects on the relationship between restructuring and health. Furthermore, these mediating factors affect individual and community level resilience to the impacts of restructuring.

As discussed in Chapter 3, this study is a part of the CUS project. From a population health perspective, the conceptual model of restructuring and health is nested within the broader CUS framework. Therefore, this study contributes to the overall social ecological framework of the CUS project by providing evidence that: restructuring has impacts on health; and social capital, social cohesion, socio-demographic and lifestyle factors have mediating effects on the relationship between restructuring and health. As such, it adds to the growing population health and health geography literatures on the social determinants of health with specific application to advancing the understanding of the complex relationship between socio-economic change in coastal communities and the health and well-being of their residents. Strengths of the study design were the inclusion of four communities with different histories of restructuring, the ability to control other known lifestyle and socio-economic determinants of health, and the assessment of different self-reported health and stress outcomes. As a result, the findings provide robust

and consistent evidence of effects within the inherent limits imposed by a cross-sectional study. The following points are worth noting in particular.

Communities cannot avoid or escape broad-level transitions and restructuring processes in the context of provincial, national and global economic change, but significant differences exist between communities. Some communities thrive on these changes, some are at risk of long-term decline, and still others are resilient to the process of restructuring. The findings emphasize the importance of geographical factors on the outcomes of restructuring on communities. Historically, environmental settings in BC coastal communities enabled the development of a traditional resource-based export economy. In the last two decades, the community of Tofino has shifted from being formerly a fishing village to a major tourist destination famous for its beautiful natural setting, beaches and outdoor recreation. Port Hardy and Prince Rupert are further away from the metropolitan heartland of Greater Vancouver and have fewer opportunities for generating a new economy. Therefore, they are more vulnerable to economic change, have faced employment stresses and population losses. Ucluelet has experienced less impact than Port Hardy and Prince Rupert in terms of population decline and health status, and this is perhaps due to its proximity (40 km apart) to Tofino, since some Ucluelet residents can find jobs in Tofino's fish farms and tourism industry. In addition to the physical settings, the social environment is a major factor that determines the impact of restructuring on community health and individual health. In this regard, the findings of this research add to the growing evidence in the population health literature on the role of social capital and social cohesion.

From a methodological perspective, this thesis builds on the growing use of *mixed methods* in health research, through its application of a multi-method approach consisting of a parallel community case study design, quantitative survey study and qualitative interview study. The case study method is commonly used in geographic research but is rarely applied in population health studies. In this case, contextual analysis (Chapter 2) provides evidence of how the traditional resource-dependent communities in the BC coastal region have encountered greater difficulty than the province as a whole since the 1980s. While the BC economy experienced positive growth each year in the 1984-99 period, the study communities lagged significantly behind the province as a whole. The research design and methodology demonstrated the complementarity of quantitative and qualitative approaches for health related research. The quantitative study provided evidence on the levels and determinants of self-rated health status and stress in the four communities but as a cross-sectional analysis could not support causal inference about the relationship between restructuring and health. In this regard, the qualitative study complemented the quantitative study by eliciting residents' motivations, feelings, and experiences, thereby supporting explanations of the patterns observed in the survey analysis. It also serves to initiate new lines of thinking for generating fresh insight about what makes individuals and communities vulnerable or resilient to the impacts of restructuring.

From an applications perspective, and as a bridge between research and policy, the findings provide practical input to inform the government, social agencies, and the study communities themselves about restructuring impacts on individual health and community health, and, more specifically, to identify factors that make individuals and

communities more or less resilient. Although policy issues are not raised as a major topic in the previous chapters, restructuring and health are situated in a broader context whereby government policy affects economic growth and thereby the well-being of both individuals and their communities. For example, the Mifflin Plan seriously affected the fishing industry in the coastal communities, and provincial service cut-backs affected individuals' ability to get income assistance (Chapter 5). With reference to coping strategies for fostering a healthy community, there was strong and consistent demand for policies and programs aimed at job creation and social support services with all levels of government seen as having related roles to play.

The findings of the study can therefore provide the basis for recommendations on how to foster resilience in communities and how to address the needs of the low SES group and other groups that are especially vulnerable to the negative impacts of restructuring on their health and well-being.

6.4 Directions for Future Research

This study represents a modest beginning. Much more needs to be learned about the impacts of restructuring on population health in the context of our rapidly changing society. The study provides a basis for understanding socio-economic restructuring in BC coastal communities and the consequences of restructuring impacts on the health of individuals and their communities. Several relevant issues need to be addressed in future research. First, a more explicit focus on stress is needed. While almost all the respondents of the four communities reported stress, some were far more stressed than others, but the ratings of overall stress appear quite positive when compared with the provincial and national data. The lower stress levels for the study communities may be due to a rural

lifestyle and the fact that the survey was conducted in a summer season. The warm and sunny summer season may have contributed to the respondents reporting a low stress level. During the cold and rainy winter season when the follow-up interviews were conducted, the stressful feelings of the communities and their residents were much higher. Further investigation is also needed to examine the apparent paradox of the lower stress on the one hand, but poorer health outcomes on the other hand in the study communities.

Another direction for future research would be to examine gender issues in more depth. What is the role played by women in coping with restructuring processes? Similar to the CCHS data, women from the four west coastal communities reported more stress than men, but the difference was not statistically significant. This result is in contrast to the findings from the east coastal communities in the CUS survey where a serious impact on women in the fishery industry was reported. So, why is the gender effect not statistically significant on the west coast? A more in-depth study needs to be conducted to better understand the gender issue.

Third, as a cross-sectional study, this research has limitations for examining the relationship between restructuring and health, which intrinsically requires a longitudinal perspective. The inclusion of four communities with different restructuring histories provides a stronger cross-sectional design than a single community case study. However, future research would be considerably strengthened by using a longitudinal study design. One approach would be to employ a repeated survey design, with this study serving as a baseline, to track health status changes in relation to intervening restructuring events. Moreover, it is important in any future study to give careful consideration to the

conceptualization and measurement of restructuring processes and events in selected communities both to strengthen the theoretical grounding of the analysis and to increase the inferential power of the research in attributing community and individual health impacts to restructuring. A future study should also be augmented by analyses of temporal trends in health statistics for both mortality and morbidity rates.

REFERENCES

Adler, N. E., T. Boyce, et al. (1994). "Socioeconomic status and health: The challenge of the gradient." American Psychologist **49**(1): 15-24.

Adler, N. E. and K. Newman (2002). "Socioeconomic disparities in health: Pathways and policies." Health Affairs **21**(2): 60-76.

Adler, P. and P. Adler (1998). Observational Techniques. Collecting & Interpreting Qualitative Materials. Y. Lincoln. Thousand Oaks, Sage**:** 79-106.

Altman, I. and S. M. Low, Eds. (1992). Place Attachment. Human Behavior and Environment: Advances in Theory and Research. New York, Plenum Press.

Aneshensel, C. S. (1992). "Social stress: theory and research." Annual Review of Sociology **18:** 15-38.

Baglole, J. (2004). BC coastal towns losing access to fishing. Vancouver Sun. Vancouver BC, Nov. 15.

Baldwin, R. E. (1956). "Patterns of development in newly settled regions." Manchester School of Economic and Social Studies **24**: 161-179.

Barman, J. (1996). The West Beyond the West: A History of British Columbia. Toronto, University of Toronto Press.

Barnes, T. J., R. Hayter, et al. (1999). ""Too young to retire, too bloody old to work": Forest industry restructuring and community response in Port Alberni, British Columbia." The Forestry Chronicle **75**(5): 781-787.

Barnes, T. J., R. Hayter, et al. (2001). "Storm weather: Cyclones, Harold Innis, and Port Alberni, BC." Environment and Planning A **33:** 2127-47.

BC Progress Board (2002). BC Progress Board 2001 Report. Vancouver, BC, 128.

BC Progress Board (2003). Measuring BC's Performance - Reaching North Star 2010**:** 76.

BC Progress Board (2003). Toward British Columbia North Star 2010: Interim Benchmarking Report. Vancouver, BC**:** 39.

BC Stats (2002). British Columbia Regional Socio-Economic Indicators: Methodology. Victoria, Ministry of Management Services.

Bell, C. and H. Newby (1971). Community Studies: An Introduction to the Sociology of the Local Community. New York, Praeger Publishers.

Brown, B. and D. Perkins (1992). Disruptions in place attachment. Place Attachment. S. A. Low. New York, Plenum Press.

Carbonaro, W. J. (1998). "A little help from my friends' parents. Intergenerational closure and educational outcomes." Sociology of Education **7**: 295-313.

Catch-22 research team (2004). Catch-22: Conservation, Communities and the Privatization of B.C. Fisheries. Vancouver, BC, and Portland, OR, Ecotrust Canada and Ecotrust.

Cattell, V. (2001). "Poor people, poor places, and poor health: the mediating role of social networks and social capital." Social Science & Medicine **52**: 1501-1516.

CBC News (2002). Fish plant destroyed by fire. CBC, WebPosted Dec 19, 2002, 09:28 AM PST.

Census Canada Population (1976, 1981, 1986, 1991, 1996). Ottawa: Statistics Canada, Statistics Canada.

Coastal Community Network (2002a). 'The State of BC's Coastal Communities EXECUTIVE SUMMARY."

Coastal Community Network (2002b). 10-year report card on BC's rural coast shows unprecedented population loss and economic Depression.

Coastal Community Network (2002b). "The State of BC's Coastal Communities EXECUTIVE SUMMARY."

Coffey, A. (1996). Making Sense of Qualitative Data: Complimentary Research Strategies. Thousand Oaks, California, Sage.

Cohen, S., L. Underwood, et al., Eds. (2000). Social Support Measurement and Intervention: A Guide for Health and Social Scientists. Oxford, Oxford University Press.

Common Ground (2003). Clayoquot was defining protest of our time, biosphere reserve status gives no protection.

Creswell, J. (1994). Research Design: Qualitative and Quantitative Approaches. Thousand Oaks, Sage Publications.

Creswell, J. W. (2003). Research Design: Qualitative, Quantitative, and Mixed Method Approaches. Thousand Oaks, California, Sage.

Creswell, J. W. (2004). Mixed methods designs: Lengthening (in) the path of qualitative research. The Fifth International Interdisciplinary Conference: Advanced in Qualitative Methods, Edmonton, Alberta.

Curtis, S., W. Gesler, et al. (2000). "Approaches to sampling and case selection in qualitative research: Examples in the geography of health." Social Science & Medicine **50**: 1001-1014.

CUS www.coastsunderstress.ca.

Davies, D., P. McElligott, et al. (2003). Embracing a new version: Rebuilding BC's coastal forest industry. Vancouver, The Vancouver Economic Development Commission**:** 20.

Deeg, D. J. H. and P. A. Bath (2003). "Self-rated health, gender and mortality in older persons: Introduction to a special section." The Gerontologist **43**(3): 369-71.

District of Port Hardy (1999). The Port Hardy Official Community Plan.

District of Port Hardy (2002). "Strategic Plan."

District of Port Hardy (2003). Winter Newsletter.

District of Tofino (2002). Vision Tofino: The Official Community Plan.

District of Ucluelet (2001). District of Ucluelet undergoes significant cost-cutting and downsizing. May 17, 2001.

Dolan, H., M. Taylor, et al. (2005). "Restructuring and Health in Canadian Coastal Communities." EcoHealth(2): 1-14.

Doll, R. and R. Peto (1981). The Causes of Cancer: Quantitative Estimates of Avoidable risks of Cancer. Oxford, Oxford University Press.

Dooley, D. and R. Catalano (1980). "Economic changes as a cause of behavioral disorder." Psychological Bulletin **87**(450-468).

Draut, T. (2002). New Opportunities? Public Opinion on Poverty, Income Inequality and Public Policy: 1996 - 2001. A Background Paper, Demos: A Network for Ideas and Action.

Elliott, M. (2000). "The stress process in neighborhood context." Health & Place **6**: 287-99.

Elliott, S. J. and J. Baxter (1994). An integration of quantitative and qualitative approaches in health-related research. The Determinants of Population Health: A Critical Examination. H. Foster. Victoria, BC, Western Geographical Series. **29:** 135-156.

Elstad, J. (1998). "The psycho-social perspective on social inequalities in health." Social of Health & Illness **20**(5): 598-618.

Eriksson, I., A.-L. Unden, et al. (2001). "Self-rated health. Comparisons between three different measures. Results from a population study." International Journal of Epidemiology **30**: 326-333.

Evans, R. and M. Barer, Eds. (1994). Why are Some People Healthy and Others Not? The Determinants of Health of Populations. New York, Aldine De Gruyter.

Federal Provincial and Territorial Ministers of Health (1999). Towards a Healthy Future: Second Report on the Health of Canadians. Ottawa, Health Canada.

Folkman, S. and R. S. Lazarus (1988). "Coping as a mediator of emotion." J of Personality and Social Psychology **54**(3): 466-75.

Fontana, A. and J. Frey (1998). Interviewing: The Art of Science. Collecting & Interpreting Qualitative Materials. Y. Lincoln. Thousand Oaks, CA, Sage**:** 47-78.

Forrest, R. and A. Kearns (2001). "Social cohesion, social capital and the neighbourhood." Urban Studies **38**(12): 2125-43.

Frankish, C., et al (1996). Health impact assessment as a tool for population health promotion and public policy. Vancouver, Institute of Health Promotion Research, UBC.

Frumkin, H., L. Frank, et al. (2004). Urban Sprawl and Public Health: Designing, Planning, and Building for Healthy Communities. Washington, Island Press.

Geuna, A. and F. Brunelli (1996). "Stressors, stress and stress consequences during long-duration manned space missions: A descriptive model." Acta Astronautica **36**(6): 347-56.

Glaeser, E. L. (2001). "The formation of social capital." ISUMA **2**(1): 34-40.

Glavin, T. (2000). The Last Great Sea: A Voyage through the Human and Natural History of the North Pacific Ocean. Vancouver, Douglas & McIntyre Publishing Group.

Godsland, I. F., F. Leyva, et al. (1998). "Associations of smoking, alcohol and physical activity with risk factors for coronary heart disease and diabetes in the first follow-up cohort of the Heart Disease and Diabetes Risk Indicators in a Screened Cohort study (HDDRISC-1)." Journal of Internal Medicine **244**(1): 33-41.

Grabb, E. G. (1993). General Introduction. Social Inequality in Canada: Patterns, Problems, Policies. N. Guppy. Scarborough, Ontario, Prentice Hal Canada Inc.

Graziano, A. and M. Raulin (1996). Research Methods: A Process of Inquiry. New York, Longman.

Greene, J. C., V. J. Caracelli, et al. (1989). "Toward a conceptual framework for mixed-method evaluation designs." Educational Evaluation and Policy Analysis **11**(3): 255-274.

Greenhalgh, T. and R. Taylor (1997). "How to read a paper: Papers that go beyond numbers (qualitative research)." BMJ **315**: 740-743.

Grootaert, C. (1998). Social capital: the missing link? The World Bank, Social Development, Family Environmentally and Socially Sustainable Development Network.

Hallin, L. and contributing partners (2001). A Guide to the BC Economy and Labour Market, BC Stats.

Hancock, T. (2002). "Indicators of environmental health in the urban setting." Canadian Journal of Public Health **93**(Suppl I): S45-51.

Hancock, T., R. Labonte, et al. (1999). "Indicators that count! Measuring population health at the community level." Canadian Journal of Public Health **90**(S1): S22-S26.

Hayes, M. and J. Dunn (1998). Population Health in Canada: A Systematic Review. Ottawa, Renouf Publishing.

Hayes, M., L. Foster, et al., Eds. (1992). Community, Environment and Health: Geographic Perspectives. Western Geographical Series. Victoria, University of Victoria.

Hayter, R. (2000). Flexible Crossroads: The Restructuring of British Columbia's Forest Economy. Vancouver, UBC Press.

Health and Welfare Canada (1986). Achieving Health for All. Ottawa, DNHW.

Hertzman, C. (2000). "Health and rapid economic change in the late twentieth century." Social Science & Medicine **51**(6): 809-819.

Heth, T. J. and E. Somer (2002). "Characterizing stress tolerance: "Controllability awareness" and its relationship to perceived stress and reported health." Personality and Individual Differences **33**: 883-95.

Innis, H. A. (1930). The Fur Trade in Canada: An Introduction to Canadian Economic History. Toronto, University of Toronto Press.

Jacobson, D. E. (1986). "Types and timing of social support." J of Health and Social Behavior **27**: 250-264.

Jones, S. (1985). Depth Interview. Applied Qualitative Research. R. Walker. Aldershot UK, Gower**:** 45-55.

Joseph, A. and D. Knight (1999). Social Sciences and Public Policy in Restructuring Societies. Restructuring Societies: Insight from the Social Sciences. D. Knight, Carleton University Press**:** 1-24.

Kasl, S. and S. Cobb (1982). Variability of stress affects among experiencing job loss. Handbook of Stress. S. Breznitz. New York, Free Press.

Kawachi, I. and B. Kennedy (1999). "Social capital and self-rated health: A contextual analysis." Am J Public Health **89**(8): 1187-1193.

Kawachi, I., B. Kennedy, et al. (1997). "Social capital, income inequality, and mortality." Am J Public Health **87**: 1491-8.

Kawachi, I., B. Kennedy, et al., Eds. (1999). The Society and Population Health Reader: Income Inequality and Health. New York, The New Press.

Kearns, R. and A. Joseph (1997). "Restructuring health and rural communities in New Zealand." Progress in Human Geography **21**(1): 18-32.

Kessler, R. C., J. B. Turner, et al. (1988). "Effects of unemployment on health in a community survey: Main, modifying, and mediating effects." Journal of Social Issues **44**: 69-85.

Kirby, M. J. L. and M. LeBreton (2001). The Health of Canadians - The Federal Role. Volume One - The Story So Far, The Standing Senate Committee on Social Affairs, Science and Technology Interim Report on the state of health care system in Canada**:** 1-130.

Kitzinger, J. (1995). "Qualitative research: Introducing focus groups." BMJ **311**: 299-302.

Lalonde, M. (1974). A New Perspective on the Health of Canadians: A Working Document. Ottawa, Government of Canada.

Lazarus, R. S. and S. Folkman (1984). Stress, Appraisal and Coping. New York, Springer Publishing Company.

Leach, B. and A. Winson (1999). Rural retreat: The social impact of restructuring in three Ontario communities. Restructuring Societies: Insight from the Social Sciences. A. Joseph, Carlton University Press**:** 83-104.

Li, P. S. (1996). The Making of Post-War Canada. Toronto, Oxford University Press.

Lindstrom, M., J. Merlo, et al. (2002). "Social capital and sense of insecurity in the neighbourhood: A population-based multilevel analysis in Malmo, Sweden." Social Science and Medicine **56**(5): 1111-1120.

Link, B. and J. Phelan (1995). "Social Conditions as Fundamental Causes of Disease." J of Health and Social Behavior(Extra issue): 80-94.

Link, B. and J. Phelan (1996). "Understanding socio-demographic differences in health: the role of fundamental social causes." Am J Public Health **86**(4): 471-2.

Lomas, J. (1998). "Social capital and health: implications for public health and epidemiology." Social Science and Medicine **47**(9): 1181-1188.

Lund, V. K. (1999). The healthy communities movement: Bridging the gap between urban planning and public health. Proceedings for 1999 National Planning Conference: Approaching The Millennium, Herberger Center for Design Excellence, Arizona State University, American Planning Association.

Magun, S. (1998). Restructuring in Canada Industries: A Micro Analysis. Ottawa, Micro-Economic Policy Analysis, Industry Canada.

Marmot, M. (2002). "The influence of income on health: Views of an epidemiologist." Health Affairs **21**(2): 31-46.

Marmot, M. and R. Wilkinson, Eds. (1999). Social Determinants of Health. Oxford, Oxford University Press.

Marr, W. L. and D. G. Paterson (1980). Canada: An Economic History. Toronto, Macmillan of Canada.

Masten, A., K. M. Best, et al. (1991). "Resiliency and development: Contributions from the study of children who overcome adversity." Development and Psychopathology **2**(425-444).

Masten, A. and J. D. Coatsworth (1998). "The development of competence in favorable and unfavorable environments: Lessons from research on successful children." American Psychologist **53**: 205-220.

McCann, L. (1999). "Seasons of labor: Family, work, and land in a nineteenth-century Vova Scotia shipbuilding community." History of the Family **4**(4): 485-528.

McClenaghan (2000). "Social capital: Exploring the theoretical foundations of community development education." British Educational Research Journal **26**(5): 565.

McDowell, I. and C. Newell (1996). Measuring Health: A Guide to Rating Scales and Questionnaires. New York, Oxford University Press.

McEwan, T. (2004). Measuring BC's Performance - Reaching North Star 2010. Vancouver, BC, BC Progress Board Benchmarking Report: Presented at the BC Federal Economic Roundtable.

McNeill, J. (2000). Something New Under the Sun: An Environmental History of the Twentieth-Century. New York, Norton.

Mechanic, D. (2002). "Disadvantage, inequality, and social policy." Health Affairs **21**(2): 48-59.

Mifflin, F. (1996). Pacific Salmon Revitalize Plan. Ottawa, Ministry of Fisheries and Oceans, Canada.

Miles, M. and A. Huberman (1994). Qualitative Data Analysis. Thousand Oak, Sage.

Moffat, R. (2001). Population History of Cities and Towns in Canada, Australia, and New Zealand: 1861-1996. London, Scarecrow Press.

Mohan, G. and J. Mohan (2002). "Placing social capital." Progress in Human Geography **26**(2): 191-210.

Muntaner, C., J. Lynch, et al. (2000). "Social capital and the third way in public health." Critical Public Health **10**(2): 107-24.

National Association of County and City Health Officials (2005). Mobilizing for Action through Planning and Partnerships.

Neuman, W. (1991). Social Research Methods: Qualitative and Quantitative Approaches. Boston, Allyn and Bacon.

Newman, I. (2000). A Conceptualization of Mixed Methods: A Need for Inductive/Deductive Approach to Conducting Research. Annual Meeting of the American Educational Research Association, New Orleans, LA.

Office of the Mayor (2001). Report on Findings: Mayor and Council's Social Issues. Prince Rupert.

Ommer, R., Ed. (2002). The Resilient Outport: Ecology, Economy and Society in Rural Newfoundland. St. John's, ISER.

Østbye, T., D. H. Taylor, et al. (2002). "The Role of Smoking and Other Modifiable Lifestyle Risk Factors in Maintaining and Restoring Lower Body Mobility in Middle-Aged and Older Americans: Results from the HRS and AHEAD." American Geriatrics Society **50**(4): 691-699.

Padgett, D. (1998). Qualitative Methods in Social Work Research: Challenges and Rewards. Thousand Oaks, Sage Publications.

Pearlin, L. I. (1989). "The sociological study of stress." J of Health and Social Behavior **30**: 241-56.

Pearlin, L. I., E. Managhan, et al. (1981). "The stress process." J of Health and Social Behavior **22**: 337-56.

Phillimore, P., A. Beattie, et al. (1994). "Widening inequality in health in North England, 1981/91." BMJ **308**: 1125-8.

Pincock, S. (2004). "BMA says smoking harms reproductive capability." Lancet **363**(9409): 628.

Prince Rupert Economic Development Commission (2001). Community Profile. Prince Rupert.

Putnam, R. (2000). Bowling Alone: The Collapse and Revival of American Community. New York, Simon & Schuster.

Putnam, R. (2001). "Social Capital: Measurement and Consequences." ISUMA (Canadian J. of Policy Research) **2**(1): 41-51.

Pyett, P. M. (2003). "Validity of qualitative research in the "real world"." Qualitative Health Research **13**(8): 1170-1179.

Randall, J. E. and R. G. Ironside (1996). "Communities on the edge: An economic geography of resource-dependent communities in Canada." The Canadian Geographer **40**(1): 17-35.

Rehm, J., M. M. Fichter, et al. (1993). "Effects on mortality of alcohol consumption, smoking, physical activity, and close personal relationships." Addiction **88**(101-112).

Reichardt, C. and T. Cook (1979). Beyond Qualitative versus Quantitative Methods. Qualitative and Quantitative Methods in Evaluation Research. C. Reichardt. Beverly Hills, Sage.

Revill, G. and S. Seymour (2001). Telling stories: Story telling as a textual strategy. Ethnography and Rural Research. S. Seymour. Cheltenham, Countryside and Community Press**:** 136-157.

Robert, S. A. (1999). "Socioeconomic position and health: The independent contribution of community socioeconomic context." Annu. Rev. Sociol. **25**: 489-516.

Robinson, L. (1998). British Columbia: Canada's Pacific Province. Heartland and Hinterland: A Regional Geography of Canada. A. Gunn. Scarborough, Ontario, Prentice Hall Canada Inc.

Rocco, T. S., L. A. Bliss, et al. (2003). "Taking the Next Step: Mixed Methods." Information Technology, Learning, and Performance Journal **21**(1): 19-29.

Rossman, G. and B. Wilson (1984). "Numbers and words: Combining quantitative and qualitative methods in a single large-scale evaluation study." Evaluation Review **9**(5): 627-34.

Russell, K. and C. Harris (2001). "Dimensions of community autonomy in timber towns in the Inland northwest." Social and Natural Resources **14**: 21-38.

Seeman, T. E. and E. Crimmins (2001). "Social environment effects on health and aging: integrating epidemiologic and demographic approaches and perspectives." Annals of the NY Academy of Sciences(954): 88-117.

Shaw-Taylor, Y. (1999). Measurement of Community Health: The Social Health Index. Lanham, University Press of America.

Shields, M. and S. Tremblay (2002). "The health of Canada's communities." Health Reports: 2002 Annual Report **13**(Supplement): 9-32.

Shortall, S. and J. Bryden (1997). Rural Restructuring: Causes, Consequences and Opportunities. Changing Rural Institutions. R. Rounds. Brandon, Manitoba, Canadian Rural Restructuring Foundation, Rural Development Institute**:** 239-248.

SSCSAST (1999). Standing Senate Committee on Social Affairs, Science and Technology, Final Report on Social Cohesion. Ottawa, Senate of Canada.

Statistics Canada (2001, 1996). Community Profile, 1996, 2001.

Statistics Canada (2003). Canada e-Book.

Stewart, T. A. (1997). Intellectual Capital. New York, Doubleday/Currency.

Strategic Policy Directorate (2001). The Population Health Template: Key Elements and Actions that Define a Population Health Approach. Ottawa, Population health and Public Health Branch, Health Canada**:** 1-46.

Sullivan, M. (1981). Threats to the Independence of the Elderly Poor: A Study of an Inner City Hotel, Victoria, BC. Geography. Victoria, University of Victoria.

Tarlov, A. and R. Peter, Eds. (2000). The Society and Population Health Reader. Volume II: A State and Community Perspective. New York, The New Press.

Tashakkori, A. and C. Teddlie (1998). Mixed Methodology: Combining Qualitative and Quantitative Approaches. Thousand Oaks, Sage Publications.

Taylor, S. (2001). Arm 5: Social and Political Restructuring and the Health of Individuals, Families and Communities. Coasts under Stress, West Coast Team meeting, Dunsmuir Lodge, UVIC.

Thoits, P. A. (1995). "Stress, coping and social support processes: Where are we? What next?" J of Health and Social Behavior **Extra issue**: 53-79.

Thompson, B. and S. Kinne (1990). Social Change Theory: Applications to Community Health. Health Promotion at the Community Level. N. Bracht. Newbury Park, Sage**:** 45-90.

Tremblay, S., N. A. Ross, et al. (2002). "Regional socioeconomic context and health." Health Reports: 2002 Annual Report **13**(Supplement): 33-44.

Truman, C., D. Mertens, et al., Eds. (2000). Research and Inequality. London, UCL Press.

Vaez, M. and L. Laflamme (2003). "Health behaviors, self-rated health, and quality of life: A study among first-year Swedish University students." Journal of American College Health **51**(4): 156-162.

van Kemenade, S. (2003a). Social Capital as a Health Determinant: How is it Defined?, Health Canada, Health Policy Research Working Paper Series,**:** 1-34.

van Kemenade, S. (2003b). Social Capital as a Health Determinant: How is it Measured?, Health Canada, Health Policy Research Working Paper Series,**:** 1-34.

Wainwright, D. (1997). "Can sociological research be qualitative, critical and valid?" Qualitative Report **32:** 2.

Walker, R. (1985). An Introduction to Applied Qualitative Research. Applied Qualitative Research. R. Walker. Hants, England, Gower.

Wallace, I. (2001). A Geography of the Canadian Economy. New York, Oxford University Press.

Watkins, M. H. (1993). A Staple Theory of Economic Growth. Canadian Economic History: Classic and Contemporary Approaches. H. M. Grant. Ottawa, Carleton University Press.

Wilkinson, R. (1996). Unhealthy Societies: The Afflictions of Inequality. London, Routledge.

Wilkinson, R. (1997). "Health inequalities: relative or absolute material standards?" BMJ **314**(22): 591-8.

Williams, D. and C. Collins (1995). "US socioeconomic and racial differences in health: Patterns and explanations." Annual Reviews Sociology **21**: 349-86.

Williams, S. J., J. Gabe, et al., Eds. (2000). Health, Medicine and Society: Key Theories, Future Agendas. London, Routledge.

World Health Organization (1986). "Ottawa Charter for Health Promotion, 1986."

Young, T. K. (1998). Population Health: Concepts and Methods. New York, Oxford, Oxford University Press.

APPENDICES

Appendix 1. University of Victoria Coasts under Stress Community Health Survey

UNIVERSITY OF VICTORIA
COASTS UNDER STRESS COMMUNITY HEALTH SURVEY

INTRODUCTION

Initial Introduction:

Hello, my name is _____. I work for a Victoria public opinion research firm called **R.A. Malatest & Associates Ltd.**, and we are calling on behalf of the University of Victoria**.** You should have received a letter in the mail describing a survey of households in B.C. coastal communities that is being conducted as part of the *Coasts Under Stress Project*.

[Surveyor note: if respondent has **not** heard about the survey, please read the following: (The survey results are intended to measure the quality of life and health of residents in selected B.C. coastal communities and determine public opinion with respect to various issues facing these communities.)]

We would like to collect your views on your community as a place to live and work. The survey should take about 20 minutes to complete and your participation is voluntary. Survey results will be combined for statistical purposes and presented in community and professional conferences, professional journals and as part of a doctoral dissertation. No individuals will be identified in publications or presentations, nor will results be presented in such a way that individuals could be identified.

A1. Do you have a few minutes to do the survey now?

1. Yes [PROCEED]
2. No [GO TO CALL BACK PAGE TO SCHEDULE APPOINTMENT]

SECTION A: ELIGIBILITY

To begin with, I just have a few questions to determine if you meet eligibility requirements established for participation in this study.

A2. In order to participate you must be 19 years or older. We choose our adult respondents in the households that we contact, by asking for the adult who has the next birthday. May I please speak to him or her?

1. I am the adult with the next birthday [GO TO A3]
2. Yes, I will get him or her for you [GO TO INTRO AND READ AGAIN]
3. Not home [GO TO CALL-BACK PAGE TO SCHEDULE APPOINTMENT; MAKE SURE YOU GET FIRST NAME]
4. No, you cannot speak to them. [THANK AND PROMPT IF THERE IS A MORE APPROPRIATE TIME TO CALL BACK AND SPEAK TO THE OTHER PERSON.]

5. Nobody in the household that meets those requirements [THANK AND TERMINATE; CODE AS NON-QUALIFIER]
6. Respondent is not the person with the next birthday but wants to do survey [PROCEED]

In order to participate you must also reside within the city/town or municipality limits of the communities selected for this survey…

A3. Do you currently reside within the limits of the city/town or municipality of [RECALL TOWN/CITY FIELD]?

1. Yes [GO TO B1]
2. No [GO TO NON-RESIDENT RESPONDENT INELIGIBLE PAGE]

NON-RESIDENT RESPONDENT INELIGIBLE

In order to participate in this survey, you must reside within the city/town or municipal limits of [RECALL TOWN/CITY FIELD].

Thank you for your time today.

SECTION B: COMMUNITY ENVIRONMENT

B1. How many years have you lived in the [RECALL TOWN/CITY FIELD] area?

____years [SURVEYOR: ROUND TO NEAREST YEAR]

888. Don't know
999. No response

B2. For the following question, please use a 5-point satisfaction scale, with 1 being "Very Dissatisfied", 2 being "Dissatisfied", 3 being "Neither Dissatisfied nor Satisfied", 4 being "Satisfied", and 5 being "Very Satisfied". In general, how satisfied are you with the [RECALL TOWN/CITY FIELD] area as a place to live?

1. Very dissatisfied
2. Dissatisfied
3. Neither dissatisfied nor satisfied
4. Satisfied
5. Very satisfied

8. Don't know
9. No response

B3. What is the MAIN thing you like **most** about the [RECALL TOWN/CITY FIELD] area?

88. Don't know

99. No response

B4. What is the MAIN thing you like **least** about the [RECALL TOWN/CITY FIELD] area?

88. Don't know

99. No response

B5. If you could suggest **one** thing that would improve the quality of life in [RECALL TOWN/CITY FIELD], what would that be?

88. Don't know

99. No response

B6. Over the past year, have you considered moving out of the [RECALL TOWN/CITY FIELD] area?

1. Yes
2. No

8. Don't know

9. No response

B7. We would like to have your input about some of the public services available in [RECALL TOWN/CITY FIELD]. Using a 5-point scale, with 1 being "Very Dissatisfied", 2 being "Dissatisfied", 3 being "Neither Dissatisfied nor Satisfied", 4 being "Satisfied", and 5 being "Very Satisfied", can you please indicate your level of satisfaction with each of the following:

	Very Dissatisfied	Dissatisfied	Neither Dissatisfied nor Satisfied	Satisfied	Very Satisfied	Don't Know	No Response
a. The level of	1	2	3	4	5	8	9

health services in [RECALL TOWN/CITY FIELD].							
b. The education system/schools in [RECALL TOWN/CITY FIELD].	1	2	3	4	5	8	9
c. The availability of family counselling services in [RECALL TOWN/CITY FIELD].	1	2	3	4	5	8	9
d. Road maintenance.	1	2	3	4	5	8	9
e. Emergency fire response.	1	2	3	4	5	8	9
f. Sewage system.	1	2	3	4	5	8	9
g. Water system.	1	2	3	4	5	8	9
h. Garbage collection.	1	2	3	4	5	8	9
i. Quality of recreation services.	1	2	3	4	5	8	9
j. Law enforcement services.	1	2	3	4	5	8	9
k. Ambulance service.	1	2	3	4	5	8	9

B8. The following statements may or may not apply to your community. Using a 5-point scale, with 1 being “Strongly Disagree”, 2 being “Disagree”, 3 being “Undecided”, 4 being “Agree” and 5 being “Strongly Agree”, please indicate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Don’t Know	No Response
a. Alcohol abuse is a problem here.	1	2	3	4	5	8	9
b. Drug abuse is a problem here.	1	2	3	4	5	8	9
c. Family violence is a problem here.	1	2	3	4	5	8	9
d. Unemployment is a problem here.	1	2	3	4	5	8	9
e. Sexual abuse is a problem here.	1	2	3	4	5	8	9
f. Racial discrimination is a problem here.	1	2	3	4	5	8	9

B9. We would like to get your perspectives about how some things may have changed in [RECALL TOWN/CITY FIELD]. Looking back over the past year, could you please indicate the extent to which things have gotten better, gotten worse, or had

no change. Using a 5-point scale, with 1 being "Significantly Worse", 2 being "Somewhat Worse", 3 being "No Change", 4 being "Somewhat Improved", and 5 being "Significantly Improved" please express your opinion on whether the following things have changed:

	Significantly Worse	Somewhat Worse	No Change	Somewhat Improved	Significantly Improved	Don't Know	No Response
a. Economic opportunities available to community residents.	1	2	3	4	5	8	9
b. The level of provincial services available to the community (e.g., family, education, and health services).	1	2	3	4	5	8	9
c. The level of local services generally (e.g., road maintenance, fire response, police services).	1	2	3	4	5	8	9
d. Your personal financial situation.	1	2	3	4	5	8	9
e. Your personal employment situation.	1	2	3	4	5	8	9

SECTION C: COMMUNITY INVOLVEMENT

C1. We are interested in your participation in community activities and organizations. Of the following, which have you been involved with in the past year: [CHOOSE ALL THAT APPLY]

	Yes	No	Don't Know	No Response
a. Attended meetings of the Municipal Council or School Board.	1	2	8	9
b. Signed a petition related to a local issue.	1	2	8	9
c. Worked with others or joined an organization to do something about a community issue.	1	2	8	9
d. Spoke or wrote to an official about a local issue.	1	2	8	9
e. Volunteered at a neighbourhood church or religious organization.	1	2	8	9
f. Volunteered at a sporting, civic or other local event.	1	2	8	9
g. Any other sort of voluntary work for no pay.	1	2	8	9

C2. Using a 5-point scale, with 1 being "Not at all involved", 2 being "Slightly Involved", 3 being "Moderately Involved", 4 being "Considerably Involved" and 5 being "Very Involved", how involved have you been in local community events (e.g., social or recreational events, church or religious groups, community service groups)? Would you say you have been…

1. Not at all involved
2. Slightly involved
3. Moderately involved
4. Considerably involved
5. Very involved

8. Don't know
9. No response

C3. How would you describe your attachment to your local community? Would you say it is…

1. Very weak
2. Somewhat weak
3. Neither strong nor weak
4. Somewhat strong
5. Very strong

8. Don't know
9. No response

SECTION D: INDIVIDUAL HEALTH

To help us understand people's health in your community, we would like to ask a few health-related questions. Many of these questions are of a personal or sensitive nature. Your answers will be kept confidential, and the University of Victoria will not be given your name or any identifying information. No one except the research company will know how you responded. If you feel uncomfortable answering any of the following questions please let me know and we will move on to the next question.

D1. How would you rate your health, in general, at this time? Would you say it is…

1. Poor
2. Fair
3. Good
4. Very good
5. Excellent

8. Don't know
9. No response

D2. *Compared to other people your age*, would you say your *physical* health is…

1. Much worse
2. Somewhat worse
3. About the same
4. Somewhat better
5. Much better

8. Don't know
9. No response

D3. *Compared to other people your age*, would you say your *emotional* health is…

1. Much worse
2. Somewhat worse
3. About the same
4. Somewhat better
5. Much better

8. Don't know
9. No response

D4. How satisfied are your with your health *in general*? Are you…

1. Very dissatisfied
2. Dissatisfied
3. Neither satisfied nor dissatisfied
4. Satisfied
5. Very satisfied

8. Don't know
9. No response

D5. Compared to a year ago, has your health changed? Would say your health is…

1. Significantly worse
2. Somewhat worse
3. Unchanged
4. Somewhat better
5. Significantly better

8. Don't know

9. No response

D6. During the **past 4 weeks**, to what extent has your **physical or emotional health** interfered with your work or other regular activities?

1. Never
2. Not very often
3. Occasionally
4. Often
5. Always

8. Don't know

9. No response

D7. How frequently do you smoke?

1. Never
2. Occasionally
3. Daily
4. Hourly

8. Don't know

9. No response

In the next question, when we use the word <u>drink</u> it means:
- one bottle or can of beer or a glass of draft,
- one glass of wine or a wine cooler, or
- one straight or mixed drink with one and a half ounces of hard liquor.

D8. During the past 12 months, how often did you drink alcoholic beverages?

1. Never
2. Less than once a month
3. Once a month
4. 2-3 times a month
5. Once a week
6. 2-3 times a week
7. 4-6 times a week
8. Every day

88. Don't know
99. No response

D9. On average over the last month, how many times a week did you exercise for more than 15 minutes DURING YOUR LEISURE TIME?

1. Not at all

2. Once per week
3. 2-3 times per week
4. 4-6 times per week
5. Every day
6. More than once every day

8. Don't know
9. No response

D10. The following are some well-known sources of stress in people's lives. Using a 5-point scale with 1 being "Not at all Stressful", 2 being "Slightly Stressful", 3 being "Moderately Stressful", 4 being "Considerably Stressful" and 5 being "Very Stressful", can you tell me how you would rate each of the following as a source of stress for yourself:

	Not at all Stressful	Slightly Stressful	Moderately Stressful	Considerably Stressful	Very Stressful	Don't Know	Not Applicable
a. Employment situation	1	2	3	4	5	8	9
b. Financial situation/support	1	2	3	4	5	8	9
c. Housing situation	1	2	3	4	5	8	9
d. Social situation/support	1	2	3	4	5	8	9
e. Relationship with spouse/partner	1	2	3	4	5	8	9
f. Relationship with child(ren)	1	2	3	4	5	8	9
g. Relationship with parents	1	2	3	4	5	8	9

D11. Considering your life as a whole, using the same 5-point scale, **how stressful** would you say it is?

Not at all Stressful	Slightly Stressful	Moderately Stressful	Considerably Stressful	Very Stressful	Don't Know	No Response
1	2	3	4	5	8	9

D12. Compared with one year ago would you say your life is:

Much Less Stressful	Somewhat Less Stressful	About the Same	Somewhat More Stressful	Much More Stressful	Don't Know	No Response
1	2	3	4	5	8	9

D13. Who could you really count on to help you out in a crisis situation, even though they might have to go out of their way to do so?

1. Family members
2. Friends
3. Others
4. No one

8. Don't know

9. No response

D14. Who can you talk with frankly and be totally yourself, without having to watch what you say?

1. Family members
2. Friends
3. Others
4. No one

8. Don't know

9. No response

D15. In general, how many close friends and close relatives do you have? _____

[SURVEYOR NOTE: IN PREVIOUS TWO QUESTIONS, IF RESPONDENT INDICATED THAT THEY HAVE INDIVIDUALS WHOM THEY CAN TALK WITH FRANKLY, WITHOUT HAVING TO WATCH WHAT THEY SAY, OR IF RESPONDENT INDICATED THAT THEY HAVE INDIVIDUALS THEY CAN REALLY COUNT ON TO HELP OUT IN A CRISIS SITUATION THESE WOULD BE CHARACTERIZED AS ***CLOSE*** FRIENDS OR RELATIVES.]

SECTION E: SOCIO-DEMOGRAPHIC QUESTIONS

I just have a few final socio-demographic questions to ask you. This information will be combined with other survey results for statistical purposes. No individuals will be identified in publications or presentations, nor will results be presented in such a way that individuals could be identified.

E1. Gender [SURVEYOR, DO NOT ASK THE RESPONDENT]

1. Male
2. Female

E2. In what age range are you?

1. 19-24
2. 25-34
3. 35-44
4. 45-54
5. 55-64
6. 65 or over

8. Don't know
9. No response

E3. How would you describe your cultural or ethnic background? (e.g. First Nations, English Canadian, French Canadian, Japanese, Haitian, Iranian, etc.)

(Please specify)_____

E4. **Including yourself**, how many people live in your household? _____

88. Don't know
99. No response

E5. In what age ranges are they? [SURVEYOR: ENTER NUMBER OF INDIVIDUALS IN EACH RANGE]

1. 5 and under___
2. 6-14___
3. 15-18___
4. 19-29___
5. 30-49___
6. 50-64___
7. 65 or over___

88. Don't know
99. No response

[NOTE: PROGRAM CHECK TO MAKE SURE SUM OF E5=E4]

E6. Do you have any dependent children or seniors living in the household?

1. Yes, dependent child(ren)
2. Yes, dependent senior(s)
3. Yes, both child(ren) and senior(s)
4. Yes, other (i.e., dependent sibling, dependent adult):_____
5. No dependents living in household

8. Don't know
9. No response

E7. What is the **highest** level of education you have completed?

1. No formal education
2. Grade school (K to grade 8)
3. Some high school
4. High school diploma/GED
5. Some vocational or business training
6. Trade/vocational certificate or diploma (including apprenticeship)
7. Some community college/technical institute
8. Community college/technical institute diploma
9. Some university
10. University Degree

88. Don't know
99. No response

E8. Are you currently enrolled in any education or training program, either part-time or full-time?

1. Yes
2. No

8. Don't know
9. No response

E9. What is your present **primary** employment status (for main job)?

1. Paid work full-time [GO TO E10]
2. Paid work part-time [GO TO E10]
3. Self-employed full-time [GO TO E10]
4. Self-employed part-time [GO TO E10]
5. Homemaker (at home caring for children/adults, unpaid domestic duties)[GO TO E13]
6. Retired [GO TO E13]
7. Unemployed, not looking for work [GO TO E13]
8. Unemployed, looking for work [GO TO E13]
9. Student (including students who are working part-time, but not full-time) [GO TO E13]

88. Don't know
99. No response

E10. What is your main (paid) occupation? (e.g., network support analyst, fishing vessel captain or grocery store clerk) (*If more than one job, ask about main job).* [SURVEYOR: PLEASE DESCRIBE IN DETAIL]

_____

88. Don't know
99. No response

E11. In what kind of business, industry or service sector do you work?

1. Accommodation, food and beverage
2. Agriculture/primary industry
3. Aquaculture/Fishing
4. Business services
5. Construction industry
6. Education services
7. Finance, insurance, real estate
8. Forestry: Logging
9. Forestry: Silviculture/Reforestation
10. Forestry: Value-added wood processing
11. Government services (not including health or social services)
12. Health & social services
13. Information technology
14. Manufacturing (**excluding** value-added wood processing)
15. Mining

16. Retail trade
17. Tourism services, not including accommodation/food and beverage (e.g., eco-tourism, adventure tourism)
18. Transportation, communications and utilities
19. Wholesale trade
20. Other *(please specify):*_____

88. Don't know
99. No response

E12. Where do you work? *(If more than one job, ask about main job).*

1. In [RECALL TOWN/CITY FIELD].
2. Out of town, specify location:_____

8. Don't know
9. No response

[GO TO E17]

E13. Did you have a (paid) job in the past?

1. Yes [GO TO E14]
2. No [GO TO E17]

E14. What ***was*** your main (paid) occupation? (e.g., network support analyst, fishing vessel captain or grocery store clerk) (*If more than one job, ask about most recent job).*
[SURVEYOR: PLEASE DESCRIBE IN DETAIL]

_____

88. Don't know
99. No response

E15. In what kind of business, industry or service sector did you ***previously*** work?

1. Accommodation, food and beverage
2. Agriculture/primary industry
3. Aquaculture/Fishing
4. Business services
5. Construction industry
6. Education services
7. Finance, insurance, real estate
8. Forestry: Logging

9. Forestry: Silviculture/Reforestation
10. Forestry: Value-added wood processing
11. Government services (not including health or social services)
12. Health & social services
13. Information technology
14. Manufacturing (**excluding** value-added wood processing)
15. Mining
16. Retail trade
17. Tourism services, not including accommodation/food and beverage (e.g., eco-tourism, adventure tourism)
18. Transportation, communications and utilities
19. Wholesale trade
20. Other *(please specify):*_____

88. Don't know
99. No response

E16. Where did you ***previously*** work? *(If more than one job, ask about most recent job).*

1. In [RECALL TOWN/CITY FIELD].
2. Out of town, specify location:_____

8. Don't know
9. No response

E17. At present, what is your marital status?

1. Married or living with partner (common-law) [GO TO E18]
2. Widowed [GO TO E19]
3. Divorced [GO TO E19]
4. Separated [GO TO E19]
5. Never married [GO TO E19]

8. Don't know
9. No response

E18. What is your spouse's or partner's present employment status? [SURVEYOR: SPOUSE OR PARTNER MUST LIVE IN SAME HOUSEHOLD.]

1. Paid work full-time
2. Paid work part-time
3. Self-employed full-time
4. Self-employed part-time
5. Homemaker (at home caring for children/adults, unpaid domestic duties)
6. Retired
7. Unemployed, not looking for work

8. Unemployed, but looking for work
9. Student (including students who are working part-time, but not full-time)

88. Don't know
99. No response

E19. What is your total annual household income before taxes, including income from all members of your household?

1. Up to $10,000
2. $10,000 to $24,999
3. $25,000 to $39,999
4. $40,000 to $55,999
5. $56,000 to $69,999
6. $70,000 to $99,999
7. $100,000 or more

8. Don't know
9. No response

E20. Is your dwelling:

1. Owned or being bought
2. Rented (even if no cash is being paid)

8. Don't know
9. No response

E21. The University of Victoria is interested in conducting some group interviews (focus groups) with people in your community at some time in the future as part of the *Coasts Under Stress Project*. Would you be interested in participating in one of these group interviews to talk more about the issues facing your community?

1. Yes _____
2. No [CONCLUDE SURVEY]

If you are selected to participate, someone from the University of Victoria will call you to let you know the details about when these meetings may be held. Can you please give me your name and telephone number so that someone from the University of Victoria can call you if you are selected?

Telephone: 250-___-____

THIS CONCLUDES THE SURVEY. THANK YOU VERY MUCH FOR YOUR TIME!!!

Appendix 2. Consent form for Interviews

Coasts Under Stress (CUS) Study Interview Consent Form

Researchers: Sulan Dai (PhD candidate) and Heather Nelson (Research assistant)

Supervisor: Dr. Martin Taylor, Professor of Geography

CUS Research Goals: To examine the impact of societal and environmental change on human and environmental health in Canada's coastal communities.

Objective: Working with people in four coastal communities in BC (Tofino, Ucluelet, Port Hardy, and Prince Rupert) we are investigating whether economic and social changes in these communities over the past 20 years are affecting individual and community health. Research collection methods include telephone surveys and in-person interviews and will be conducted over the course of approximately one year.

As a previous participant in the CUS project, I now confirm my willingness to participate in this follow-up study.

I understand that:

- I will engage in a face-to-face interview with a CUS researcher lasting about an hour;
- The interview will be guided by a checklist of questions that address issues related to the impacts of environmental and economic changes on my community and its residents;
- My participation in the interview is completely voluntary and I can terminate the interview at any time without penalty.
- The interview will be tape-recorded and subsequently transcribed;
- The transcript will be analysed and the results will be reported so that my anonymity is fully protected. Only researchers directly involved in Arm 5 of the CUS project will have access to information collected on my identity;
- All information in tape or text format will be secured in such a way that insures confidentiality;
- The information gathered during this interview will inform a PhD thesis, being completed for the UVIC Geography department. Information may also be incorporated into journal articles pertaining to socio-economic restructuring and population health to be published in academic journals;

- I may contact the researchers to request further information about the study and/or a summary of the research findings;
- In thanks for my participation, I will receive a small token of appreciation.

In the full understanding of these terms and conditions, I hereby consent to participate in the interview.

Name _____ Date _____

Signature _____

Appendix 3. Interview Checklist

Preamble: I am a graduate student at the University of Victoria, and I am a member of the research team of The Coasts under Stress project. I am especially interested in the following questions:

- How has socio-economic restructuring (e.g. job loss, industry closure, government policy changes…) impacted you and your health?
- How have you dealt with these difficult events?

Today's interview should take about one hour. If you have any questions at any point do not hesitate to ask. With your agreement, we would like to tape record the interview to accurately document your views. Your name or address will not appear on any tapes or manuscripts.

Topic	Questions	Probe
Introductory Questions/ Quality of Life	How long have you lived in this area?	
	What work are you presently/have you been employed in?	
	How would you describe the area/place where you live?	- quality of life, family and friends, neighbours, env't -work, services -for your children/future?
Perceptions of Local Economy	How do you feel about the present economic situation in your community?	
	Do you feel the economic situation has affected you and your family personally? Please explain.	-financial situation -housing situation -health
	18% of participants in our original survey in your community stated that "economic opportunities available to community residents" are *significantly or somewhat worse* than one year ago. Do you agree with this? Why or why not?	

	Have you seen changes in the economic opportunities in the past 10, 15, 20 years? What sort of changes?	-differences in economic structure of the community over time? -specific business/industry?
	Do you feel that any government policies or actions have made things worse or improved your community's current economic situation?	-e.g. Mifflin Plan, lifting of moratorium on fish farms, changes in forestry policy
Perceptions of Community Health	In the survey, 87.9% of respondents in your community stated they are *satisfied or very satisfied* with Ucluelet as a place to live. How do you feel about this area as a place to live? Have your feelings changed? Why?	-change in feelings due to economic outlook? -would you move?
	Do you feel that there's a strong sense of community here? Why?	-cohesive/segregated/ supportive?
	Would you say that your sense of community has changed in the past ten years? What has contributed to this change?	
	Have there been changes to community social services (health, police, child and family, EI/social assistance, etc.) in the past 5-10 years? What do you think has caused these changes in social services/support?	-government policies? -change in accessibility?
	These questions stem from a concern for community health. Do you consider your community to be a "healthy community"? Why or why not? What factors contribute to community health?	-increased/decreased/ same? -social capital -signs/symptoms of poor community health (e.g. alcohol/drug abuse, crime)
	Are there a lot of community-oriented activities (e.g., volunteering, Rotary, Lions, sports, clubs, etc.) and are you involved in any of these activities? Why/why not?	
	Has your involvement in these activities changed (withdrawal from activities, increase in activities, change in nature of activities) over the last 5 – 10 years? How? Why?	
Perceptions of Personal Health and Coping Strategies	How do you feel about your overall health? What are some of the most important factors that contribute to your level of health?	
	How would you rate your overall stress level? What are some of the most important factors that contribute to your level of stress?	

	Of the people who participated in our original survey, 25.4% of individuals stated that their employment situation is *very or considerably stressful*. Do you find yourself stressed by your present employment situation? Why/why not? How do you cope with employment-related stress?	-*information/ communication related*: e.g., talk with family/friends -*action*: access gov't programs, retraining
	Do you have people you can rely on during times of stress?	-friends/family -colleagues at work
	Do you know of people in your community (family/friends) who have experienced or are experiencing poor health because of changes in their personal employment and/or the community economy?	
	Do you feel that governments (local, provincial, federal) are taking steps to address the present economic and other concerns in your community? How?	
Solutions	Looking ahead 3 years, what would make your community a better place to live?	
	Who is responsible for making the changes that you suggest?	-local community members -businesses -government -other organizations

Appendix 4. Interview Schedule

Interview with participants and key informants in Ucluelet	Jan. 18-24, 2003
Interview with participants and key informants in Tofino	Jan. 28-31, 2003
Interview with participants and key informants in Port Hardy	Feb. 5-12, 2003
Interview with participants and key informants in Prince Rupert	Feb. 21-Mar. 3, 2003

Appendix 5. Interview Coding System

Tree Nodes

(1) /Descriptors
(1 1) /Descriptors/Increasing or expanding
(1 2) /Descriptors/Decreasing or downsizing
(1 3) /Descriptors/Remain the same
(1 4) /Descriptors/Positive
(1 5) /Descriptors/Negative
(1 6) /Descriptors/Satisfactory
(1 7) /Descriptors/Unsatis factory
(1 8) /Descriptors/Yes
(1 9) /Descriptors/No
(1 10) /Descriptors/Somewhat
(1 11) /Descriptors/Improvement
(1 12) /Descriptors/Needs improvement
(1 13) /Descriptors/Past
(1 14) /Descriptors/Present
(1 15) /Descriptors/Youth
(1 16) /Descriptors/Don't know
(2) /Resource-based industry
(2 1) /Resource-based industry/Fishery
(2 1 1) /Resource-based industry/Fishery/commercial fishing
(2 1 2) /Resource-based industry/Fishery/aquaculture
(2 1 3) /Resource-based industry/Fishery/processing
(2 2) /Resource-based industry/Forestry
(2 2 1) /Resource-based industry/Forestry/harvesting or silviculture
(2 2 2) /Resource-based industry/Forestry/value-added
(2 3) /Resource-based industry/Mining
(2 4) /Resource-based industry/Oil and gas
(3) /Service sector
(3 1) /Service sector/Retail
(3 2) /Service sector/Food & beverage
(3 3) /Service sector/Tourism
(3 3 1) /Service sector/Tourism/B&B's
(3 3 2) /Service sector/Tourism/hotels
(3 3 3) /Service sector/Tourism/adventure tourism
(4) /Employment
(4 1) /Employment/stability/security
(4 2) /Employment/remuneration
(4 3) /Employment/length of season
(5) /Economic situation
(5 1) /Economic situation/=poor health in others
(6) /Effects on families
(6 1) /Effects on families/income

(6 2) /Effects on families/housing
(6 2 1) /Effects on families/housing/availability
(6 2 2) /Effects on families/housing/property value
(6 3) /Effects on families/children
(6 4) /Effects on families/marital relationship
(6 5) /Effects on families/health
(6 5 1) /Effects on families/health/physical health
(6 5 2) /Effects on families/health/mental or emotional health
(7) /Government policies
(7 1) /Government policies/municipal
(7 2) /Government policies/provincial
(7 3) /Government policies/federal
(8) /Government acknowledgement
(8 1) /Government acknowledgement/municipal
(8 2) /Government acknowledgement/provincial
(8 3) /Government acknowledgement/federal
(9) /Social services
(9 1) /Social services/Health care
(9 2) /Social services/Education
(9 3) /Social services/Child and family
(9 4) /Social services/EI & IA
(9 5) /Social services/Police
(9 6) /Social services/Municipal services
(9 6 1) /Social services/Municipal services/roads & highways
(9 6 2) /Social services/Municipal services/water & sewers
(9 6 3) /Social services/Municipal services/public transport
(9 6 4) /Social services/Municipal services/recreation facilities
(10) /Quality of life
(10 1) /Quality of life/Community
(10 1 1) /Quality of life/Community/small town
(10 1 2) /Quality of life/Community/supportive
(10 1 3) /Quality of life/Community/safe
(10 2) /Quality of life/Environment
(10 3) /Quality of life/Family
(10 3 1) /Quality of life/Family/children
(10 4) /Quality of life/Isolation
(11) /Community satisfaction
(11 1) /Community satisfaction/Feelings unchanged
(11 2) /Community satisfaction/Feelings changed
(11 3) /Community satisfaction/Not planning to move
(11 4) /Community satisfaction/Considering moving
(12) /Sense of community
(12 1) /Sense of community/Strong
(12 2) /Sense of community/Cohesive
(12 3) /Sense of community/Weak
(12 4) /Sense of community/Fragmented

(12 5) /Sense of community/Changed
(13) /Healthy community
(14) /Health Indicators
(14 1) /Health Indicators/mental health
(14 2) /Health Indicators/drug use
(14 3) /Health Indicators/alcohol use
(14 4) /Health Indicators/opportunities for youth
(14 5) /Health Indicators/suicide
(14 6) /Health Indicators/population diversity
(14 7) /Health Indicators/physically active
(15) /Community oriented activities
(15 1) /Community oriented activities/service clubs
(15 2) /Community oriented activities/community events
(15 3) /Community oriented activities/sports & recreation
(15 4) /Community oriented activities/religious groups
(15 5) /Community oriented activities/political involvement
(15 6) /Community oriented activities/arts & entertainment
(15 7) /Community oriented activities/personal involvement
(15 7 1) /Community oriented activities/personal involvement/changed
(16) /Community population
(16 1) /Community population/out-migration
(16 2) /Community population/in-migration
(16 3) /Community population/absentee landlords or business owners
(16 4) /Community population/increase in transients
(17) /First Nations
(18) /Overall personal health
(18 1) /Overall personal health/excellent
(18 2) /Overall personal health/good
(18 2 1) /Overall personal health/good/except weight
(18 2 2) /Overall personal health/good/except aches and pains
(18 2 3) /Overall personal health/good/except other
(18 3) /Overall personal health/poor
(18 3 1) /Overall personal health/poor/physical
(18 3 2) /Overall personal health/poor/cardiovascular
(18 3 3) /Overall personal health/poor/other
(19) /Overall personal stress
(19 1) /Overall personal stress/low
(19 2) /Overall personal stress/moderate
(19 3) /Overall personal stress/high
(19 4) /Overall personal stress/contributing factors
(19 4 1) /Overall personal stress/contributing factors/family
(19 5) /Overall personal stress/coping mechanisms
(19 5 1) /Overall personal stress/coping mechanisms/friends, family, colleagues
(19 5 2) /Overall personal stress/coping mechanisms/leisure activities
(19 5 3) /Overall personal stress/coping mechanisms/community involvement

Free Nodes

(F 1) //Free Nodes/community development
(F 2) //Free Nodes/Ucluelet vs Tofino
(F 3) //Free Nodes/individual responsibility
(F 4) //Free Nodes/personal choice
(F 5) //Free Nodes/community adaptability
(F 6) //Free Nodes/resilience vs vulnerability
(F 7) //Free Nodes/seasonal nature of stress
(F 8) //Free Nodes/corporate responsibility
(F 9) //Free Nodes/specialty fisheries increasing
(F 10) //Free Nodes/shift to alternative work
(F 11) //Free Nodes/environment vs resource extraction
(F 12) //Free Nodes/Pacific Rim park - Tofino dev't
(F 13) //Free Nodes/tourist tax
(F 14) //Free Nodes/Eik Street tree
(F 15) //Free Nodes/Ucluelet
(F 16) //Free Nodes/resistance to change
(F 17) //Free Nodes/goose barnacle fishery
(F 18) //Free Nodes/day care
(F 19) //Free Nodes/winter vs summer
(F 20) //Free Nodes/effects on environment
(F 21) //Free Nodes/women's resource centre
(F 22) //Free Nodes/adult education
(F 23) //Free Nodes/diverse industries
(F 24) //Free Nodes/crab fishery
(F 25) //Free Nodes/conflicts
(F 26) //Free Nodes/drug store medications
(F 27) //Free Nodes/Clayoquot biosphere reserve
(F 28) //Free Nodes/sustainability
(F 29) //Free Nodes/hake fishery
(F 30) //Free Nodes/lack of long term planning
(F 31) //Free Nodes/social service or other NGO's
(F 32) //Free Nodes/impact small independent fishermen
(F 33) //Free Nodes/birthing services
(F 34) //Free Nodes/limited
(F 35) //Free Nodes/Clayoquot Sound protests
(F 36) //Free Nodes/diverse fisheries & products
(F 37) //Free Nodes/processing jobs leaving community
(F 38) //Free Nodes/foreign fishing fleets
(F 39) //Free Nodes/retraining or career services
(F 40) //Free Nodes/in the last year
(F 41) //Free Nodes/food bank
(F 42) //Free Nodes/the need is increasing
(F 43) //Free Nodes/space availability
(F 44) //Free Nodes/Tofino
(F 45) //Free Nodes/small business

(F 46) //Free Nodes/communities not working together
(F 47) //Free Nodes/short-term make work projects
(F 48) //Free Nodes/changing community priorities
(F 49) //Free Nodes/devastation
(F 50) //Free Nodes/lack of community control
(F 51) //Free Nodes/Chamber of Commerce
(F 52) //Free Nodes/practitioners' complacency
(F 53) //Free Nodes/high
(F 54) //Free Nodes/average
(F 55) //Free Nodes/special needs support
(F 56) //Free Nodes/variable
(F 57) //Free Nodes/unsustainable
(F 58) //Free Nodes/potential
(F 59) //Free Nodes/low
(F 60) //Free Nodes/Port Alice
(F 61) //Free Nodes/vandalism
(F 62) //Free Nodes/workload decreased
(F 63) //Free Nodes/cruise ships
(F 64) //Free Nodes/better communication needed
(F 65) //Free Nodes/private industry management
(F 66) //Free Nodes/municipal tax base
(F 67) //Free Nodes/inadequate to meet needs
(F 68) //Free Nodes/support from banks & businesses
(F 69) //Free Nodes/land claims
(F 70) //Free Nodes/loss of a lifestyle
(F 71) //Free Nodes/inability to plan
(F 72) //Free Nodes/Port Alice pulp mill
(F 73) //Free Nodes/must travel to access services
(F 74) //Free Nodes/strike
(F 75) //Free Nodes/lack of economic diversity
(F 76) //Free Nodes/increasing violence
(F 77) //Free Nodes/workload has increased
(F 78) //Free Nodes/unknown start date
(F 79) //Free Nodes/impact on general labor
(F 80) //Free Nodes/reduced summer jobs for students
(F 81) //Free Nodes/opportunities for tradesmen elsewhere
(F 82) //Free Nodes/poverty
(F 83) //Free Nodes/globalization
(F 84) //Free Nodes/spin-off benefits
(F 85) //Free Nodes/grain terminal
(F 86) //Free Nodes/coal terminal
(F 87) //Free Nodes/containerization
(F 88) //Free Nodes/gov't agent offices leaving town
(F 89) //Free Nodes/rural vs urban
(F 90) //Free Nodes/changed motivation for volunteering
(F 91) //Free Nodes/insufficient food

(F 92) //Free Nodes/long waitlists
(F 93) //Free Nodes/high physician turnover
(F 94) //Free Nodes/need for counselling services
(F 95) //Free Nodes/not just Pr. Rupert, systemic
(F 96) //Free Nodes/construction
(F 97) //Free Nodes/responsibility shifting to municipalities
(F 98) //Free Nodes/difficulty attracting professionals
(F 99) //Free Nodes/unrealistic expectations
(F 100) //Free Nodes/people with disabilities

UNIVERSITY OF VICTORIA PARTIAL COPYRIGHT LICENSE

Title of Dissertation:

Socio-economic Restructuring and Health: A Multi-method Study of Coastal Communities in British Columbia

Author _____

Sulan Dai

Signed: January 31, 2006