FARMERS' ATTITUDES TOWARD GOLF COURSE DEVELOPMENT IN BRITISH COLUMBIA'S AGRICULTURAL LAND RESERVE

by

Heather Elizabeth Siddon
B.Sc., University of Alberta, 1990

A Thesis Submitted in Partial Fulfilment of the
Requirements for the Degree of

MASTER OF ARTS

in the Department of Geography

We accept this thesis as conforming
to the required standard

[redacted]

Dr. M.S. Flaherty, Supervisor (Department of Geography)

[redacted]

Dr. C.J.B. Wood, Departmental Member (Department of Geography)

[redacted]

Dr. R.L. Bish, Outside Member (School of Public Administration)

[redacted]

Dr. R. Warburton, External Examiner (Department of Sociology)

University of Victoria

Supervisor: Dr. M.S. Flaherty

ABSTRACT

From a simple game first played on open terrain in Scotland, golf has developed into an industry worth billions of dollars involving millions of participants around the world. More than one million hectares of land have been converted to golf courses and, as the popularity of the sport continues to grow, more land will be developed for the pursuit of golf. The prolific development of golf courses and their associated facilities such as club houses, resorts and condominium developments have been linked to several negative environmental impacts, including the destruction of forests, over consumption and contamination of ground water supplies, illness and death of wildlife and humans, loss of farmland and the uprooting of people.

In British Columbia in 1973, concern for the loss of farmland lead to the enactment of the Land Commission Act and the establishment of the Agricultural Land Reserve. Recent changes to the Act led to a dramatic increase in golf course proposals and development in the farmland surrounding urban centres in the province. These changes to the legislation were made after minimum consultation with farm operators. This study investigates farm operators' attitudes towards golf course development. It presents the results of a survey questionnaire conducted in Surrey, located in the Greater Vancouver Regional District and North Saanich and Central Saanich which are located in the Capital Regional District.

The findings indicate that these respondents view golf courses as another type of urban intrusion with similar consequences. They felt that increased traffic, more residential development, higher land values, pressure to sell land and conflicts over water supplies were the most likely to result from golf course development in the A.L.R. Most of the farm operators interviewed support agricultural land protection although many voiced a need for changes to the current legislation. Many of the respondents did not feel that golf courses should be excluded from the Reserve and commented that there is space for golf course development particularly on poorer quality farmland. Many suggest that some form of urban development is inevitable in the face of urban growth.

Examiners:

[redacted]

Dr. M.S. Flaherty, Supervisor (Department of Geography)

[redacted]

Dr. C.J.B. Wood, Departmental Member (Department of Geography)

[redacted]

Dr. R.L. Bish, Outside Member (School of Public Administration)

[redacted]

Dr. R. Warburton, External Examiner (Department of Sociology)

TABLE OF CONTENTS

List of Tables

List of Figures

ACKNOWLEDGEMENTS

I owe a debt of gratitude to many people who have assisted me during my extended tour of graduate studies. I would like to thank my supervisor, Dr. Mark Flaherty, and my committee members, Dr. Colin Wood and Dr. Robert Bish for their feedback and patience.

I would like to express my appreciation to many members of the faculty and staff of the Geography Department who have assisted me over the years. Thanks to the office staff, especially Ruth Steinfatt; thanks to Phil Wakefield, John Newcomb, Ole Heggen, Rick Sykes, Dr. Pamela Moss, Dr. Peter Keller, Dr. Steve Lonergan, and Dr. Phil Dearden.

I would like to thank the Sarah Spencer Foundation for their research award.

I would like to express my appreciation to the staff at the municipal halls of Surrey, Central Saanich and North Saanich and the staff at the office of the Greater Vancouver Regional District. I would like to extend a particular thanks to the District of Surrey where maps and other printed information were supplied at no cost if an individual was a student.

Many thanks to the "volunteers" , Dave Aharonian, Jenn, Mom and Melissa, who served as chauffeurs during the interview process. Extended gratitude to Melissa Wright who ended up spending more time in Surrey than I'm sure she had planned to during her entire lifetime. My appreciation is extended to my colleagues who over the years offered knowledge and encouragement: Barb, Rob, James, Karen, Rosaline, Dave, Tim, Kelly, Gillian, Martin, Linda, Lisa, Colin, and Nong. Special thanks to Tim Chan who shared his insights and Karen Dunham for her friendship and generosity. I am most indebted to Rosaline Canessa for her encouragement and assistance above and beyond the call of duty.

And to Muffer who much prefers sitting on top of drafts than reading them.

In memory of

JAMES GEORGE SIDDON

1938-1991

Chapter 1

INTRODUCTION

1.1 Nature of the Problem

Golf has developed into a sport played by millions around the world. Be it in the Americas, Asia, Europe, Australia or Africa, golf courses have and are continuing to appear (Golf Market Today, 1991). Since the 1980's, available capital and increasing leisure time have merged with the growing popularity of the sport to stimulate considerable development around the world (see for example Rimmer, 1994; Tourism Research Group, 1988). The ventures to meet this demand are not limited to the western world. The early 1990's has seen countries like China and Vietnam invest in the development of this "once-hated symbol of the bourgeoisie - a golf complex" (Karp, 1992) in order to tap into the international market of golf tourism. The sport of golf is now a multi-billion dollar industry catering to fifty million people around the world (Wheat, 1993). There are at least 25 thousand golf courses, more than one-half of which are found in the United States, providing recreation for golfers around the world (Wheat, 1993). Further development is expanding with the demand. In Japan alone, 1700 golf courses are in use with another 1300 under construction or in various stages of planning

(Kunihiro, 1990).

Despite its growing popularity, the origin of the game is somewhat of a mystery. The sport may have been introduced to Britain by the Romans or been adapted from one of several club-and-ball games played in Holland, Belgium and France. The earliest evidence of golf's Scottish beginnings is an edict banning the game for interfering in archery practice in Scotland in 1457 (Koehler, 1989). Until the seventeenth century, this often improvised game was popular with all classes and was played with simple implements on terrain open to many uses. The class distinctions found in society also emerged among golfers with the development of golf balls and golf clubs. Only the upper classes could afford to play frequently and with the advantages of more sophisticated equipment (Cousins, 1975). Another economic factor which contributed to a widening division between the classes was that poorer golfers could not afford caddies to carry equipment and chase after balls. Socializing became part of the game as men of the same class and occupations met for matches and post game conversation. The upper classes had the luxury of time and means to construct private social quarters along the public links and socialized more often which added to their prestige on the links. They also exerted more control over the development of the game by drafting rules and organizing competitions which were open to all, although individuals had to be "socially acceptable" (Cousins, 1975:9). In Scotland, the desire for private grounds to play golf grew with the population of users in the links. Golfers who could afford to pay for the maintenance of the greens became frustrated with sharing the common space with grazing cattle and sheep, rabbit breeders, military exercises, children frolicking and people on

leisurely strolls. Unlike in Scotland, golfers in England had to contend with the generally unsympathetic public in the common open spaces since golf was played by a few in the upper classes. Although the game was introduced to England during the reign of James I, it was only taken up by the upper classes in the nineteenth century. Private facilities were eventually developed by the people who could afford them in association with the established private clubs. Private clubs possessed the right to determine who did or did not obtain membership which further enhanced the exclusiveness of the sport.

The beginning of the twentieth century began to see the sport become less exclusive than it was originally in Scotland. The demand for the sport grew with the expanding middle class, and a new type of golf ball made the game easier to play and hence more popular. Local governments took up the development and maintenance of public courses which, unlike private facilities, any fee-paying individual could use. Golf came to North America with British immigrants. The Royal Montreal Golf Club became the first golf club on the continent in 1873. The sport was introduced into Asia mainly through British colonialism (Golf Market Today, 1991). In North America, the demands of the middle class golfer led to the development of golf courses owned by municipalities and private companies, which were open to all on payment of fees. Driving ranges and par-three courses were also constructed to meet the growing tide of golfers. These smaller sized facilities had the advantage of requiring less land for development and were cheaper for local governments and private owners to build and maintain. Worldwide, the recent golf course development boom has been fuelled by the golf tourism market. The golfing tourist market is highly attractive for tourism expenditures since participation in

golf tends to "increase with income, age, and education" (Tourism Research Group, 1988). Research suggests that this market will continue to expand with the aging "baby boomer" population which will have more leisure time and more disposable income (International Sports Inc., 1993).

Unlike many other sports such as tennis, lawn bowling, etc., a golf facility requires an extensive amount of land. An average 18-hole regulation golf course will cover 50 to 70 hectares (Surrey Planning and Development Services, 1990). The average 18-hole course in Asia will take 80 to 100 hectares (Handley, 1990; Kunihiro, 1990). Golf course developments tend to be accompanied by ancillary land uses such as clubhouses, housing, resort and convention facilities which easily doubles the amount of land consumed per facility (Pierce and Seguin, 1993; Surrey Planning and Development Services, 1990; Handley, 1990). Ideally, golf courses are located near urban centres which provides relatively easy access for the average urban golfer (Kunihiro, 1990). Consequently, golf course development is adding to the pressures for land use change on the rural lands in the shadow of urban centres be it through direct conversion of rural land or indirectly through the anticipation of further development (Bryant et al., 1982). In urban society's search for various types of recreational and amenity uses of land, great pressure is put on the rural environment to provide the space for such activities (Bunce and Troughton, 1984). Urbanization and population growth have brought about the conversion of land to urban uses and the intrusion of urban pressures (Bryant, 1989). The urban-based uses and users are not necessarily compatible with the rural uses and users.

A most notable consequence of urbanization and population growth is the loss of

agricultural land. In Canada, from 1966 to 1986, approximately 58 percent of the rural land converted had high capability for agricultural production (Warren et al., 1989). This trend is disconcerting because although Canada is the second largest nation in area in the world, Canada's prime agricultural lands are very limited (Warren et al., 1989). Concern over the loss of agricultural lands and the intrusion of urban activities into rural areas have prompted provincial governments to implement farmland protection strategies (see, for example, Manning, 1983; Furuseth and Pierce, 1982). These strategies have taken various forms, some being direct measures such as zoning, while others are indirect such as differential taxation and land ownership controls (see, for example, Manning, 1983). In British Columbia, the provincial government passed the Land Commission Act in 1973. Its overall purpose was to preserve agricultural land for farm use (Wilson and Pierce, 1984; Manning and Eddy, 1978). Prior to this legislation, British Columbia was losing an estimated 6,000 hectares of prime agricultural land per year. Initially, residential subdivision and conversion of any land that was taxed as farmland, zoned for agriculture, or designated as having Canada Land Inventory capability classes one to four, was prohibited. Once the Agricultural Land Reserves were designated, land within the Reserves was to be retained for agricultural use unless specific permission was granted by the Agricultural Land Commission (Manning, 1983).

The Land Commission Act has been received with mixed reactions. Farmers in the Reserve have credited the legislation with removing speculative pressures and increasing the security of their way of life. Developers, however, have cited the Act as a barrier to urban development as the Act restricted the supply of land for development

which increased urban housing prices between 1973 and 1975 (Manning and Eddy, 1978). Since its initial enactment, however, the Land Commission Act has been weakened by several amendments. In 1977, the newly elected Social Credit government removed the Commission's authority to establish land banks, green belts and parks which, along with preserving agricultural land, were included among the initial objectives of the Commission. Amendments also made the appeal process easier for applicants who wished, to remove land from the A.L.R., to appeal a negative decision made by the Commission.

In June of 1988, the Act was amended by Order-In-Council #1141 to allow golf courses, club houses and pro shops in the Reserves. The rationale for the amendment was never made clear by the Social Credit government. This change, however, generated considerable controversy and public outcry (see, for example: Loewen, 1991; Miller, 1990; Pynn 1990). Golf proponents and developers intensified their focus on agricultural land as space for their growing industry, while many farmers and rural community residents protested the anticipated conversion of agricultural land and loss of rural character. The British Columbia Federation of Agriculture and several municipalities called for the Order-In-Council to be rescinded. In the ten years prior to the amendment, 72 proposals were made to the Agricultural Land Commission for golf courses and driving ranges in the Reserve. From 1988 until the Order-In-Council was rescinded, at least 180 proposals for development or extensions of golf courses were tabled by various municipalities. The large number of proposals generated concern amongst farmers, municipal planners and the Land Commission that golf course development in the

reserves did not uphold the objectives of the Act. Many observers/analysts argue that golf courses are not compatible with agriculture and should not be considered an allowable farm use (Argyle et al., 1991; Pynn, 1990; Surrey Planning and Development Services, 1990). As noted by the municipality of Surrey's Planning and Development Services:

> In the ALR, they (golf courses) permanently remove good agricultural land from food production, erode the agricultural nature of the area, introduce farm/non-farm conflicts and can be used to tempt governments to approve other 'ancillary' non-farm uses..." (Surrey Planning and Development Services, 1990:i).

In November 1991, the newly elected New Democratic government of British Columbia followed through with an election promise to rescind the 1988 Order-In-Council. A moratorium was placed on 181 proposed golf course developments in the Agricultural Land Reserve pending the completion of a review of all applications. By April of 1992, the review was completed and the Golf Course Development Moratorium Act was introduced. One hundred and fifteen projects were allowed to proceed by Cabinet. Of these projects, forty-one had virtually been completed and thirty-two were found to have limited negative impact on agriculture. The remaining 42 projects were exempted by Cabinet on the condition that each must have been substantially completed within the subsequent twenty-four months while transfers of ownership were restricted during that period. Prior to the 1988 Order-in-Council, the Commission approved approximately 64 percent of the golf course proposals it received.

Despite the approval of a relatively large number of projects, the pressure for more golf course development in the A.L.R. is continuing. Public decision-makers and other

interested parties, have limited information about the implications that potential and actual golf course development may have for farming operations in the A.L.R. The Agricultural Land Commission does not have formal processess for obtaining information thus it relies on informal feedback communicated to its staff. The Commission also collects imformation through reviews and surveys conducted by other agencies and Ministries although these instruments tend to be "narrow in their treatment of Commission and A.L.R. issues (Auditor General of British Columbia, 1994:22). The provincial legislation regarding golf course development has been changed twice in the last three years without the consultation of farm operators. Regional and municipal reports (see, for example Argyle et al., 1991; Surrey Planning and Development Services, 1990) list various potential results of golf course development while the attitudes and the level of contributions of the primary agricultural land resource users are unclear or not apparent. In particular, it is not known whether farmers perceive golf course development as a threat to their industry or whether they consider it to be a compatible land use. Since farmers, as owners and operators, are the primary decision makers as to whether to continue farming, their attitudes toward their changing environment need to be explored in order to appreciate the evolving land use patterns in the urban periphery (Moran, 1979 in Ilbery, 1986). The compatibility of existing golf courses and farming operations needs to be examined, from the perspective of farmers, in order to identify the potential implications of proposed golf courses. The impacts of golf course development may well be viewed by farm operators as detrimental to the farming community. If this is the case than decisions and legislation regarding golf courses in the A.L.R. may be in conflict with

the Commission's goals to preserve agricultural land and to encourage the maintainance of farms. The most practical means of discovering the impacts of legislation on farming operations was to collect data at the individual property unit where most land use decisions are made (Manning and Eddy, 1978). This information should provide planners and legislators with a better basis on which to make policy decisions about alternative land uses in the Agricultural Land Reserve.

1.2 Purpose of the Study

The purpose of this study is to investigate the implications for farming that farm operators associate with golf course development in British Columbia's Agricultural Land Reserves.

The specific objectives are:

1. To review the literature on land use change and conflict in the Canadian urban fringe

2. To review golf course development in British Columbia's A.L.R. and to document the number and location of proposals in the study areas

3. To discuss the environmental, economic and social issues associated with golf course development in the A.L.R.

4. To investigate farm operators' awareness of golf course development in the

A.L.R., and to identify their concerns

1.3 Outline of the Thesis

This thesis is organized into five chapters. Chapter 2 reviews land use issues in the urban fringe, with a focus upon the loss of agricultural land, golf course development and provincial legislation in British Columbia. Chapter 3 describes the conceptual framework and methodology adopted in this study to investigate farmers' attitudes and concerns. The results of the study are outlined in Chapter 4. A summary and conclusions are provided in Chapter 5.

Chapter 2

LAND USE CHANGE AT THE URBAN FRINGE

A large body of literature exists under the general heading of "urban fringe research" ranging from factors causing changes in land prices to the movement of farm labour to non-farm employment and the development of part-time farming. Much of this literature, however, deals with urbanization and the resulting urban encroachment into the city's countryside and the impacts of urban growth on farming. This chapter examines the implications that agricultural land conversions have for farming operations in the lands surrounding Canada's urban centres. A specific focus is given to the Agricultural Land Reserves of British Columbia and the issue of golf course development within the Reserves. This review sets the context for the present investigation.

2.1 Urbanization and Agricultural Land

From 1950 to 1985, the proportion of the world's population living in urban areas grew from 29 percent to 41 percent. While 72 percent of the population of the more developed regions live in urban areas, this proportion is expected to increase marginally

compared to "a significant and rapid urbanization" in the coming decades in the less developed regions of the world where currently 32 percent of the population reside in urban areas (United Nations, 1989:4). Most of the land "needed to support expanding populations" will be found "in the countryside currently surrounding cities in most countries (Bryant, et al., 1982). Population growth, urbanization and the needs of the existing population are "responsible for the non-agricultural use" of approximately 200 million hectares between 1975 and 2000 and 60 percent of this total is from the cropland base (Pierce, 1990:107). For example, in China, the world's most populous country, agricultural land "represents the major source of land for urban development" (Pierce, 1990:105). In the developed world the process of urbanization which is changing the face and character of the countryside, has been fuelled by an "increased demand for housing" and a "demand for housing beyond the confines of the urban area" as society as a whole has experienced "growing affluence" (Robinson, 1990:27).

During its relatively short history as a nation, Canada has experienced high rates of urbanization. Population increased six-fold between Confederation and 1971 while the urban population grew by a factor of twenty-five during the same period (Gertler and Crowley, 1977). By 1976, fifty-five percent of the population resided in twenty-three Census Metropolitan Areas (Neimanis, 1979) and by 1990, almost sixty-one percent lived in twenty-five settlements of 100,000 or more (Statistics Canada, 1990). In Canada as well as in most nations, urbanization adversely affects agriculture directly through conversion of farmland to other uses and indirectly by exerting "additional pressures upon remaining farmers once incompatible land uses locate in a farming area" (Runka, 1993).

The direct conversion of agricultural land to urban uses has generated considerable controversy over its potential impact on food production capacity (see, for example, Keating, 1986; Mooney, 1990; Pierce, 1990). The process of urban expansion, which reduces the agricultural land base may affect a nation's ability to feed future generations adequately (Williams and Pohl, 1987). The urban-agricultural competition for land may be more significant in northern latitude nations such as Canada, Sweden and (former) USSR since production possibilities are limited by soil and climate resources (Pierce, 1990). Some authors believe that within the next few decades, industrialized countries like Canada could experience food shortages which have already plagued some income poor developing countries (see, for example, Williams and Pohl, 1987; Pierce, 1990). Emerging middle-income countries such as South Korea and Taiwan have dramatically increased food importing as consumption has outstripped production (Mellor and Johnston, 1984 in Pierce, 1990). In Canada, this concern is heightened by the fact that a large proportion of limited, high quality agricultural land is located near urban centres (Warren et al., 1989; McCuaig and Manning, 1982). An estimated ten percent of Canada's 10 million square kilometres is suitable for agriculture (Pierce and Thie, 1981), and only one-half of one percent is classed as prime agricultural land (McCuaig and Manning, 1982). Furthermore, more than 55 percent of Canada's good agricultural land (classes 1, 2 and 3 of the Canada Land Inventory soil capability classification for agriculture) lies within a 161 kilometre radius of all of its census metropolitan areas (urban centres with a population over 100,000) (Neimanis, 1979). Land inventory

research suggests that it may not be the quantity of land being converted to urban uses which is critical, but the quality of the land lost and the implications for the future. Neimanis and McKechnie (1980) found that sixty-three percent of the land converted into urban uses is of high agricultural capability (classes 1, 2 and 3).

In addition to the direct conversion of agricultural land, several conflicts in the use and management of land have arisen as a result of the intrusion of urban activities into rural areas. Along with its traditional activities such as agriculture, the city's countryside provides the support base for a variety of functions and activities tied into the city, such as residential development and the production of commodities (Bryant and Coppack, 1991). It is also the area in which 'urbanites' pursue a wide range of outdoor leisure and recreation activities, be it in public facilities such as regional parks, or private ones such as equestrian clubs. In the developed world, the reductions in the numbers of hours in the work week since the turn of the century as well as growing affluence and personal mobility have increased leisure time which in turn places demands on the countryside. Increasingly, "people's leisure time is being used in a space-extensive way" (Robinson, 1990:260). Many researchers believe that non-rural uses have had a detrimental effect on rural areas owing to their incompatibility with the agricultural industry. Effects are most pronounced in the rural lands surrounding urban centres.

The urban fringe has been defined as "a zone of rural countryside extending beyond the continuous suburbs and under active competition from urban land uses and activities" (Russwurm, 1971 in Martin, 1975). The land surrounding urban centres is a zone of competition and conflict between land use and land users (Troughton, 1981).

Land use problems in the urban fringe are numerous, complex and interrelated. Russwurm (1977) suggests that one broad class of problems can be labelled 'land use activity conflicts' which are generated by what is known as urban sprawl or ribbon and scattered development (Bryant et al., 1982). This occurs when irregular patches of urban land uses have advanced from the city. Other problems are classed as land conversion difficulties which are primarily caused by the "wavelike spread of continuous subdivision at the edge of our cities" (Bryant et al., 1982:35). Land speculation, land fragmentation and rising land values are all associated with this process. These issues are related to changing patterns of land ownership and the competition this involves in the real estate market. The market allocation process views land as a commodity which is converted to a use which gives the highest monetary value depending on demand-supply interactions (Bryant et al., 1982; Russwurm, 1977). The monetary value of land tends to decrease with distance from the city. The value placed on urban land use versus agricultural use is greater near urban areas. Features of land allocation which reflect the short-term nature of the economic allocation system are noted in (Bryant et al., 1982:28):

i. the mixture of sometimes incompatible land-use activities especially in the inner urban fringe, reflecting the lack of consideration of externalities in the short-term;

ii. land speculation with its short-term profit goal;

iii. the use of land for short-term individual benefits at the expense of longer term benefits to all, e.g. the development of large residential lots in scenic areas, restricting public access to such resources;

iv. perhaps most critical of all, the rising cost of land.

The above noted issues illustrate some of the impacts that urban influences and

land uses have on agricultural land in the fringe. Land fragmentation, for example, not only drives up the cost of land for farmers, it increases the uncertainty for farming viability. Fragmentation increases land values since smaller parcels are worth more per unit area while making future large scale land assemblies more difficult to acquire (Bryant et al., 1982). The process increases the number of land owners. Conflicts often develop between adjacent landowners with different and incompatible land uses (Argyle et al., 1991). Non-farm people often acquire land in the urban fringe in anticipation of future urban expansion. Land speculation and investment by non-agricultural and largely absentee interests jeopardizes the stability of agriculture by the "dependency on insecure land rental and by land fragmentation" (Bunce, 1985:177). This activity of the speculators may result in farmers reducing investment in their operations or abandoning production altogether. Alternatively, a farmer may decide to exhaust the land for short-term profit since urban development appears inevitable (Ilbery, 1985).

A related issue concerns public service provision versus taxation (see for example, Joseph and Smit, 1985). Demand for public services increases as residential development spreads onto the countryside. The revenues collected by the urban fringe municipalities from these new non-farm properties are not sufficient to meet the costs (Bryant and Russwurm, 1979). As the largest property owners, farmers (in some jurisdictions) tend to bear the tax burden while receiving fewer services than they pay for compared to their non-farm resident counterparts in the fringe (Russwurm, 1977). Higher land prices and taxes compound farmers' financial burdens. Increasing petroleum, fertilizer and machinery costs add to expenditures, while current farm commodity prices have been

insufficient to cover the costs of production (Framst, 1981 in McCuaig and Manning, 1982). The land in the city's countryside is more valuable for urban land uses than agricultural uses (Bryant et al., 1982); thus the incentive for farmers to sell land for alternative uses is great.

There is also a significant impact on the natural environment not only by the established rural uses but by the encroaching urban ones. The urban fringe absorbs most of the pollution resulting from the concentration of people and their activities in the urban centre (Bryant et al., 1982). An often neglected issue is the amenity value of the agricultural landscape (Bryant and Russwurm, 1979). Landscape amenity includes such things as biological diversity and 'rural character' and another important component to urban populations for everything from recreation to contrasting environments and scenic pleasures - open space. Landowners, farmers or others, cannot charge for these 'goods' so these amenities are not included in the market value of the land (Baden, 1984).

The problems associated with maintaining agricultural land not only involve intervening in urban conversion processes, they involve trying to establish the value of the land to society. Many of the non-monetary values people receive from agricultural uses and landscape are not recognized by society or appear unquantifiable such as the agricultural production system's interconnections with other sectors of the economy and the "long term value inherent in the potential of the resource" (Bryant and Russwurm, 1979:123). Although many economists and planners view action as unnecessary, calls for governmental intervention in the market and planning are linked to the condition that free markets fail to maximize social welfare in allocating land to competing uses (Rees, 1993;

Corbett, 1990; McDonald and Rickson, 1987). Bryant and Russwurm (1979) have found that the 'amenity issue' is a central force in the desire to preserve agricultural lands.

2.2 Protection of Agricultural Land

Traditionally, agricultural land protection has been connected with the concern for maintaining the limited base for food production. Urbanization of agricultural land is viewed as contributing to the loss of this limited resource base (Furuseth and Pierce, 1982). Public concern over the loss of agricultural land has produced a variety of programs and strategies by various governments in North America (Furuseth and Pierce, 1982). Programs vary from financial compensation strategies and right-to-farm legislation to acquisition of development rights and agricultural zoning (Nelson, 1990; Furuseth and Pierce, 1982). Many provincial and state tax policies have been implemented in order to give farmers "financial compensation" for continuing to farm - although research in North America has shown that tax incentives alone do not protect agricultural land from being converted (Furuseth and Pierce, 1982). A review of tax incentive and disincentive policies in the United States found that they do not "affect long term preservation of farmland" (Nelson, 1990:105). Land tenure programs which "seek to maintain the family farm and perpetuate the owner-operated rather than the tenant-operated farm" can be found in Manitoba, Saskatchewan and Alberta (Hoffman, 1982:539). Right-to-farm legislation is an attempt to shield farmers from nuisance complaints filed by urban residents. This type of legislation does not prevent a farmer from changing the use of their land. Nelson (1990) concluded that right-to-farm laws give short term protection

to farmers but the "legislation is structurally incapable of preventing nuisance complaints in the long term" (p.105). While the purchase or transfer of development rights programs are increasingly common in the United States, they may be considered inappropriate in Canada (Manning, 1983; Furuseth and Pierce, 1982). These programs compensate farmers while removing the right to future development which removes speculative value and preserves farmland (Mooney, 1990). Other programs are regulatory in nature and involve zoning and subdivision controls. Some governments have adopted policies involving both land controls and taxation (Furuseth and Pierce, 1982). Along with a farm tax reduction program, the Ontario government established a series of policy guidelines in 1978, although action was left in the hands of the municipalities (Jackson, 1985; Manning, 1983). While the Ontario program does not "categorically assure the preservation of agricultural land", it may be complimented for its flexibility which "may ensure appropriate allocation among competing uses" (Hoffman, 1982:545).

Perhaps one of the most significant strategies to date is British Columbia's Agricultural Land Commission Act since it has proved to have some success and has served as a primary model for later efforts (Wilson and Pierce, 1984; Furuseth and Pierce, 1982). The province of Quebec passed similar legislation, Bill 90 of 1978, although review has suggested that British Columbia's program has been more successful at directing non-agricultural development away from higher quality land. (Pierce and Seguin, 1993). There have been no new farmland preservation initiatives in Canada since the 1970's. The early 1980's saw slower rates of urbanization of agricultural land, increased competition for markets, declining crop prices and record levels of farm debt,

hence the loss of much of the popular appeal for agricultural land protection (Pierce and Seguin, 1993).

2.2.1 British Columbia's Agricultural Land Reserves

In British Columbia, it has been estimated that less than five percent of the province's land is suitable for agriculture, and that less than one tenth of one percent is prime (class one) agricultural land (British Columbia Environment and Land Use Committee, 1976). Although good farmland is a scare resource, agriculture is an important part of the provinces's economy and way of life (Wood, 1987). A mild climate, including the highest number of frost-free days in Canada, allows the agricultural land in the Lower Mainland and Vancouver Island to be highly productive while supporting a wide range of crops (Cowichan Valley Regional District, 1990). The province's population is generally urbanized with approximately fifty-five percent of its citizens living in the metropolitan regions of Vancouver and Victoria. More than two-thirds of British Columbians reside in the Lower Fraser Valley which along with the Okanagan Valley represent the province's most important agricultural production areas (Furuseth and Pierce, 1982). The province's Ministry of Government Services estimates, as of November 1994, the provincial population to be 3.668 million. British Columbia is likely to experience a doubling of population over the next thirty years. This has important implications for the agricultural industry, as the province's major urban growth centres are located on prime agricultural land (Pierce and Seguin, 1993).

Before 1974, it was estimated that British Columbia was losing 6,000 hectares of

prime agricultural land each year. So it is not surprising that British Columbia was the first province to "undertake provincial-scale zoning for the protection of agricultural land" (Manning, 1983:5). Initially, subdivision and non-farm use were prohibited on land taxed as farmland, zoned for agriculture by local governments or designated Canada Land Inventory capability classes one to four. Over the next few years, the Agricultural Land Reserves were created following review and consultation with local and regional government, Ministry of Agriculture and local farmers (Piece and Seguin, 1993). Figure 2.2 presents British Columbia's Agricultural Land Reserves. Land within the A.L.R. can not be subdivided or be converted to a use incompatible with agriculture unless permission was granted by the Land Commission, the administrative body. The Land Commission Act was the result of the British Columbia New Democratic Party's 1972 campaign platform to address the issue of farmland preservation. The original objectives of the Commission were (Manning and Eddy, 1978:11-12):

a) preserving agricultural land for farm use

b) encouraging the establishment and maintenance of family farms

c) preserving greenbelt land in and around urban areas

d) preserving land banks for urban and industrial development

e) preserving parkland for recreational use

The Commission did not have zoning powers for the preservation of green belt land, land bank land, or parkland, but it could meet these objectives through direct acquisition. After the implementation of the Land Commission Act (1973), the foundation of the Land Commission and the designation of the Agricultural Land Reserves (A.L.R.), studies

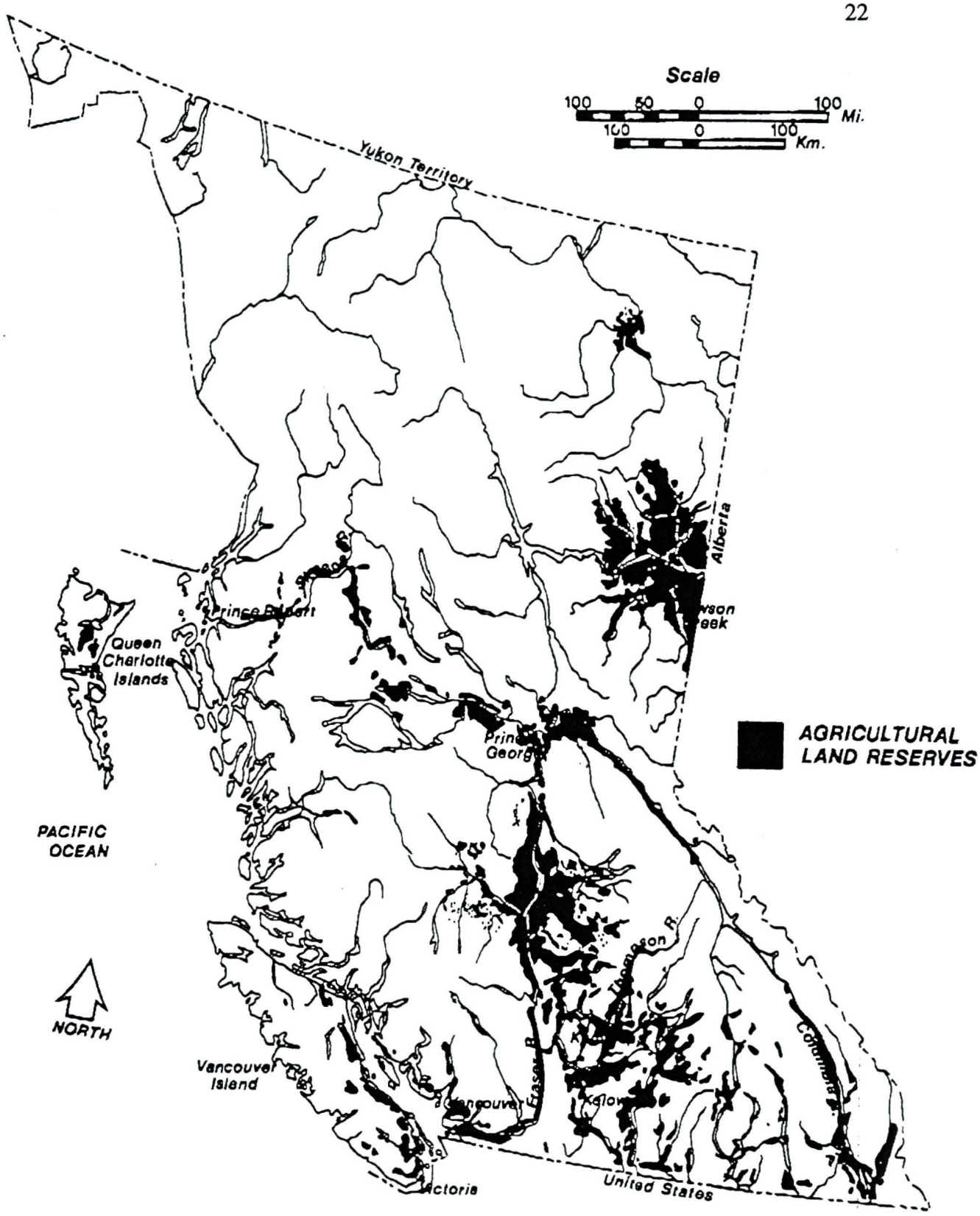

Figure 2.1: Agricultural Land Reserves of British Columbia
Source: Agricultural Land Commission, 1995.

found that "the trend towards non-agricultural land uses had been largely arrested" for land in the reserves which included "eighty percent of the province's land with cropping capability" (Manning and Eddy, 1978:91). However, Furuseth and Pierce (1982:76) found that

> one-third of removed land was Canada Land Inventory classes one to three (prime land) with the removal rate for prime land increasing during the five year study period.

The Act allowed individual landowners to petition for the removal of land from the reserve, for subdivision or for non-farm use. These petitions must be made to the Provincial Land Commission whose powers included "zoning and regulatory controls over agricultural resources and the A.L.R." (Furuseth and Pierce, 1982:74). Applications by governments are made to the Lieutenant-Governor in Council following a public hearing. When considering applications for exclusions of land from the A.L.R., the Land Commission's primary concerns are the capability or potential productivity of the land and the suitability or compatibility of the proposed change (Wilson and Pierce, 1984). A major difference between previous farm zoning policies and this Act is that "the designation of Land Reserves supersedes all other land planning and zoning decisions" (Furuseth and Pierce, 1982:74). Land use decision making is based on physical criteria, the quality of the land for agriculture, instead of the value of the land use in a free market.

The Land Commission Act has had different impacts depending upon the vantage point adopted. For developers, the Act has been cited as a barrier to urban development. For farmers in the A.L.R., there has been the removal of speculative pressures and

subsequently an increase in security for their way of life (Manning and Eddy, 1978). Previous studies have found that eighty percent of rural landowners supported the A.L.R.'s in principle although many have specific criticisms, particularly for the implementation methods (Manning and Eddy, 1978; Furuseth and Pierce, 1982). Other criticisms focus on the considerable constraints that have been placed on land use. Farmers who wish to retire cannot reap the monetary benefits of selling the land for urban uses. Zoning policies, such as the A.L.R., do not guarantee the land's use since owners may choose to leave their land vacant. Planners are also finding a distortion of the traditional pattern of urban expansion which was based on urban rather that agricultural needs (Wilson and Pierce, 1984). The Commission does not have formal processes for obtaining views on its policies and practices. A 1993 survey of farmers carried out by the Ministry of Agriculture, Fisheries and Food contained only two questions about the A.L.R. (Auditor General, 1994).

In 1977, the Social Credit government removed the Commission's authority to establish land banks, green belts and parks. It also renamed the act the Agricultural Land Commission Act to reflect the narrower focus of the Commission (Wilson and Pierce, 1984). The Commission's authority was also compromised by the allowance of appeals to the Minister of Environment for negative decisions made by the Commission. However, as of September 1993, the role of Cabinet and its Environment and Land Use Committee in A.L.R. decisions was almost entirely eliminated (ALR Advisory, 1994). Despite the positive aspects of the initiative, subsequent changes to the legislation and continuing removals from the reserve can and may be undoing the real potential of this

province-wide zoning system (Manning, 1983). Pierce and Seguin (1993) suggest that farmland preservation programs will have to shift to "a far broader mandate which attempts to balance the numerous and often conflicting values associated with rural land" (p. 308). While no model exists for such a program, Pierce and Seguin (1993) submit along with formally held regional planning powers that "consideration could be given to resurrecting a version of the original Land Commission Act in B.C." (p.308).

2.2.2 Order-in-Council #1141/88: Golf Courses as Outright Uses

The latest focus of concern for the integrity of the Act and the agricultural land base resulted from the 1988 Order-in-Council #1141/88. The Order-in-Council removed the ability of the Agricultural Land Commission to refuse golf course facilities, including club houses and pro shops, within the A.L.R. Golf courses were outright uses in the A.L.R. prior to 1978. The power to decide whether a golf course would be allowed rested only with the municipal councils although the Commission could still place conditions on proposals. Since this change in regulations, the agricultural land base has become, for the most part, the exclusive focus for new golf course proposals. This focus has been predominantly on high capability agricultural land (Argyle et al., 1991:104). Since June of 1988,

> developers across B.C. have applied for more than 110 golf courses, driving ranges and pitch-and-putt operations affecting about 4,000 hectares (Pynn, 1990)

By the fall of 1991, the number of applications totalled over 180. During this golf 'rush', several municipalities and regional districts scrambled to develop policies and guidelines

to deal with the onslaught of proposals while calling for the Order-in-Council to be rescinded. In the spring of 1991 the Greater Vancouver Regional District issued its own study on locational criteria for golf course development. Despite the actions taken by some local governments, the Agricultural Land Commission (1990) reported an alarming randomness in the proposed locations of facilities. The Commission cited that it appeared to be the "norm" for golf courses to be proposed for prime agricultural land as well as for areas which had received millions of dollars in public funds for agricultural infrastructure improvements (Agricultural Land Commission, 1990).

Within a month of being elected on October 4, 1991, in British Columbia, the New Democratic government rescinded the Order-In-Council which allowed golf courses to be built in the Reserves without the Commission's approval. A moratorium was placed on proposals for new facilities and alterations to existing ones, as well as golf courses currently under construction while the Agricultural Land Commission reviewed all applications. In less than a month, the Commission released forty-one projects and by the year's end had freed twenty-six more. By May of 1992 the review was completed and the Golf Course Development Moratorium Act legislated the new government's actions. Only 60 of the 181 projects were rejected and notably, all but 3 of these applications were located in either the Lower Mainland, southern Vancouver Island or the Okanagan (Paterson, 1992). Forty-two of the developments that were released from the freeze, now face financial restrictions which should prevent 'turning of the property' or the project company for profit (Times-Colonist, 1992). The decisions, resulting from the review, were based on the agricultural quality of the land and whether or not the golf

course was substantially completed (Pynn, 1991). The later criteria applied to 79 projects. In the ten years prior to the 1988 Order-In-Council, the Commission approved sixty-four percent of golf course applications in the Agricultural Land Reserve. Although land in the A.L.R. is reasonably cheap and relatively easy to assemble owing to a limited number of owners, the Steering Committee Members of the Golf Industry Opportunities in B.C. report stated that the "golf industry does not advocate the need for golf courses on prime agricultural land" (International Sports Inc., 1993).

2.3 Golf Course Development

The recent drive for golf course development is fuelled by the popularity of the sport. In the United States, where more than one-half of the world's golf courses are located, the National Golf Foundation reports that facilities are at nearly 90 percent capacity which leaves little room for participation growth (Golf Market Today, 1991). Golf courses in the United States already cover an area larger than the states of Delaware and Rhode Island combined; the (American) National Golf Association predicts that about three new golf courses a week will be opened until at least the end of the decade (Grossman, 1993). Around the world the recent golf development boom has been fuelled by the attractive, large and expanding golf tourism market (International Sports Inc., 1993). Participation increases with age and income; the golfing population is expected to double by the year 2000 (Tourism Research Group, 1988). Although the majority of golfers are men, the industry is beginning to appreciate women as an untapped market and a vital part of golf's future growth (Tourism Research Group, 1988; Golf Market Today,

1991). Over the past five years, forty percent of all new golfers were women (International Sports Inc., 1993).

Various countries, particularly in the Asia-Pacific region, have been tapping into the expanding demand for golf by investing in the golf tourism market. Golf course resort complexes have been built in Australia, Thailand, Malaysia and even in China and Vietnam mostly for Japanese and western tourists (Rimmer, 1994; Economist, 1994a). The golf course development projects are often financed by foreign investors and are not targeted towards the domestic markets (Karp, 1992; Hiebert, 1992). In Canada, the province of British Columbia Ministry of Tourism has been researching the potential prospects of golf tourism with particular interest in the American market. American golfers outnumber skiers two to one and they spent 7.4 billion dollars on the sport in 1985 (Tourism Research Group, 1988). However, British Columbia's own residents comprise almost one-half of the tourism market so they "constitute a potentially important source of customers for golf experiences" (International Sports Inc., 1993:12) as do people from the rest of Canada particularly Alberta (Tourism Research Group, 1988).

Canadians are the most avid golfers in the world (Times-Colonist, 1991a; International Sports Inc., 1993). Canada's per capita participation rate was found to be about 21 percent while Japan's rate was reported to be 16.1 percent. The recent survey showed that 2.1 million Canadians are casual golfers and 1.4 million are labelled "core golfers" or people who played at least eight rounds during the last year (Times-Colonist, 1991a). A German magazine, Focus (1993), illustrates the Canadian enthusiasm for golf which (per capita) surpasses that of Japan and the United States as well as various other

western industrial nations (see Table 2.1). The Toronto area has more golf courses than any other major city in North America with the exception of San Diego (Deacon, 1994). Across Canada there are over 1,600 golf courses; forty percent of these facilities are private or semi-private although ninety percent or more of the golfers are public players (Loewen, 1991). Recently, many private facilities have gone public as the recession has decreased the number able or willing to pay enormous initiation fees (Deacon, 1994). In British Columbia, approximately eleven percent of the people over the age of twelve play, which is the highest rate of participation in Canada or the United States (Argyle et al., 1991). In the Lower Mainland, persons over forty, the fastest growing segment of the population, comprise the same age group that plays the most rounds of golf (Argyle et al., 1991). The Greater Vancouver Regional District's Project Team believes that twenty-four additional courses will be needed to meet recreational and tourist demand in the Lower Mainland by 1996. The region currently contains sixty-six courses while eight more had already been approved for construction as of December 31, 1990 (Argyle et al., 1991). The British Columbia Golf Association (1991) reports the National Golf Foundation of the United States' findings that one 18 hole public golf course is needed for every 25,000 persons thus the B.C.G.A. suggests that the Vancouver area is in need of more than 50 new public facilities. The average size of a regulation golf course ranges from 50 to 70 hectares which translates into 2500 to 3500 hectares if all were built.

2.3.1 Implications of Golf Course Development

A wide variety of impacts on societies and the environment are associated with

Table 2.1 National Golf Participation

	Golfers (millions)	Golf Courses	Population (millions)	Pop. per golf course	Percent of population who golf
Canada	3.9	1750	27	15400	14.44
Japan	12.4	1706	124	72700	10.00
USA	21.0	14000	251	17900	8.37
Scotland	0.2	423	5	11800	4.08
England	0.7	1512	49	32400	1.49
Germany	0.18	353	80	226600	0.23

Source: Focus (1993). "Eine Frage des Geldes". 18:117.

golf course development. In Asia, the golf course development boom has not been without its detractors. Concern over displaced farmers, water shortages and contamination, chemical use, forest destruction and the lack of benefits to local economies, led to a meeting of citizen groups throughout the Asia-Pacific region (Chatterjee, 1993; Wheat, 1993; Stix, 1994). The conference, sponsored by groups from Japan, Thailand and Malaysia, concluded with the launch of a "Global Anti-Golf Movement" to coordinate opposition to such development. The Movement has subsequently declared a 'world no golf year'. For many of the newly developing countries in the Asia-Pacific region, golf has become "a symbol of the lifestyle of emerging elites that threatens the livelihoods of traditional farmers" (Stix, 1994:86). While a golf course development may offer farmers employment and higher wages (Handley, 1990) these changes in traditional lifestyles and the movement of remaining villagers to the big cities "leads to the collapse of rural communities" (Chatterjee, 1993:52). For landless families, golf course consumption of agricultural land perpetuates their dilemmas (Handley, 1990; Hiebert, 1992). The land lost to golf course development is a concern in Hawaii since most of the state's residents are land-poor and Hawaii now imports three-quarters of its food (McCallum, 1995).

Another serious problem raised by golf course development is water supply. High water consumption is considered the greatest threat posed by golf course development in Asia (Wheat, 1993). An 18-hole golf course "consumes enough water to meet the daily needs of 2,000 families" (Chatterjee, 1993:52). Golf course developers in poorer countries are accused of stealing water from irrigation projects and exhausting supplies

needed for local agriculture (Economist, 1994a; Hiebert, 1992). Golf courses are watered in the outskirts of Harare, Zimbabwe while people are dying of thirst in Bulawayo (Raine in Wheat, 1993). The water supply issue is magnified in arid regions even in developed countries. Conflict has arisen in New Mexico where some golf courses "soak up more than a million gallons a day" (Grossman, 1993:90).

In Britain, golf course development is now seen as a financially rewarding alternative to farming (Ward, 1992; Marsden et al., 1993; Wheat, 1993). Groups such as the Country Landowners' Association now accept that "sport is the farm crop of the future" (Marsden et al., 1993:615). To landowners and developers, golf courses hold the potential for multiple uses of land such as housing, hotels and wildlife conservation (Marsden et al., 1993). However, the financial prospects of many proposed golf courses are "as marginal as the farming which once took place on the same land" (Tomlinson, 1991:42). Furthermore,

> the golf boom has become a frenzy and inadequate government regulation means it is endangering large swaths of British farmland, common land, countryside and historic parkland (Wheat, 1993)

In British Columbia, the Ministry of Tourism estimated that the revenue potential of golf is about fifty million dollars a year. Golf courses can be considered open space and can be used as a buffer between different land uses. As developments, they enhance land values; can be a catalyst for further development and have the potential to provide taxable income to various levels of government (Argyle et al., 1991; Miller, 1990). Nevertheless, questions have been raised as to whether golf courses, which are considered a recreational service for urbanites, should be permitted in the A.L.R. The issues raised

involve direct land use changes such as the loss of good agricultural land and indirect changes such as increasing land values of adjacent land and being the catalyst for further residential and commercial development (Surrey Planning and Development Services, 1990; Miller, 1990; Argyle et al., 1991). The Agricultural Land Commission (1990) states that "golf courses, despite their rural atmosphere, represent a fundamental land use change" in agricultural communities (p.1). At a 1993 Agricultural Land Commission Symposium, Gary Runka commented on what he described as the "ALR - golf course fiasco":

> Every time I fly over Barnston Island, the Nicomekl-Serpentine Valley of Surrey or Southeast Kelowna, I again despair at the actions of both the previous and the present government with respect to golf course use in the ALR, and mourn the impact those actions will continue to have on the ALR and the future of agriculture in this province (p.6).

With reference to the direct loss of agricultural land, it has long been suggested that golf course development does not irreversibly remove the agricultural potential of farmland (Bryant and Russwurm, 1979) but this is not realistic. The development industry "harbours no illusions about golf courses ever being converted back to farms" but the "myth persists at government levels" although the "loss of good farm land to golf course use is permanent..." (Surrey Planning and Development Services, 1990:3). The investment of at least five million dollars and the installation of irrigation and drainage systems, high grade soil and quality turf for any given course means there is little chance that the land will be converted back (Surrey Planning and Development Services, 1990).

Golf course development appears to have serious implications for farming operations. One of the impacts of golf courses is that they tend to raise land values. In

the United States, real estate analysts have found that property adjacent to a golf course is now among the most desirable on the market (Vancouver Sun, 1987). One Vancouver municipality forecast that the value of adjacent residential land is projected to increase by about thirty percent as a result of proximity to a golf course (Argyle et al., 1991:95). The capital gains available to farmers, by selling their land, can be irresistible. Land deemed for urban use has a higher monetary value than agricultural use (McDonald and Rickson, 1987). The other impacts for the farming community include: increased traffic, trespassing, complaints about farming operations, competition for limited water supplies and increased taxes due to urban services extension. Argyle et al. (1991:107) also note:

> fragmentation or isolation of parts of farm enterprises due to golf course development being used as justification for further application of ALR exclusion for further subdivision.

Even the degree of ancillary uses such as associated golf facilities, can greatly influence the degree of compatibility or conflict with adjacent land users (Argyle et al., 1991:103).

Another major implication of golf course development is its use as a key to further development. For the developer it may be used as "a design and marketing asset for the whole development" (Argyle et al., 1991:95). In Hawaii, golf courses have been typically built in tandem with resorts or luxury housing and a similar situation is developing in Thailand, Malaysia and the Philippines (Williams, 1994). Across Canada, seventy percent or more of the new golf courses are part of a residential development (Loewen, 1991). Many view golf course applications as large scale land speculation and there is "ample evidence to support the theory that golf courses have been transitional land uses" (Argyle et al., 1991:13). A real concern for regulating agencies and communities is "the notion

that a golf course is designed to fail so that a higher and better value land use can be justified" (Argyle et al., 1991:21).

The environmental impacts of golf course development have further fuelled public concern locally and around the world. Golf Market Today (1991) reports that "environmental obstacles" are one of a number of major barriers to golf course construction in all Scandinavian countries. Austria, Switzerland, Germany and Belgium have even stricter regulations (Williams, 1994). Concerns include excessive water, pesticide and fertilizer use, increased traffic and noise and the destruction of wildlife habitat (Argyle et al., 1991). For example, the municipality of Surrey (Planning and Development Services, 1990) expresses concern for migratory birds who use the flooded farmers' fields in the winter. The policy paper reports that a golf course "would not likely be compatible with the habitat needs of the birds" (Surrey Planning and Development Services, 1990:50). Concern is also raised over the use of pesticides and fertilizers on golf turf, since run-off from the land drains into the local rivers which are already in poor quality due to farming operations. An impact assessment for a proposed golf course in Central Saanich reported that:

> the potential exists for loss of habitat and accidental poisoning of waterfowl which traditionally utilize the area in winter time (Boydell Consultants, 1990)

Agriculture is certainly not benign, but many developers argue that golf course development is not detrimental to wildlife (see, for example, Massachusets Golf Association; Brentwood Lakes Golf Course Ltd.; International Sport Inc., 1993). The Environmental Protection Bureau of the New York Attorney General's Office found in

a survey of Long Island golf courses a total of 50,000 pounds (22,500 kilograms) of active ingredients which included 21 different herbicides and 20 different fungicides. The average application rate of pesticides per treated acre (0.4 hectares) per year was nearly seven times the amount used on agricultural land (Grossmann, 1993). The Department of Environmental Conservation in New York has documented numerous cases of birds killed by golf course insecticide applications. The chemical applications are harmful to humans as well. For example, in a town on the Japanese island of Hokkaido, the use of chemicals on seven golf courses has been blamed for cases found among golfers, caddies and local residents of allergic rhinitis, chronic rashes, and asthma (Chatterjee, 1993). In Canada, golf courses are required to post signs when applying chemicals but the image of grounds keepers in respiratory masks, protective white suits and gloves during applications must be disconcerting to golfers (Rubenstein, 1993). Faced with this tarnished image in the age of environmental concern, the golf industry in the United States has begun to consult with the Environmental Protection Agency and participate in studies (Grossmann, 1993). Some courses are going partly organic and a course in Michigan was built in the tradition of British courses by leaving the majority of the terrain untouched (Stix, 1994). Ironically, the golf boom and television coverage have elevated the popularity of the highly manicured, American style of courses in Britain (Wheat, 1993). The American/Japanese style of "destroy and rebuild" is the one of choice in the Asian-Pacific region as well (Stix, 1994; Williams, 1994).

2.4 Overview and Information Needs

The growing popularity of golf has created a demand for more facilities. In British Columbia, a change to the Agricultural Land Commission Act encouraged the use of the Agricultural Land Reserves as a location for golf courses. The 1988 Order-in-Council, rescinded in the fall of 1991, allowed golf courses in the A.L.R. without scrutiny while intensifying such development on agricultural lands. Along with the direct conversion of agricultural land, golf course development appears to have many implications for farming operations and the agricultural community in the urban fringe.

Golf course development appears to be an example of an urban land use sprawling into the fringe with the familiar associated land use changes, problems and conflicts. Real and perceived concerns and implications exist for farmers, planners and communities when faced with golf course proposals. Conservation of farmland is being weighed against an increasing demand for land for the development of golf facilities. Unfortunately, little is known about what the implications golf course development may have on farming in lands surrounding urban centres. There is a dearth of published research on the topic. This lack of knowledge may be reflected in the variety of municipal strategies and regulations pertaining to golf courses which suggests a lack of information on and understanding of the problem. It has also been argued that municipalities farther away from an urban centre are more likely to be less restrictive in their zoning requirements (Argyle et al., 1991). This lack of information compounds the planning difficulties since golf course developers are focusing on rural areas to meet the growing demands of an expanding golfing population (G.V.R.D., 1991:102).

To understand the implications of urban development for agriculture, there is a need to investigate how specific individuals involved in agriculture respond to golf course development since it is the farm operators and owners who ultimately decide whether to continue farming or to give way to urban development. Therefore, research is needed at the individual farm level in order to improve the knowledge and understanding about the relative importance of urban pressures and development and the various resulting impacts (Bryant, 1986). Since every individual does not perceive his\her environment in the same way, it is important to recognize and attempt to document the different perceptions and attitudes. For planners and legislators, it is important to understand what concerns and impacts farmers associate with golf course development and whether planning controls and farmland protection strategies are perceived as effective, needed or beneficial.

Since it is the farmer who ultimately decides to continue operating in these changing circumstances, it is the farmer's concerns which need to be identified. This information should enable planners and legislators to make more informed decisions about these land uses The following chapter presents the methodology adopted in this study to solicit the attitudes of farmers towards golf course development in the Agricultural Land Reserves.

Chapter 3

Conceptual Framework and Methodology

This chapter presents the conceptual framework and describes the methodology used in this study. It also reviews the selection of the study areas.

3.1 Natural Resource Management and Managers' Attitudes

Our planet's environment and natural resources face compounding stress from the ever increasing demands of the world's expanding population and the pollution generated by rising living standards (World Commission on Environment and Development, 1987). Even resources which are renewable can and have been overexploited. For example, in many regions in the world food production has already been expanded to marginal lands (World Commission, 1987). Food needs of the future may be met by expanded development but "development alone without proper resource management will only trade off the future for the present" (Pierce, 1990:). Resource management may be defined as

> a process or system of decision making whereby resource use or conservation policies and practices are devised and resources are allocated over space and time (Johnston, 1988:410).

Geographers have long had an interest in natural resource analysis and management (Mitchell, 1989). Their contribution to this process has concentrated on resource distribution; management, development and conservation in particular regions; and the nature of influences upon resource decision making (Sewell and Burton, 1967 in Mitchell, 1989). There is therefore, a continuing focus on the attitudes and behaviour of resource managers. These decision-makers develop a perceived view of reality, often related to past experiences (Ilbery, 1985), which shapes their behaviour. In a hierarchical model of the relationship between attitude and behaviour, attitude is at the highest level while action tendencies along with specific beliefs and feelings are at the lowest level (Ajzen, 1988). Attitudes may be defined as "mental states, organized through experience, that induce a predisposition to respond consistently to a given object" (Allport, 1935 in Kiecolt, 1988:383). Attitudes are dispositions to respond favourably or unfavourably to an object, person, institution or event; attitudes may only be inferred from observable cues such as an individual's behaviour, verbal or nonverbal (Ajzen, 1988).

In human geography, the behavioral approach is based on the argument that:

> an understanding of the spatial distribution and pattern of man-made (sic) phenomena on the earth's surface rests upon knowledge of the decisions and behaviours which influence the arrangement of the phenomena ... (Golledge et al., 1972:59 in Walmsley and Lewis, 1984)

In order to understand the distribution of farming activities and appreciate land use patterns in the urban fringe, farmers' attitudes and responses to the threat of urban development need to be considered (Ilbery, 1986). It is the individual farmer who makes the ultimate decision, based on their attitudes concerning the conditions, to either continue

operating or refrain from farming activities. Furthermore, this information can be beneficial to land use planners since there can be significant differences in the knowledge, experience and attitudes of resource managers and the public whether it be specific interest groups or the general populous (Mitchell, 1989). Land use planning has various roles which "provide a framework for the decisions of landowners and land users" (Cloke, 1989:6) and these roles include:

1. to discourage certain uses which would be incompatible with existing uses
2. to achieve greater efficiency in the use of land resources in the area
3. to reduce or eliminate certain hazards
4. to preserve or to protect desired elements of the existing environment (Held and Visser, 1984 in Cloke, 1989:6).

Modern planning "is applied to a full range of problems that arise in the public domain"; modern plans "rest on the democratic processes of decision-making" (Friedman, 1987:24). Considering the traditional principles of democracy, it has been suggested that officials need to consider citizens' preferences in formulating public policy (Kamieniecki, 1982). In the past, social planners often neglected to consult the actual users or to consider the consequences of their actions (Gardner, 1976). In addition to the aforementioned, other arguments for public involvement in resource decision-making include the identification of a greater range of management alternatives as well as planners' general ignorance of citizen preferences (Erickson, 1980). This variance in knowledge and attitudes among the public and government gives strength to the argument that greater citizen participation or public consultation is needed in resource management (Mitchell, 1989). Few decisions are made and/or implemented without some form of consultation be it be expert advice,

customer perceptions or public opinions (Patterson et al., 1992).

Public Participation may be defined as:

> a process through which an agency makes it possible for those most likely to be affected by its decisions, to be fully aware of, influential, and actively involved in the decision-making process (Tyler, 1979:17).

According to Warner (1988), there are three basic objectives for public involvement and they are:

1. Expanding the amount and usefulness of information available to both planners and publics
2. Providing a fuller opportunity for publics to affect and influence planning recommendations
3. Development of public support for planning recommendations.

A wide range of strategies exist for obtaining public preferences. These techniques include surveys, public opinion polls, referendums, public hearings and meetings, 1-800 numbers, electronic town meetings, advisory groups, workshops, participant observation, statements from interest groups and studies of perceptions and attitudes (Sewell, 1971; Burton, 1979; Dandekar, 1988; Patterson et al., 1992). While each method has a number of advantages and disadvantages, the most successful programs are based on a combination of methods (British Columbia Ministry of Lands, Parks and Housing, 1984). Public meetings and hearings are the most frequently used methods although mutual understanding and consensus are rare and the view of the general public is difficult to evaluate (Erickson, 1980; British Columbia Ministry of Land, Parks and Housing, 1984). Since they only allow respondents to indicate a yes or no answer to an issue, referendums are seldom used in land use planning. Some discussion has also been

raised about when public participation fits into the planning process. It has been suggested that the entire process is most effective when the public is involved at the initial stages (Smith, 1982; British Columbia Ministry of Lands, Parks and Housing, 1984). Overall, a government agency must consider that:

> effective public involvement requires that a manager know the preferences of individuals and groups affected by a decision, consider these preferences and other factors in making a decision... (Erickson, 1980:227)

Considering the resources available within a limited budget, and the objectives of the study, a survey is the most effective means of determining farmers' attitudes toward golf courses in the A.L.R. A survey is an "efficient method of obtaining information from people by asking questions" while it allows "a relatively small number of people to represent a much larger population" through random sampling procedures (Schuman and Presser, 1981).

3.2 Survey Research

Survey research involves the application of questionnaires or interviews to the target population (Singleton et al., 1988). It is unlikely that there is any sector of public policy or of the social sciences in which survey research methodology has not been applied (Fowler, 1993; Dijkstra and van der Zouwen, 1982). As a primary data collection tool, survey research is a long established method of geographic field research (Sheskin, 1985). Many geographic problems require the collection of data which is not part of the visible landscape (Lounsbury and Aldrich, 1979). For example, survey research is necessitated by the need for data "expressed by human beings about themselves and their

views on other phenomena" (Stoddard, 1982:133). A survey may collect data on a variety of phenomena ranging from demographic characteristics, economic conditions and activities to opinions and attitudes (Gardner, 1976). Surveys have some important advantages over other public participation techniques. They help reveal the preferences of the 'silent majority' unlike public hearings which usually reveal the views of a few individuals (Erickson, 1980; Sewell, 1971). Survey questionnaires are also relatively inexpensive compared to other public participation methods and lend themselves to quantifiable evaluation which are key reasons why they were utilized in this study (British Columbia Ministry of Lands, Parks, and Housing, 1984).

There are also several limitations associated with surveys. Surveys have a low degree of two-way communication hence a low degree of information exchange and learning (British Columbia Ministry of Lands, Parks and Housing, 1984). Surveys are obtrusions into a person's life so individuals may respond differently than how they might if they were unaware of the structured situation. In a sense, surveys are simply "responses evoked in an artificial situation contrived by the researcher" (Fowler, 1993:68) Responses to questions regarding an individual's own characteristics are self-reported so they may not be the undiluted truth. There is the problem of nonresponse in which information is not collected from individuals who are not home or do not agree to be interviewed thus the researcher risks "distortions of the representativeness of the sample" (Backstrom and Hursh-Cesar, 1981). The preceding issues are all related to the problem of error in surveys. It is improbable that any survey is error free either in design or in resulting data (Fowler, 1993; Alwin, 1977). Error is derived from survey questions that

are unreliable and invalid. Reliability refers to the provision of "consistent measures in comparable situations" and validity refers to the extent to which "an answer given is a true measure and means what the researcher wants or expects it to mean" (Fowler, 1993:69). While it is possible to check the responses to objective questions through independent observation, there is no objective way of validating the answers to questions dealing with subjective states, feelings, attitudes and opinions (Fowler, 1993).

The focus of much research is at the individual farm level in order to solicit farmers' attitudes and perceptions of the farming environment (Ilbery, 1985) and to improve understanding of the process by which urban development impacts on agriculture (Bryant, 1986). The use of survey questionnaires aids in meeting this goal. Since an objective of this study is to identify farm operators' concerns for golf course development, it appears that interviews with individual farmers would be appropriate.

> The joint trends of improved explanation and behaviourial studies have necessitated the use of personal questionnaires, which have become an important source of information in agricultural geography (Ilbery, 1985:23).

This technique contributes to resource management, in this case land use planning, by involving the actual users (Gardner, 1976) while enlightening the planners to the concerns, knowledge and needs of the public (Mitchell, 1989; Erickson, 1980; Sewell, 1971). For example, in the urban fringe of Auckland, New Zealand, planners have to make definite attempts to protect farmland since this would reflect current attitudes as it was found that the strong farm lobby had influenced the direction of urban growth and maintained particular parcels of land in agricultural production (Moran, 1979 in Ilbery, 1985).

3.3 Study Areas

This study is concerned with the attitudes and concerns of farmers operating in the fringe of urban centres in British Columbia. The areas for field investigation were chosen within the Capital Regional District (Victoria) and the Greater Vancouver Regional District. These regions contain some of the most important agricultural production areas in the province while providing living space for over half the province's population (Furuseth and Pierce, 1982). These regions are also under the heaviest pressure for golf course development. Specific municipalities in each of the regional districts were chosen to minimize cost and time and because of variation among municipal policies.

3.3.1 North Saanich and Central Saanich

The municipalities of North Saanich and Central Saanich make up the study area within the Capital Regional District (C.R.D.). They are located on the Saanich Peninsula, north of Victoria, on Vancouver Island. The District of North Saanich lies on the north most end of the Saanich Peninsula (see Figure 3.1). Only 9,645 of the 299,550 people who live in the C.R.D. reside in North Saanich. However, this area has experienced the highest population growth rate within the C.R.D. in the last five years, 33.1 percent, while the C.R.D.'s as a whole was 13.2 percent (Capital Regional District, 1992). This high growth rate has been attributed to three new subdivisions (Paterson, 1992). The Official Community Plan for the District of North Saanich (1989) notes that the area will experience further pressures to accommodate residential growth due to the

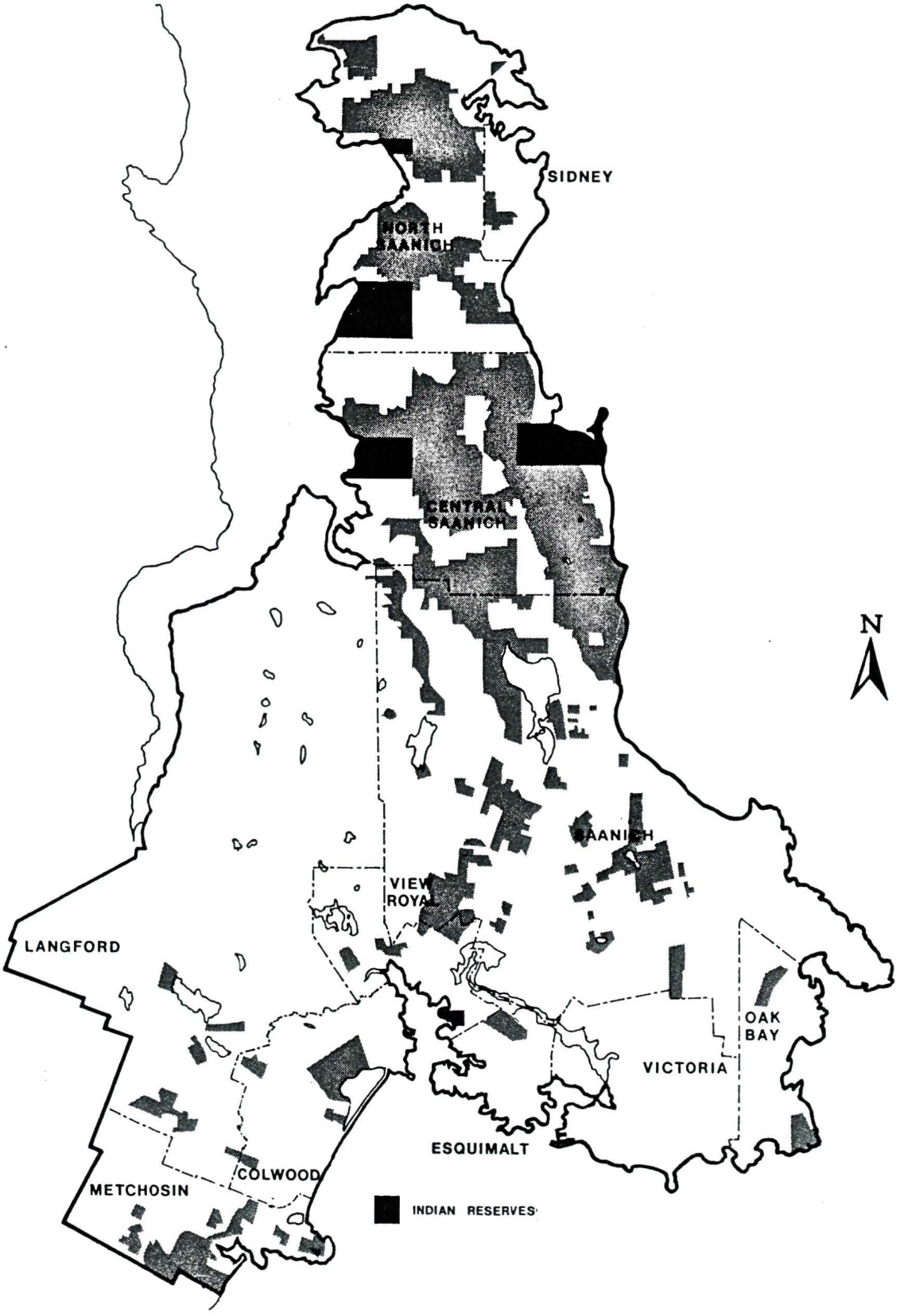

Figure 3.1: Agricultural Land Reserves of the C.R.D.
Source: British Columbia Provincial Capital Commission (1988)

attractiveness of the community, the growth of the Capital Region and the lack of developable land in other areas in the C.R.D.

Statistics Canada (1987) reports 78 farms within North Saanich covering 1,129 hectares of land. An estimated 1,400 hectares of land in the municipality are within the A.L.R. The boundaries of the A.L.R. in North Saanich have remained relatively unchanged over the past 10 to 15 years. Past experience has proved a strong level of support in the community for the retention of the A.L.R. lands (District of North Saanich, 1989:48). A primary goal of the North Saanich Plan is to support agricultural activities while an objective is to protect A.L.R. land.

> Policies are aimed at retaining the land base for current and potential agriculture, and reducing potential conflicts with non-farm adjacent uses (District of North Saanich, 1989:9).

Golf courses are a permitted use of land designated as "rural" in the Community Plan. Land in this designation is considered a transition zone between agricultural and residential uses. A.L.R. land may be included if it has low soil capability for agriculture. Referring to the 1988 Order-in-Council, which made golf courses an outright use of A.L.R. land, the Community Plan stated that this use (golf courses) "may be less acceptable from the North Saanich perspective" (1988:48).

North Saanich has two full size, 18-hole golf courses both of which are within the boundaries of the A.L.R. and on former farm land. Both golf courses predate the first Official Community Plan and the designation of the A.L.R.s. Glen Meadows, a private facility, was opened in 1965 and Ardmore, a public course, has existed since 1933 (Dawe, 1985). The locations of the golf courses and golf course proposals in North Saanich at

the time of the study are shown in Figure 3.2.

Central Saanich is located between the municipalities of North Saanich and Saanich. The population size is 13,684 while the growth rate for the previous five years was 19.3 percent (Capital Regional District, 1992). Statistics Canada (1986) reports that of the 854 farms in the C.R.D., 197 are within Central Saanich involving 2,130 hectares of land. Forty-two percent of the municipality's land base is devoted to agriculture as two-thirds of the A.L.R. is active farmland (District of Central Saanich, 1991). The strong support that the residents of Central Saanich express for the preservation of agricultural land is reflected as a goal of the Community Plan. Community Plan objectives include:

1. To support agricultural production and development of the agricultural industry in Central Saanich

2. To preserve lands with potential for agricultural production and to protect these areas from incompatible land areas.

Central Saanich contains one 'par 3' golf course. Sunshine Hills is a small five acre public course within the A.L.R. This municipality has a specific by-law for golf courses in the A.L.R. (no. 926). The locations of golf courses and golf course proposals in Central Saanich at the time of the study are found in Figure 3.2.

3.3.2. Surrey

Located in the southwestern corner of mainland British Columbia, Surrey is the largest municipality in area in the Greater Vancouver Regional District, is situated

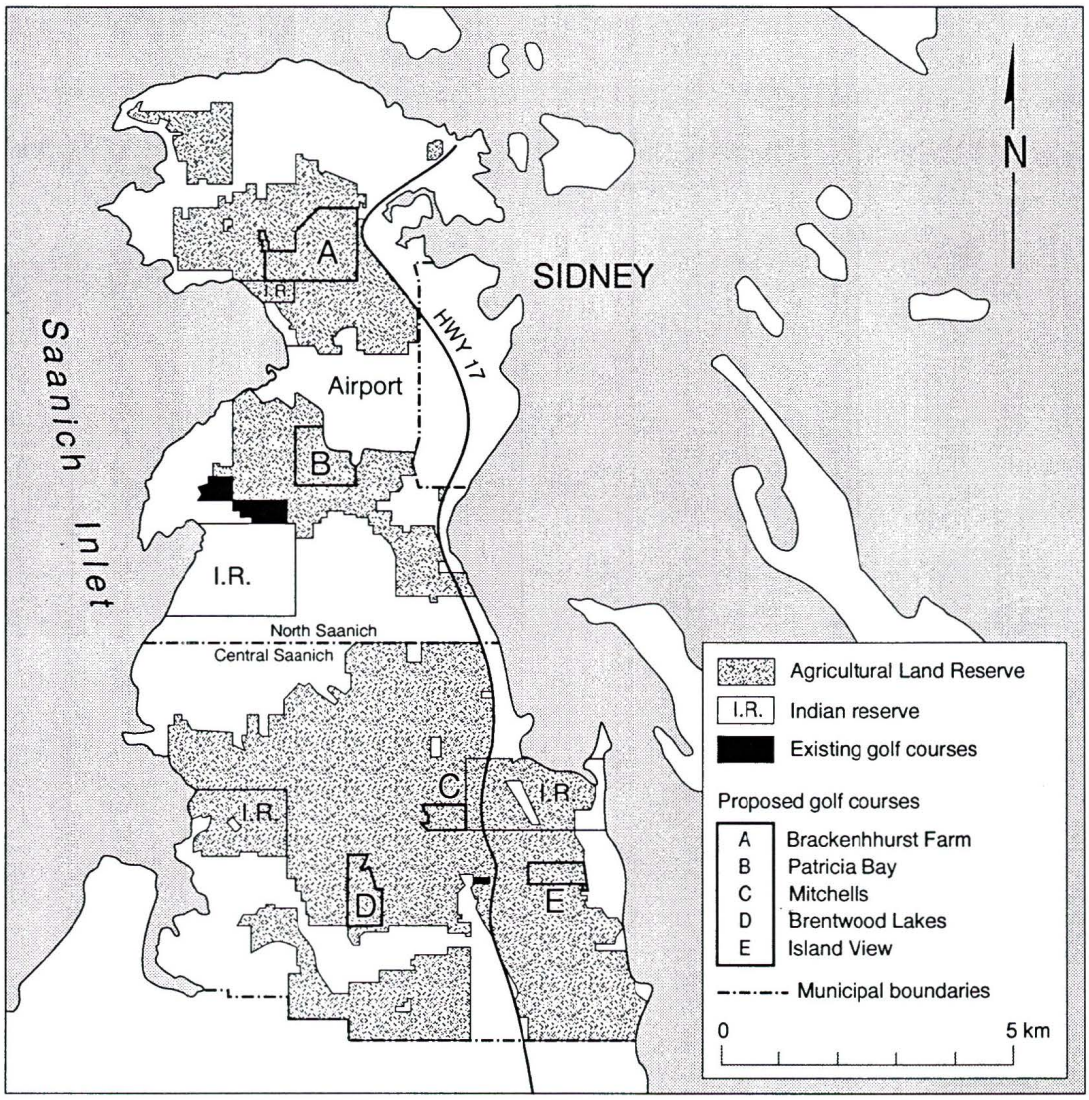

Figure 3.2: Golf Courses in North Saanich and Central Saanich

southeast of the city of Vancouver and is bordered by Washington State to the south (see Figure 3.3). Surrey has a population just over a quarter of a million people (1992). Surrey's population size is second only to Vancouver in the G.V.R.D. Surrey accounted for over thirty-nine percent of the regional growth from 1976 to 1981 and is expected to account for forty percent of the G.V.R.D.'s growth to the year 2001 (Surrey Planning and Development Services, 1986). The municipality of Surrey contains 700 of the 1,325 census farms located in the G.V.R.D. (Statistics Canada, 1987). Approximately thirty percent (9,308 hectares) of Surrey's land area is within the A.L.R. although not all of the land is presently farmed (Surrey Planning and Development Services, 1986). Surrey was selected as a study area because it is an example of high quality agricultural land under urban pressure (Manning and Eddy, 1978). As early as 1975, Evenden (in Everitt, 1981) reported that Surrey has experienced some of the most adverse effects of urban sprawl. The municipality maintains that its agricultural lands should be considered a regional resource. Official policy is concerned with preserving and protecting this resource from encroachment of non-agricultural uses and encouraging farming (Surrey Planning and Development Services, 1986). The pressure for golf course development within Surrey's A.L.R., particularly in the wake of the 1988 Order-in-Council, led the municipality to produce a report on location and development policies for golf courses. The report discourages the development of courses in the A.L.R. A year later, the G.V.R.D. (Argyle et al., 1991) produced a report which stated that golf courses should be encouraged as part of major residential developments in this region. At the time of the study, Surrey has ten golf courses. Five of the facilities are full size, 18-hole golf courses within the

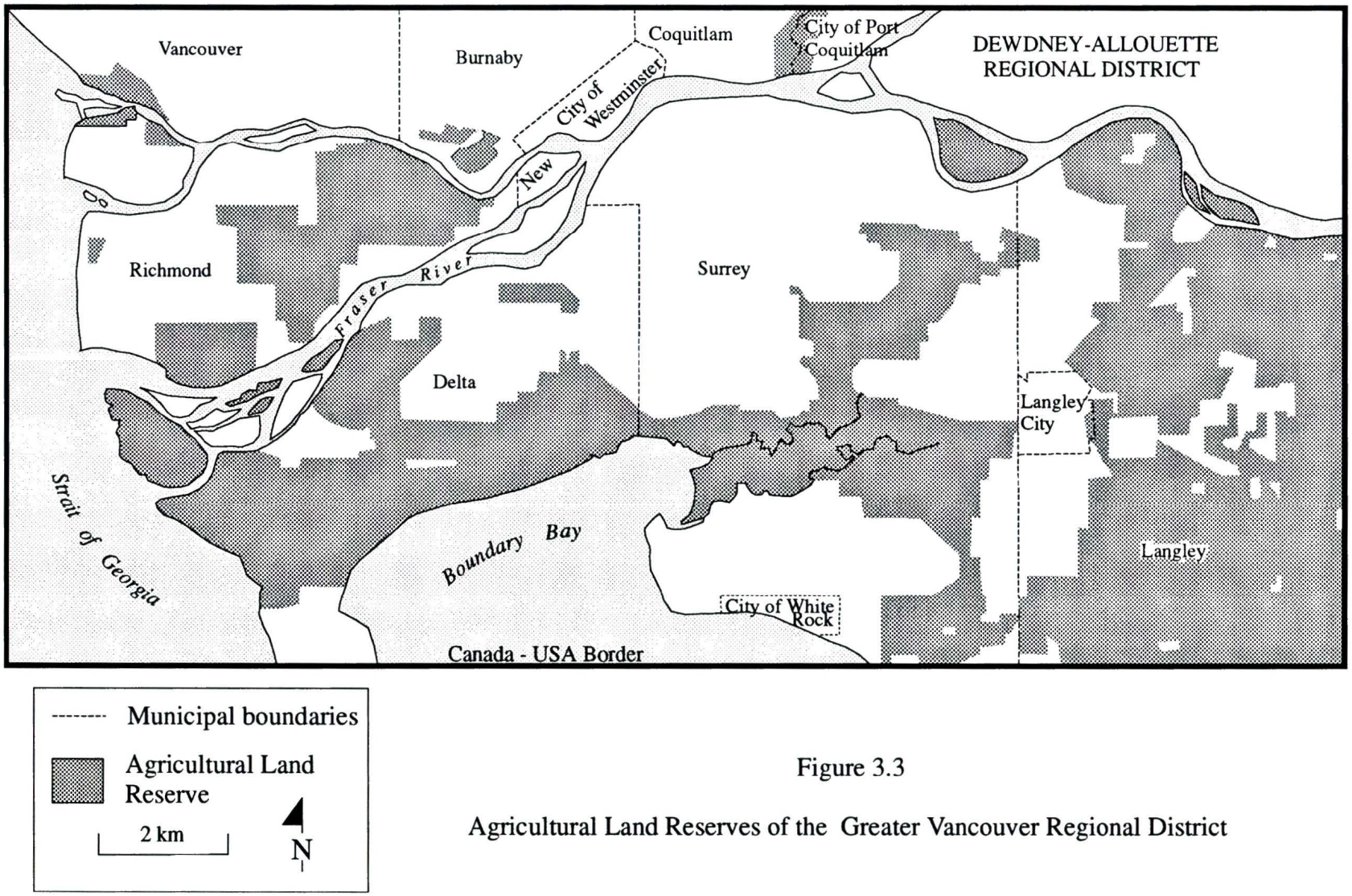

Figure 3.3

Agricultural Land Reserves of the Greater Vancouver Regional District

A.L.R. although four of them predate the designation. The remaining five are shorter "par three" courses. One of these golf courses was built in the A.L.R while two others border the Reserve. The locations of golf courses and golf course proposals in Surrey at the time of the study is illustrated in Figure 3.4.

3.4 Sample Selection

The population of interest for this study was farm operators. Acquiring a list of this target population proved to be difficult. Some agencies that have a complete list of farm operators, such as the provincial District Agriculturalists, would not provide the information for reasons of privacy. Therefore, a list of farmers had to be developed by searching through Provincial Electoral District lists of registered voters. Addresses of persons listed their occupation as "farmer", "farm manager", "farm", "dairy farmer", or "herdsman" were recorded. Addresses were only recorded once, even if more than one "farmer" resided at a given address. Some disadvantages are associated with this type of list. The list is not comprehensive. For instance, only farmers who had registered to vote and only farmers who resided on the property they operated would be included. Individuals who farmed but had another form of employment may have registered under their non-farm job description.

A September 1991 list of registered voters in the "Saanich North and the Islands" represented North and Central Saanich. This list produced 89 addresses. Additional addresses (17) were compiled from a 1992 Direct Farm Marketing Association Produce Guide to make a total of 106. This list was reduced to 86 since 20 addresses were not

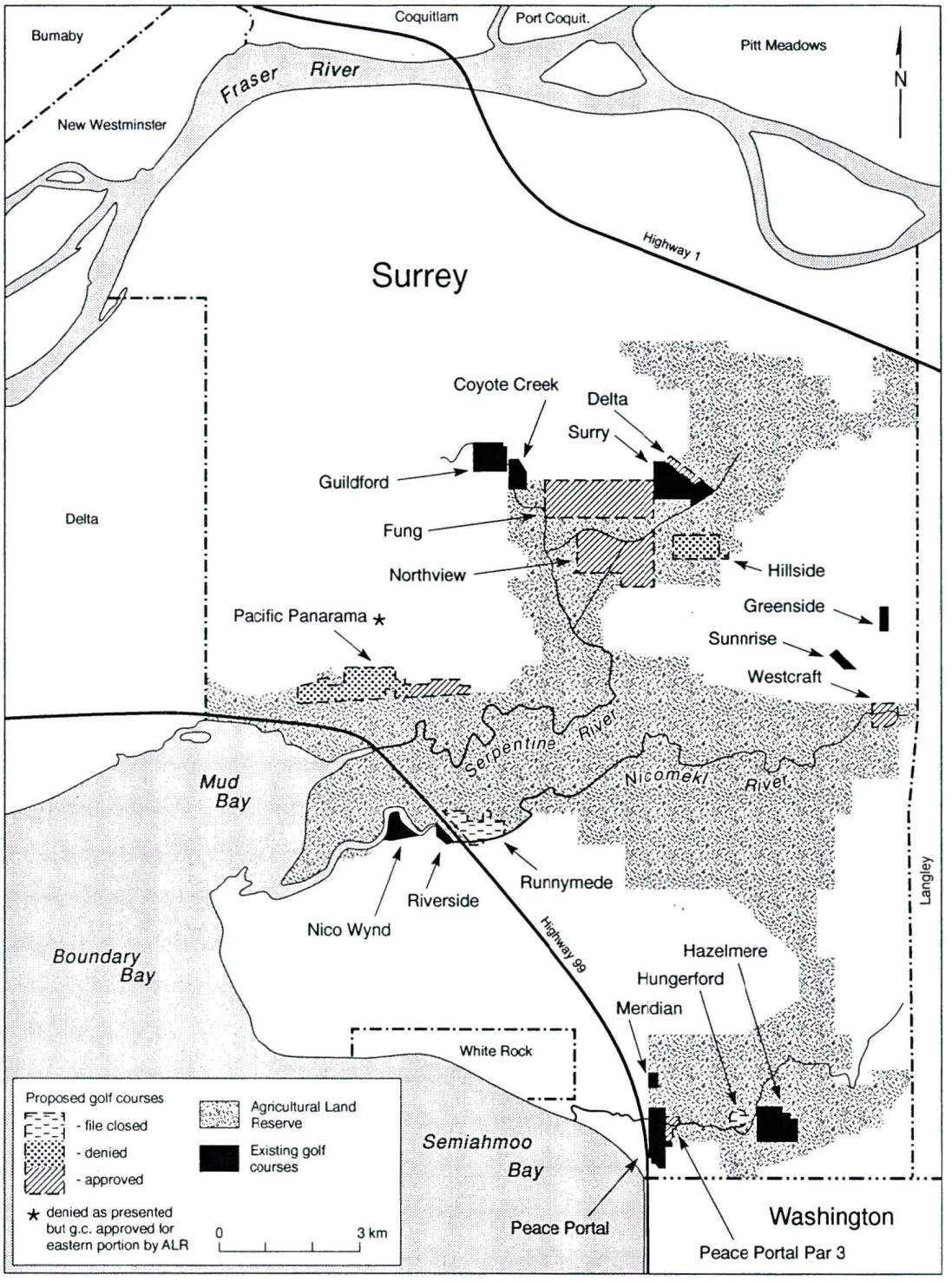

Figure 3.4: Golf Courses in Surrey
Source: Surrey Planning and Development Services (1990)

located within A.L.R.

Surrey is divided into 5 Electoral Districts, 2 of which contain almost all of the A.L.R. "Surrey-Cloverdale" and "Surrey-Newton" lists from March 1990 were used to produce a pool of 213 addresses. This list was reduced to 110 because almost half of the addresses were not in the A.L.R. The wide disparity between the registered voters list totals (e.g. 213 farmers in Surrey) and the census farm totals (e.g. 700 census farms in Surrey) given earlier may be attributed to a number of factors including several of those listed above. Statistics Canada's loose definition of a farm may also contribute to this difference. Publications for the 1986 census define a census farm as:

> a farm, ranch or other agricultural holding with sales of agricultural products during past 12 months of 250 dollars or more (Statistics Canada, 1987:vii).

The definition in the 1991 census omits the sales income level but includes a list of products ranging from crops to maple syrup.

3.5 Questionnaire Design

Other studies which elicited the opinion of farmers towards golf course development in agricultural areas could not be found. In order to identify the issues related to golf courses in the A.L.R. and to generate appropriate questions for the questionnaire, a pre-survey was conducted. The pre-survey is presented in Appendix 1. The pre-survey also served as an exploratory device due to the lack of information on this issue (Backstrom and Hursh-Cesar, 1981). The exercise lowers the risk of missing critical elements which may occur when a study is solely based on preconceptions (Babbie,1973).

An open-ended questionnaire format was used for the pre-survey since this method provides a wide range of possible answers which aids in developing a closed response questionnaire (Lounsbury and Aldrich, 1979). Open-ended questions are useful when the researcher has "limited knowledge about the kinds of answers a question is likely to provoke" and when a researcher is "interested in what people will volunteer before specific prompting about a subject" (Backstrom and Hursh-Cesar, 1981:128). Potential respondents were selected using systematic random sampling. This type of sampling is equivalent in precision to simple random sampling but it is "mechanically easier to create" (Fowler, 1993:14). Systematic random sampling is not appropriate if the sample population is ordered by some characteristic or pattern. In two evenings in April of 1992, five farm operators were interviewed in person in Surrey and in one evening in May of 1992, five farmers were interviewed in person on the Saanich Peninsula. All ten respondents were aware of the golf course issue but only one respondent was operating beside a golf course. Respondents were asked why and why not golf courses should be allowed in the A.L.R. The farmers were asked to comment on the current government policy pertaining to golf courses in the A.L.R. General comments were made about the cost of farming, the lack of profit, and public and government (municipal and provincial) support. The analysis of the results of the pre-survey helped generate questions for the close-ended survey.

3.6 Survey Instrument

The survey instrument adopted a closed-ended question format. This format was

chosen because it provides greater uniformity of responses thus making processing and analysis easier (Babbie, 1973). Many respondents give "relatively rare answers that are not analytically useful" when a completely open-ended question is asked (Fowler, 1993:83). The respondents, however, were encouraged to make comments about the points raised in the questionnaire, so unstructured responses were recorded. Some criticisms regarding close-ended question formats are that they gloss over important details and set "a few response alternatives to complicated issues" which creates flawed data (Backstrom and Hursh-Cesar, 1981:132). The initial interviews were considered a pre-test of the clarity and utility of the questionnaire. It was found that questions dealing with implications of golf course development in section B-3 of the questionnaire were too confusing. These questions asked respondents to select whether the given implications were good or bad. The use of "good" and "bad" made the question too ambiguous. The rest of the interviews were conducted with the omission of those questions. No other changes were made to the survey instrument or process.

The survey was conducted from August to November of 1992. Systematic random sampling was used to select potential respondents. Due to farm operators' busy and unpredictable schedules, appointments, with the exception of one respondent, were not made. As with the pre-survey, the intent was to use a face-to-face interview approach since it produces a better response rate than mailed questionnaires (Singleton, 1988; Sheskin, 1985). While face-to-face interviews are more costly and time consuming compared to other modes of interviewing such as telephoning, they are the "most effective way of enlisting cooperation for most populations" (Fowler, 1993:64). Ilbery (1985)

reports that farm-based questionnaires can be more successful if the researcher meets face-to-face with the farmer. Farmers are often reluctant to spend any free time they may have filling out more forms (Ilbery, 1985). The person-to-person method allows the interviewer to clarify ambiguous answers, control the question sequence and probe for additional details (Lounsbury and Aldrich, 1979). As well, questionnaire completion is not dependent on the literacy level of the respondents.

Respondents were read statements about the A.L.R., the effects of golf courses in agricultural areas and the legislation dealing with this issue. These questions were developed with the aid of the results of the pre-survey. In order to obtain the intensity of their attitudes towards the statements, they were asked to respond in a five-category Likert scale format (Backstrom and Hursh-Cesar, 1981). Likert scales may contain six categories which would eliminate neutral alternative. However, this format may force a respondent to choose a category that does not represent their truly neutral opinion (Sheskin, 1985). The latter part of the questionnaire contained questions about the descriptive characteristics of the farm operator and the farm operation. The purposes for collecting this data were to allow for a general description of the respondents and to help identify groups which might hold different attitudes (Sheskin, 1985). The questionnaire is presented in Appendix 2.

As with the pre-survey, respondents were systematically randomly selected. Thirty-three respondents were interviewed on the spot, 16 filled out the questionnaires at another time thus the questionnaires were later picked up and 8 farmers in Surrey were left a questionnaire with a stamped envelope. Four of the mail questionnaires were

returned and two farmers who were left questionnaires for pick up voluntarily returned them by mail. In total 56 completed questionnaires were collected. One of the questionnaires, given to a sampled individual in Central Saanich, was not included in the analysis because it was filled out for a farm in a non study area region. Of the 55 used, 26 are from Surrey, 20 from Central Saanich and 9 from North Saanich. The non response rate was much higher in Surrey than in North and Central Saanich. In Surrey, there were 5 refusals, 9 not home, 3 inaccessible properties, 5 people retired, and 9 no longer farming. Of the 9 no longer farming, one farmer had just sold the property for development and another had a proposal pending for golf course development (this proposal was rejected). In North Saanich, there was 1 refusal, 1 not home and 1 no longer farming and had sold the property to the adjacent farm. In Central Saanich, there was 4 refusals, one of which was a farmer who had taken a questionnaire and later decided not to participate, 1 was retired and 5 were not home. One of the addresses on the list was on a property which was involved in a golf course proposal that had been rejected by the current municipal government despite much heated debate (see, for example: Davies, 1991; Lavers, 1991; Smith, 1991).

The response rate for the survey interviews appears relatively poor if all the non-respondents sampled are included in the calculations. However, a case may be made for not including those who are no longer members of the target population (Fowler, 1993). These are people who are retired or no longer farming. A lack of availability appeared high in Surrey where nine sampled were not home and three were on inaccessible properties. It is suggested that the problem of availability may have been decreased with

Table 3.1 Response Rates (in percent)

Study Area	All nonresponse	Target only*	Refusals only**
Surrey	45.6	60.5	83.9
North and Central Saanich	67.4	72.5	85.3
Total	55.0	66.3	84.6

* excludes those selected who were retired or no longer farming

** excludes those selected who were retired, no longer farming, not home or on inaccessible properties

advanced letters, phone calls and scheduled appointments for the interviews (Fowler, 1993). Nonresponse is a source of error in surveys and is potentially biasing; however, the effects are obscure since it is difficult to learn much about the nonrespondents (Fowler, 1993). The response rate in this survey was a problem in the sense that the list of potential respondents was relatively small so the lower the response rate the even smaller amount of collected data. The response rates are presented in Table 3.1.

3.7 Summary

This chapter has presented the conceptual framework and methodology utilized in this study. It has described the study areas and provided the reasons for their selections. A survey questionnaire was developed and implemented with the objective of eliciting the opinions of the primary resource managers, the farm operators, about golf courses in the A.L.R. As discussed in this chapter, a consultation of the actual users of the resource, the farmers, should result in a better understanding of the implications of golf course development on agricultural land. This should ultimately result in the better formulation of public policy regarding golf courses and the protection of agricultural land. The results of this investigation are presented in the following chapter.

Chapter 4

Results

This chapter presents the results obtained from the analysis of the survey data. Where appropriate, statistical analysis has been carried out on the questionnaire data in order to identify relationships between variables. In the latter part of this chapter, respondents' comments regarding other issues facing farmers in the A.L.R. not specifically investigated by this study are presented and briefly discussed.

4.1 Survey Analysis

The data for this study was obtained from a closed-ended questionnaire. In order to summarize this information, the results are first presented in frequency distributions. Additional comments made by various respondents in reaction to the questions are also included. To assist interpretation the results are categorized into topic areas. The variables which represent farm and farm operator characteristics are presented first.

4.1.1 Responses - Univariate Analysis

Background

The questionnaire contained several background questions in order to obtain a general socio-economic profile of the respondents as well as a context for interpreting the more detailed study of attitudes towards golf courses and the A.L.R. These responses are presented in Table 4.1. The majority of respondents (78.2%) are the joint owner or joint family owner of their farming operation. The average age of the respondents was 47.8 years. The 1991 Canada Census found that the average age of agricultural population to be 44.1 years (Harrison and Cloutier, 1995). That study also found that the average age for farmers is getting older and that the farming population, on average, is older than the general population. The majority of respondents purchased their properties and these properties generally had been held by the families for more than one generation. Only three respondents are tenants. Just over half of the respondents are full time farmers while one-quarter were part-time operators. As only farmers whose properties were located in the A.L.R were surveyed this result was expected. Hobby farmers make up slightly over one-tenth of the respondents while the remainder are semi-retired. The vast majority of respondents are men although many partners sat in on the interviews. Twenty-five percent of farmers in Canada are women and eighty-four percent of these women operate with their partner (Harrison and Cloutier, 1995). The average property size of farm operations in this survey was 89.9 acres (36 hectares). Among respondents, fruit and vegetable production is the most common, followed by dairy and fodder. These results are typical for the regions surveyed, as dairy, mixed farming, intensive berry and horticulture crops are the specialties found in the Lower Fraser Valley and southeast Vancouver Island (Wood, 1987).

The first set of questions that farmers were asked to respond to pertained to the A.L.R. It was considered important to make queries about their general attitudes towards the A.L.R, since unfavourable attitudes towards agricultural land preservation and the supporting legislation, may be reflected in support for golf courses in the A.L.R. Some comparisons can be made with Manning and Eddy's (1978) survey which was carried out in 1977. This study, produced by and for the Lands Directorate of Environment Canada as part of the Land Use in Canada series, was based on interviews with over 800 randomly selected landholders throughout British Columbia. The purpose was to analyze the impacts of the A.L.R. legislation in terms of preserving farm land and maintaining viable farm units. This study found eighty percent of respondents (landholders), from twelve regions across the province, in favour of the A.L.R legislation (Manning and Eddy, 1978).

Respondents were asked to choose the category that best represented their level of agreement with each of the five statements pertaining to the A.L.R (see Table 4.2). The scale ranged from strongly agree to strongly disagree. Most respondents strongly agreed or agreed with the statement that 'the A.L.R is needed to protect agricultural land from urban development'. However, several respondents alluded to their concern for the financial viability of farms in the A.L.R. One farmer suggested that the A.L.R would not be needed if farmers could make a "good" living. Another respondent, who disagreed with the first question, stated that the A.L.R as such does not protect anything and that only a "decent" return on the food that is produced, protects farmland. The 1977 study by Manning and Eddy, which included landowners who did not consider agriculture to

Table 4.1 Farm and Farm Operator Characteristics

Type of Tenure

Type	Freq. (%)
principal owner	9 (16.4)
joint owner	16 (29.1)
joint family owner	27 (49.1)
tenant	3 (5.5)
Total	55 (100)

Type of Land Acquisition

Type	Freq. (%)
purchased	40 (76.9)
inherited	7 (13.5)
purchased\ inherited	5 (9.6)
Total	52* (100)

* excluding 3 tenant farmers

Type of Farmer

Type	Freq. (%)
full-time	31 (56.4)
part-time	14 (25.5)
hobby	6 (10.9)
semi-retired	4 (7.3)
Total	55 (100)

Type of Farm Production

Type	Freq. (%)
dairy	14 (25.5)
fruit\vegetable	22 (40.0)
livestock	11 (20.0)
fodder	2 (3.6)
mixed	4 (7.3)
other	2 (3.6)
Total	55 (100)

	N	Mean	S.D.	Min.	Max.
Length of time as primary operator at current location (years)	53	16.5	12.6	1	48
Age of operator (years)	55	47.8*	N/A	N/A	N/A
Size of farm operation (acres)	55	89.9	119.2	2	500

* weighted mean

be their principal or secondary occupation, found that farmers (full-time and part-time) held slightly more positive attitudes towards the A.L.R compared to other occupational groups. Almost twenty percent of property owners in the 1977 study "stated categorically that the legislation was needed to protect agricultural land" (p. 69). Some of the strongest support in 1977 was found from property owners in Saanich and Surrey as well as Vedder and Grand Forks.

All but two respondents strongly agreed or agreed with the statement that 'the A.L.R legislation alone cannot keep farmers in business'. One farmer suggested that if people wanted to protect farmland than they should "pay" landowners the "going rate" for their land as if they subdivided it. Another respondent stated that the A.L.R legislation "doesn't at all" keep farmers in business. These results mirror the findings of Manning and Eddy (1978) over a decade and a half ago when they concluded that "A.L.R.s have had a small favourable impact for some (farmers), but are not by themselves a sufficient means to ensure the long-term viability of the agricultural sector" (p. 93).

The next statement referred to the quality of land in the A.L.R. Upon initial designation, the A.L.R. consisted of approximately eighty percent of the province's land with cropping capability (Canada Land Inventory classes 1 though 4) and some range land (Manning and Eddy, 1978). Just over one-half of the land in the A.L.R. has been identified as class 1, 2, 3, or 4 (Auditor General, 1994). A majority disagreed or strongly disagreed with the third statement that 'all the land in the A.L.R. is of good quality for agriculture'. Many alluded to poor quality land in the A.L.R. and one respondent suggested that the inclusion of this land degrades the image of the good land in the

A.L.R. The Manning and Eddy (1978) study did not pose this specific question. However, they did compare opinions of A.L.R. legislation to perceptions of land capability and found that "those who perceive their land to be poor tend to be more opposed to the A.L.R.s than those who perceive their land to be good" (p. 72). In that study, twenty percent of the properties surveyed within the A.L.R. were reported to be predominantly of classes lower than Canada Land Inventory classes one to four. Of the properties surveyed outside the A.L.R., fifty-five percent were land with agricultural potential. Manning and Eddy (1978) concluded that these apparent anomalies reflected the "pre-1972 urban use of high quality land as well as the setting aside of some high quality land for future urban growth" (p. 46).

There was no clear agreement as to whether 'the Agricultural Land Commission's mandate concerning land use in the A.L.R. is too restrictive'. Almost as many respondents disagreed as agreed while 24.1% remained neutral. The respondents who agreed with the statement tended to be more demonstrative. One such farmer indicated that the Commission "controls" you while another respondent suggested that the Commission is getting more restrictive.

Just over half of the respondents disagreed or strongly disagreed with the statement that the 'A.L.R. helps keep farmers farming'. One farmer stated that "politicians don't keep farmers farming". Another farmer, while disagreeing with the question, did comment that the A.L.R. does take "some pressure" off farmers. Almost one-fifth of the respondents were neutral about the statement although one such farmer suggested that the A.L.R. helps the "poor quality" farmers but not the "good" farmers.

Another stated that the A.L.R. does "keep developers at bay". On the other hand, slightly under thirty percent of the respondents strongly agreed or agreed that the 'A.L.R. helps keep farmers farming'. One farmer suggested that the A.L.R. "tips the balance" for many which allows them to remain in operation. Another respondent said that the statement should read that the 'A.L.R. "makes" farmers farm'. These results are similar to Manning and Eddy's (1977) study which was carried out in the early history of the A.L.R. legislation when they concluded that the A.L.R.s "do not constitute a total program to ensure the maintenance of viable farming activity on high quality agricultural land ..." (p. 95).

In order to get some measure of respondent participation in the A.L.R. application process for exclusions and subdivisions of land in the Reserves, respondents were also asked whether they had ever attended a public hearing concerning A.L.R. applications. Close to half of the respondents (43.6%) had attended at least one hearing and some respondents commented that the hearings involved their own applications. One such farmer was very bitter about the outcome and answered "yes" to wanting to see the A.L.R. dissolved. Gillis (1980) using Manning and Eddy's (1978) data base, found no significant relationship between attempts to vary property designation or subdivide and levels of support for the A.L.R.

The final question referring specifically to the A.L.R. asked whether the respondent wanted the 'A.L.R.s to be dissolved'. This question elicited a wide range of responses. The majority responded "no" although many had misgivings and commented on the need for changes. One respondent related initial opposition to the legislation but

now feels that they "wouldn't be here if it wasn't for it (A.L.R.)". Another respondent commented on the necessity of the A.L.R. but said that it's "not done right". A small number of respondents elected to answer "yes" and "no" to the question. One of these respondents leans towards dissolution but reflected on the needs of future people and a dependency on the United States for food. One of the respondents who supported the dissolution of the A.L.R. stated flatly that "farming was dead on the (Saanich) Peninsula".

Generally, the majority of respondents appear to see a need for the A.L.R to protect agricultural land, although they are concerned about the quality of land presently within it. Respondents also made it clear that farm land protection programs alone do not help keep people farming the land. Several other sources agree with this assessment (see, for example, Mooney, 1990). Other legislation concerning loans, loan guarantees and income protection accompanied the passage of the Provincial Land Commission Act and subsequent programs and legislation have been undertaken. However, this study only asked farmers for their opinions concerning the A.L.C. legislation. Unlike the majority of agricultural land protection policies and programs in North America, the Agricultural Land Commission Act is comprehensive and mandatory thus farmers who want to continue to operate in the A.L.R. must participate. The farmers surveyed appear to be evenly divided on the degree of restrictiveness of land use in the A.L.R. As with the 'degree of restrictiveness' question, and the question whether the A.L.R. helps keep farmers farming, there was a relatively high proportion of neutrality. The results pertaining to the A.L.R. in this small study further support the findings in Manning and Eddy's (1977) province-wide study.

Table 4.2 Levels of Agreement: A.L.R.

Statement	**Strongly Agree** freq.(%)	**Agree** freq.(%)	**Neutral** freq.(%)	**Disagree** freq.(%)	**Strongly Disagree** freq. (%)
1. A.L.R. is needed to protect agricultural land from urban development	22 (40.0)	25 (45.5)	3 (5.5)	4 (7.3)	1 (1.8)
2. The A.L.R. legislation alone cannot keep farmers in business	27 (49.1)	26 (47.3)	1 (1.8)	0 (0.0)	1 (1.8)
3. All the land in the A.L.R. is of good quality for agriculture	2 (3.6)	4 (7.3)	7 (12.7)	27 (49.1)	15 (27.3)
4. The A.L.C.'s mandate concerning land use in the A.L.R. is too restrictive *	5 (9.3)	16 (29.6)	13 (24.1)	14 (25.9)	6 (11.1)
5. The A.L.R. helps keep farmers farming *	3 (5.6)	13 (24.1)	10 (18.5)	18 (33.3)	10 (18.5)

* one case missing

Table 4.3 Dissolution of the A.L.R

Response	Freq. (%)
yes	8 (15.1)
no	42 (79.2)
yes and no	3 (5.7)
[missing]	[2]
Total	53 (100)

Golf Course Issues

Before respondents were queried about the development of golf courses in the A.L.R., they were asked if they were 'aware of the recent controversy concerning golf course development in the A.L.R.'. Only three of the respondents (5.5%) answered 'no'. This means, then, that the respondents are generally in a good position to comment on the issue.

Farmers were given a list of thirteen impacts that could be associated with golf course development in the A.L.R. and were asked to comment on the likelihood of each occurring. The list was developed chiefly from impacts cited in the Greater Vancouver Regional District's study (Argyle et al., 1991), an Agricultural Land Commission article (1990) and the district of Surrey Planning and Development Services' (1990) report on golf course development. The response categories ranged from very likely to very unlikely. The results are presented in Table 4.4.

Most of the respondents thought it was likely or very likely that they would experience an 'increased volume of traffic on rural roads'. This finding supports statements made in the regional and district reports that golf course generated traffic on local roads "may disrupt farm operations by interfering with tractor and truck movement" (Surrey Planning and Development Services, 1990:25). One Surrey farmer commented, however, that the increase would only be seasonal and that the greatest traffic increase was from new subdivisions.

Concern exists globally over the impacts of golf course development on water supply (see for example Chatterjee, 1993; Wheat, 1993; Handley, 1990). Golf courses

have been known to contaminate supplies and to use large amounts of this finite resource to the detriment of other users. These concerns over water supply are echoed in the Agricultural Land Commission, G.V.R.D. and Surrey Planning and Development Services reports. A majority of respondents felt that 'conflicts over water supply' were likely or very likely. A number of farmers also added that it 'depends on your location and the area's supply'. One respondent commented that golf courses "can afford to pay more" for their supply. Another respondent reported that the "shortage of water on the Saanich Peninsula is a major problem" and suggested that "golf courses should have sufficient storage capacity to get them through the summer" in order to "not deprive nearby landowners". The Official Community Plans for Central Saanich (1991) and North Saanich (1989) do not mention to any significant water supply difficulties, although they do mention deficiencies for some areas' domestic and fire suppression uses due to low water pressure. This respondent also expressed concern for ground water contamination stating that golf courses "are huge users of herbicides and pesticides and fertilizers".

The respondents were queried about the issue of noise since the G.V.R.D. study had noted that "noise from the golf course activities" could impact on "adjacent livestock breeding" (Argyle et al., 1991:107). However, a study involving farmers in the rural-urban fringe of London, Ontario found that respondents did not perceive noise to be as important a disadvantage of being in the urban fringe as much as they considered trespassing and the rise in land values to be problems (Layton, 1981). The results were similar to Layton's (1981) findings as slightly more than one-half thought that more noise was unlikely while over one-quarter of the respondents chose 'neutral' as their answer.

As with the previous two statements, none of the respondents felt that it was 'very unlikely' for adjacent farm properties to experience more noise.

A slight majority thought that 'increased trespassing on adjacent farm properties' was likely or very likely. One Surrey farmer noted that with any development you have increased population which raised the amount of trespassing. Almost one quarter of the respondents felt that more trespassing was unlikely. A farmer noted in the G.V.R.D. study (Argyle et al., 1991) that trespassing was the result of golfers attempting to reclaim their balls, and that this activity often resulted in broken fences and damage to crops.

As with trespassing, it may be suggested that the increase in population accompanying development in agricultural areas would lead to more vandalism. This is not supported by the results of this study. There was no clear agreement as to whether 'increased vandalism on adjacent farm properties' was likely or unlikely and one quarter of the respondents were neutral. However, two farmers in Surrey whose properties are adjacent to golf courses mentioned many problems associated with golf balls landing on their properties. Golf balls often cause difficulties by ending up in equipment and cows. As well as eating the golf balls, the cows have been the shooting targets of golfers, reports the respondent who is adjacent to three different golf courses. This farmer claimed to have found over 800 balls in fifteen years as well as many beer cans. He also indicated that he has been the target of 'misfiring' golfers. Another farmer, noted earlier in the G.V.R.D. study, reported garbage being tossed into his/her fields and finding evidence that the property had been used as a toilet facility by golfers.

Almost one-half of the full-time and part-time farmers in the Layton (1981) study

considered higher taxes to be a disadvantage of owning and operating in the rural-urban fringe. In this study, respondents were evenly divided as to whether 'increased property taxes for farmers' was likely/very likely or unlikely/very unlikely. One respondent noted that golf course development "shouldn't" increase taxes for farmers "but it could".

The respondents were queried about the potential isolation of farm operations due to golf course development in farming areas. The Agricultural Land Commission paper (1990) had noted that this isolation from the rest of an agricultural area, or from portions of the same operation, could create "difficulties in the functioning of the operation" (p. 3). In this survey, respondents were divided as to whether the 'isolation of farm operations from the rest of the farming community' was likely or unlikely. Slightly more respondents thought that it was likely or very likely. One such respondent elaborated on the "interdependency" of the farming community while another expressed that "farmers feel threatened". A respondent who answered 'unlikely' noted that there "wasn't much left" of the farming community.

Most sources reiterate the view that golf courses provide a foothold or are planned as part of further urban development (see, for example, Surrey Planning and Development Services, 1990; Argyle, 1991; Vancouver Sun, 1987). This study supports this view as an overwhelming majority thought that 'more residential development' was likely or very likely while only a few felt that this was unlikely. One respondent suggested that residential development was the "whole idea" of golf course development while another noted that "new golf courses can improve their (own) profitability immensely by developing surrounding land".

Similar responses were obtained for the statement on 'higher land values' where just over one-tenth of the respondents felt that this was unlikely and none of the respondents chose 'very unlikely'. One respondent noted that land values are being driven "out of reach of farmers". Another respondent suggested that "speculators are dangerous" to farming. An example cited by Pierce and Seguin (1993) found that farm lands, neighbouring a proposed golf course and condominium development in Pitt Meadows (a municipality which borders the Greater Vancouver Regional District), escalated from their A.L.R. value of 10,000 dollars per hectare to values ranging from 20,000 dollars to 80,000 dollars per hectare.

Pressure on farmers to sell their land for non-farm uses has been connected with urban development such as golf courses. The farmers in the Layton (1981) study were concerned about urban influences such as pressure on the land. There are various examples of farmers being pressured to sell or being pushed off their land in southeast Asia for golf course development (Chatterjee, 1993; Wheat, 1993). The majority of respondents thought that it was likely or very likely that golf courses would generate 'pressure to sell land for development'. None of the respondents thought that this was 'very unlikely' with only a small number choosing 'unlikely'.

As more and more farmland is held or developed for non-farm uses, it may be suggested that there would be less land available for rent for farm use. The Agricultural Land Commission surmised that in some cases farmers may find that their leases could be terminated when the "land in question (is) being optioned for a golf course" (1990:3). The majority of respondents supported this view as sixty percent felt that it was likely or

very likely that there would be a 'loss of available farmland to rent' while 20 percent thought that this was unlikely. Additional comments expressed by the respondents appeared to show differing environments between the two study areas. A farmer on the Saanich Peninsula stated that there was "not much available to rent" and another noted that the reduction of available land "drives rental prices up". In contrast, some respondents in Surrey commented that there is "plenty available now" and "lots of idle land".

The G.V.R.D. study (Argyle et al., 1991) states that "depending upon the agricultural commodity, some normal farm management practices may be regarded as nuisances by adjacent golf course users" (p. 107). The farmers surveyed appear to share this concern. Just over three-quarters of the respondents thought that 'conflicts with golf course management over farm operations' was likely or very likely. In contrast, there was little agreement over the likelihood of 'conflicts with golf course management over golf course operations'. Slightly under thirty-five percent felt this was likely or very likely compared to 38.1 percent who chose unlikely or very unlikely.

In summary, the majority of respondents thought that conflicts over water, increased trespassing, pressure to sell land, loss of available rental farm land, conflicts with golf course management over farm operations, more residential development, higher land values and increased traffic on rural roads were likely or very likely with strongest recognition to the last three issues. 'More noise' was the only experience that the majority of respondents felt was unlikely. Little agreement was found over the likelihood of increased vandalism, increased property taxes for farmers, isolation of the farm

Table 4.4 Likelihood of Experiences

Experiences	Very Likely freq. (%)	Likely freq. (%)	Neutral freq. (%)	Unlikely freq. (%)	Very Unlikely freq. (%)
increased volume of traffic on rural roads	23 (41.8)	22 (40.0)	4 (7.3)	6 (10.9)	0 (0)
more residential development	17 (30.9)	28 (50.9)	6 (10.9)	4 (7.3)	0 (0)
higher land values	9 (34.5)	26 (47.3)	4 (7.3)	6 (10.9)	0 (0)
conflicts over water supply	18 (32.7)	21 (38.2)	8 (14.5)	8 (14.5)	0 (0)
increased trespassing on adjacent farm properties	12 (21.8)	23 (41.8)	6 (10.9)	13 (23.6)	1 (1.8)
pressure to sell land for development	21 (38.2)	18 (32.7)	10 (18.2)	6 (10.9)	0 (0)
loss of available farm land to rent	15 (27.3)	18 (32.7)	11 (20.0)	11 (20.0)	0 (0)
conflicts with golf course management over farm operations	19 (34.5)	23 (41.8)	7 (12.7)	4 (7.3)	2 (3.6)
increased vandalism on adjacent farm properties	8 (14.5)	12 (21.8)	14 (25.5)	18 (32.7)	3 (5.5)
increased property taxes for farmers	8 (14.5)	13 (23.6)	12 (21.8)	21 (38.2)	1 (1.8)
isolation of farm operation from rest of farm community	11 (20.0)	13 (23.6)	9 (16.4)	21 (38.2)	1 (1.8)
conflicts with golf course management over golf course operations	4 (7.3)	15 (27.3)	15 (27.3)	19 (34.5)	2 (3.6)
more noise experienced by adjacent farm properties	5 (9.1)	6 (10.9)	15 (27.3)	29 (52.7)	0 (0)

operation, and conflicts with golf course management over golf course operations.

Golf Courses and Agriculture

In the final section of the questionnaire, respondents were asked to indicate their level of agreement for a list of statements that dealt with the nature of golf courses, the business of farming and the A.L.R legislation.

The Agricultural Land Commission paper (1990) states that golf courses "represent a fundamental land use change" in an agricultural community and that this "non-farm use ... largely serves the recreation needs of the urban population". Respondents were asked if they agreed that 'golf courses were urban land uses serving urban dwellers'. Close to seventy percent agreed or strongly agreed. A respondent pointed out that "farmers have no time to golf!". One of the 16.4 percent who chose 'neutral' felt that golf courses "cater to everyone".

When the 1988 Order-in-Council made golf courses an allowable land use in the A.L.R., one of the criticisms voiced was that golf courses were incompatible with farming operations. In this study, just over seventy percent of the respondents agreed or strongly agreed that 'golf courses and farm operations can be compatible neighbours'. Their comments, however, ranged from the land uses having "nothing in common" to the situation being "not desirable" and the compatibility being "highly unlikely". One respondent who was among the 18.1 percent who disagreed or strongly disagreed with the possibility of compatibility suggested that it was the "effects" of the land uses that were not compatible.

It has been argued that golf courses do not represent the permanent loss of land

from food production. However, the Surrey Planning and Development Services (1990) policy report contends that conversion back to farmland is a "myth" citing the high cost of golf course development and the greater income generation of golf courses compared to farms. Just over one-half of the respondents disagreed or strongly disagreed that 'a golf course could be converted back to a farm operation'. Many suggested that it was physically possible but financially improbable. One respondent stated that a farm would "never become a viable operation if millions of dollars are spent to level and return the land to arable conditions".

As discussed earlier, the Order-in-Council #1141/88 resulted in a dramatic increase in golf course proposals on agricultural land. It seemed appropriate to inquire if farmers recognized this potentially considerable change in land use. Most of the respondents agreed or strongly agreed that 'there is a large demand for land for golf courses' while none of the respondents disagreed with the statement. A farmer on the Saanich peninsula qualified the statement by adding that there's "not so much here (on the peninsula)". One respondent felt that the "surge of applications" was caused by a "push from offshore" from foreign investors while another blamed the demand on golf courses being the "only thing allowed" in the A.L.R. One Surrey farmer suggested that this demand is a reflection of the "large demand for development" in general.

Most of the sources recognize the tendency for golf course developments to introduce further non-farm land uses. The Surrey Planning and Development Services policy report (1990) contends that the development industry uses golf courses as "stalking horses" to introduce "residential, commercial and resort uses into the A.L.R. which, on

Table 4.5 Nature of Golf Courses

Statement	**Strongly Agree** freq.(%)	**Agree** freq.(%)	**Neutral** freq.(%)	**Disagree** freq.(%)	**Strongly Disagree** freq.(%)
Golf courses are urban land uses serving urban dwellers	6 (10.9)	32 (58.2)	9 (16.4)	6 (10.9)	2 (3.6)
Golf courses and farm operations can be compatible neighbours	7 (12.7)	32 (58.2)	6 (10.9)	8 (14.5)	2 (3.6)
A golf course could be converted back to a farm operation	2 (3.6)	15 (27.3)	9 (16.4)	13 (23.6)	16 (29.1)
There is a large demand for land for golf course development *	19 (35.2)	26 (48.1)	9 (16.7)	0 (0)	0 (0)
Once a golf course is allowed, residential development will follow *	11 (20.4)	29 (53.7)	7 (13.0)	7 (13.0)	0 (0)

* one case missing

their own, would be rejected outright" (p. 2). Almost three-quarters of the respondents agreed or strongly agreed that 'once a golf course is allowed, residential development will follow'. In the previous section, just over eighty percent felt that 'more residential development' was likely to result from golf course development. One farmer stated that this was the "whole idea!". Other respondents suggested that development "depended on local councils" and the "strength of the (A.L.R.) legislation". These results are presented in Table 4.5.

Since some of the criticism of the initial A.L.C. legislation was related to the landholders facing mandatory restrictions over the use of their land, it seemed appropriate to ask respondents to weigh private interests against public policy regarding agricultural land protection. Exactly twice as many respondents disagreed or strongly disagreed than agreed or strongly agreed that farmers should be allowed to sell their land in the A.L.R. for golf course development if they cannot survive financially. Respondents who agreed with the allowance were the most vocal suggesting that farmers should be allowed to sell their farmland for "housing", "anything" or "whatever is profitable".

The results for the next statement were similar to the previous one with just over twice as many disagreeing or strongly disagreeing than agreeing or strongly agreeing that 'regardless of financial standing, farm operators should be allowed to sell their property for golf course development'. These results suggest that findings by Manning and Eddy (1978) regarding support for the A.L.R. still hold true. Their study states that "even though their actions may be restricted to an extent by the A.L.R. legislation, the majority of landowners see it as a long-term necessity ..." (p. 78).

Regarding the issue of financial stability in retirement, the Manning and Eddy (1978) study noted that "a significant number of older farmers were concerned that the A.L.R. legislation had prevented them from acquiring desired retirement income by selling off the land for subdivision ..." (p.79). Gillis' (1980) work did not find that age was associated with any real differences in attitudes towards the A.L.R. with the exception of "very old property owners". In this study, no clear view can be extracted from the response to whether 'farmers can only retire comfortably if they can sell their land for urban development'. Close to one-half (45.5%) disagreed or strongly disagreed with the statement while 18.2 percent chose 'neutral'. Some who remained neutral suggest that 'retiring comfortably' depended on the "type of farm" or the "farming practices". Another farmer who agreed with the statement felt that the "farmland is the farmer's pension" and that the problem relates "back to the original promise to farmers of compensation at the time of the A.L.R bill".

Agreement was unanimous for the statement 'if the public wants to save agricultural land they should buy local farm products' with almost three-quarters of the respondents strongly agreeing. One respondent suggested that we "don't need the A.L.R. if (the public) supports farmers" so that they can "get a return on their investment". However, another respondent pointed out that "it is not the public but the wholesalers who determine what is put in front of the public to buy". As Pierce and Sequin (1993) concluded "perhaps the single most important factor affecting the integrity of the agricultural land reserves ... is the economic health of the industry ..." (p. 306). These results are presented in Table 4.6.

Table 4.6 The Business of Farming

Statement	**Strongly Agree** freq.(%)	**Agree** freq.(%)	**Neutral** freq.(%)	**Disagree** freq.(%)	**Strongly Disagree** freq.(%)
If a farm operator in the A.L.R. cannot survive financially he/she should be allowed to sell their land for golf course development	6 (10.9)	10 (18.2)	7 (12.7)	26 (47.3)	6 (10.9)
Regardless of financial standing, farm operators should be allowed to sell their property for golf course development	5 (9.1)	12 (21.8)	3 (5.5)	27 (49.1)	8 (14.5)
Farmers can only retire comfortably if they can sell their land for urban use	6 (10.9)	14 (25.5)	10 (18.2)	20 (36.4)	5 (9.1)
If the public wants to save agricultural land they should buy local farm products	41 (74.5)	14 (25.5)	0 (0)	0 (0)	0 (0)

The final set of statements deal with the A.L.R. legislation and golf course development. Respondents are asked to consider land use in the A.L.R. with regard to the siting of golf courses. Just over three-quarters of the respondents disagreed or strongly disagreed with the statement that 'golf courses should be allowed anywhere in the A.L.R.' while twenty percent agreed or strongly agreed with it. The majority of respondents agreed or strongly agreed that 'golf courses should not be allowed on prime agricultural land' with over one-half of the respondents strongly agreeing.

While 34.5 percent agreed or strongly agreed that 'golf courses should not be allowed in the A.L.R.', slightly over one-half of the respondents disagreed or strongly disagreed with the statement. Comments from respondents who chose 'neutral' included "some of the land isn't farmable" and "if the land is marginal - golf course".

Just over one-half of the respondents agreed or strongly agreed that 'there is a need for stricter controls over locational siting of golf courses' while twenty percent remained neutral. None of the respondents strongly disagreed with the statement. A respondent from Surrey, who disagreed with the statement, felt that the powers that be were "doing a decent job". As with the previous statement, twenty percent of the respondents remained neutral over whether 'the Agricultural Land Commission should relax their criteria for golf course development'. Over one-half of the respondents disagreed or strongly disagreed with the statement. One of the 'neutral' respondents commented that there are "too many people who don't know" about farming on the Commission.

In an examination of agricultural land preservation approaches and applications

for exclusions from zoning in British Columbia and Quebec, Pierce and Seguin (1993) commented that "there is evidence of political interference over rezoning" and that "fairness and impartiality of the decision-making process is open to question whenever Cabinets over-rule their respective Commissions" (p. 305). The farmers surveyed appear to support this assessment. The majority agreed or strongly agreed that 'the Provincial Cabinet should not have the power to overrule Agricultural Land Commission decisions'. A number of these respondents referred to the "political" nature of Cabinet decisions and one respondent stated that they "know nothing about farming". A respondent who remained neutral suggested that decisions "go wrong both ways". One respondent who disagreed with the statement felt that the Cabinet's 'power to overrule' was acceptable "as long as it is in the best interest" while another thought that there "should be an alternative control" and "wondered about the Commission" feeling that it was "very political".

A little more than twice as many disagreed or strongly disagreed than agreed or strongly agreed that 'the 1988 Order-in-Council which make golf courses an allowable farmland use in the A.L.R., should have been upheld'. One respondent who disagreed with the statement, referred to "golf courses being put on land that wasn't necessarily poor". A respondent who was one of the twenty percent who remained neutral suggested that "because they didn't 'fine-tune' the A.L.R., lots of land was good for golf courses". Comments from respondents who agreed with the statement ranged from "little bits O.K." to the "Commission doesn't know (anything) about farming". Analysis of the A.L.C. legislation questions suggests that the majority of respondents appear to support the

Table 4.7 A.L.R. Legislation

Statement	**Strongly Agree** freq.(%)	**Agree** freq.(%)	**Neutral** freq.(%)	**Disagree** freq.(%)	**Strongly Disagree** freq.(%)
Golf courses should be allowed anywhere in the A.L.R.	2 (3.6)	9 (16.4)	2 (3.6)	24 (43.6)	18 (32.7)
Golf courses should not be allowed on prime agricultural land	29 (52.7)	15 (27.3)	5 (9.1)	3 (5.5)	3 (5.5)
Golf courses should not be allowed in the A.L.R.	10 (18.2)	9 (16.4)	7 (12.7)	26 (47.3)	3 (5.5)
There is a need for stricter controls over locational siting of golf courses	11 (20.0)	18 (32.7)	11 (20.0)	15 (27.3)	0 (0)
The Commission should relax their criteria for golf course development in the A.L.R.	2 (3.6)	10 (18.2)	11 (20.0)	20 (36.4)	12 (21.8)
The Provincial Cabinet should not have the power to overrule Commission decisions	13 (23.6)	26 (47.3)	7 (12.7)	8 (14.5)	1 (1.8)
The 1988 Order-in-Council should have been upheld *	5 (9.3)	8 (14.8)	11 (20.4)	19 (35.2)	11 (20.4)

* one case missing

A.L.R. and the safeguarding of prime agricultural lands. However, golf courses are not entirely excluded as a land use in the A.L.R. by the farmers interviewed. These results are presented in Table 4.7.

4.1.2 Responses - Sample Divisions

The members of the sample are not identical in all aspects. The respondents do not agree on all the issues, as shown by the variety responses. Members of the sample do not have identical characteristics. The sample is made up of farmers who operate in two different regions and have varying career lengths; not all the farmers are full time operators. Although the sample could be divided by any one of the characteristics obtained in the survey, the results of division by study area, type of operator and career length are analyzed in this study. This section investigates whether there are significant differences between the responses of farmers in Surrey and the Saanich Peninsula; farmers who are and are not full-time operators; and farmers who have been since before the A.L.C. legislation and farmers who have only been operating in post legislation conditions. The two groups, in each case, are compared to all the statements in the questionnaire.

In order to ascertain whether the sample is divided by the aforementioned characteristics, nonparametric tests, which are appropriate for nominal and ordinal data, were conducted to see whether the samples were drawn from the same or different populations. One problem encountered in undertaking the statistical analysis was that the sample size was small although this is not a problem in the sense that, in this case, they

did meet the general assumptions. However, the sample size problem is augmented by the fact that the respondents agree with each other, so that the distribution of the responses is quite lopsided. This, in turn, means most of the Chi Square tests violated the minimum frequency per cell assumption (see, for example Ebdon, 1985; Norcliffe, 1982) thus the "results of the test(s) are meaningless" (Siegal, 1956). This is a common problem that emerges in the analysis of categorical data. When there are five categories, only one category may have a frequency of less than five; for statistical test purposes this assumption may have been met by amalgamating some categories (Norcliffe, 1982). Other nonparametric tests were not utilized since "there is usually no clear alternative to the chi-square test when it is used" (Siegal, 1956). Patterns may still be observed although they are not validated by statistical results.

Location

As discussed in Chapter 3, 29 respondents operate in the Capital Regional District's North Saanich or Central Saanich and 26 respondents operate in the Greater Vancouver Regional District's Surrey. Surrey is located in the most populated region of British Columbia so the resulting urban pressures including golf course development are presumably greater there than in North Saanich and Central Saanich. One may suspect that farmers operating in Surrey have more experience with urban pressures thus different attitudes compared to their Saanich Peninsula colleagues. The responses from the two different study areas were compared to all the statements. However, few significant differences were found in the responses between the sample taken in Surrey and the sample taken in North Saanich and Central Saanich with the exception of one variable.

Table 4.8 Attended A.L.R. Hearings

Location	Yes	No	Totals
Saanich Peninsula	17	12	29
Surrey	7	19	26
Totals	24	31	55

Chi Square = 4.3857 Significance = .0362

Table 4.9 Likelihood of Conflict with Golf Course Management over Golf Course Operations

Location	**Very Likely** freq.	**Likely** freq.	**Neutral** freq.	**Unlikely** freq.	**Very Unlikely** freq.	**Totals** freq.
Saanich Pen.	3	12	7	6	1	29
Surrey	1	3	8	13	1	26
Totals	4	15	15	19	2	55

cells with frequencies < 5 = 4 of 10

Saanich Peninsula farmers were far more likely to have attended A.L.R. application hearings than Surrey farmers (see Table 4.8). As mentioned earlier, a number of farmers commented that the hearings they had attended involved their own applications so this result seems surprising. One might have expected that development opportunities would be greater in Surrey thus the opportunities for hearing attendance would have been expected to be greater in that district. All the other tests using the location variable revealed that the samples were drawn from the same population whether the case operated in Surrey or the Saanich Peninsula. However, one other result did suggest a point of disagreement between farmers in the two study areas. Although the statistical test did not find a significant difference, it does appear that Saanich Peninsula respondents felt that conflicts with golf course management over golf course operations were likely while Surrey respondents tended to lean towards the unlikelihood of this conflict occurring (see Table 4.9). Almost the same number were neutral about the issue but over one-half of Saanich Peninsula respondents felt that this type of conflict was likely or very likely while over one-half of Surrey respondents thought it was unlikely or very unlikely. Since there are more golf courses and golf course proposals in Surrey, potential conflicts would more likely be experienced in that region. However, the anticipation of this problem is greater on the Saanich Peninsula which cannot be explained by this study.

Fulltime Farm Operator

In this study, over one-half of the participants were fulltime operators while the remaining respondents were part-time, hobby farmers or semi-retired. It is possible to speculate that fulltime operators are more dependent on their operations for livelihood

hence they would be more sensitive to changes in their working environment. Their attitudes toward golf courses may be significantly different from the respondents who have other interests and income sources.

In order to investigate this issue all the responses of full-time operators were compared to all the responses of the remaining operators to see if there were any significant differences in the two groups' responses. The statistical tests and the resulting patterns do not bear out any difference between fulltime and part-time-type operators. Two sets of results do allow for comments to be made about the respondent profiles. All the respondents who have golf course(s) for neighbours, are fulltime farmers. It was also found that all dairy farmer respondents were fulltime operators as well as the most common type of full-time operator while fruit and vegetable operations were usually part-time-type (see Table 4.10).

Career Length

The concern over career lengths of respondents is twofold. First, longer career lengths may be equated with more experience with changes in the farming environment. The operating location of a respondent in this study is assumed to be a constant. The variable used represented the particular respondent's career length at the location (in the A.L.R.) they were found during the study. Certainly the experiences of the respondents, who have moved from different municipalities or non-A.L.R. regions or from outside the province to their survey time location, may affect the results. Due to the way in which the survey questionnaire was constructed, this question can not be addressed. The second concern relates to the A.L.R. Respondents who have been operating since before 1973

would have experienced the implementation of the A.L.R. legislation as well as worked under pre-legislation conditions. Some respondents expressed dislike for the initial implementation but most of these operators have warmed to it since. All the statements were compared with the pre and post A.L.R. operators. The statistical tests did not reveal any significant differences between respondents who have been farming, in their study time location, for less than 20 years and respondents who have been operating for a longer period thus in pre-A.L.R. time (interviews done in 1992). However, there was one exception involving a question which asked whether operators were likely to experience higher land values from golf course development in the A.L.R. The 'less than twenty years' respondents were almost unanimous in their opinion of the likelihood of higher land values while twenty-five percent of the respondents with a career length of twenty years or more at their current location replied that higher land values were unlikely (see Table 4.11).

4.2 Additional Comments

The business of farming is complex which makes it difficult to isolate specific aspects without relating them to the entire system. Respondents were encouraged to make additional comments about what they felt was relevant concerning farming and the survival of the agricultural sector. Many of the comments made related to the difficulties of farming in the urban fringe in general. Golf courses are just seen as another result of urban growth. One farmer stated that "whether houses, golf courses, anything (involving) people - can't farm" while another said that it's "not just golf courses, it's everything".

Table 4.10 Type of Farm Production

Type	Fulltime	Part-time, Hobby, Semi-retired	Totals (Row)
Dairy	14	0	14
Fruit and Vegetable	9	13	22
Livestock	5	6	11
Fodder	1	1	2
Mixed	2	2	4
Other	0	2	2
Totals (Column)	31	24	55

Table 4.11 Expectation of Higher Land Values by Career Length

Career Length (years)	Very Unlikely	Likely	Neutral	Unlikely	Totals (Row)
< 20	13	17	3	0	33
>= 20	6	8	1	5	20
Totals	19	25	4	5	53*

* 2 missing cases
no case chose 'very unlikely'

Respondents reported complaints from urbanites about farming activities such as smells and noise. A farmer in Surrey commented that farming is moving out to the Fraser Valley due to the push of urbanization.

Many respondents commented on a lack of support for agriculture and poor planning by municipal governments. Comments ranged from "the (municipal) government doesn't understand, (we have) no buffer zones" to "nothing favours agriculture (due to) poor planning and high population growth". Several respondents in Surrey referred to difficulties accessing various municipal services and utilities while neighbouring urban uses (a golf course in one case) appeared to have no problems.

Many respondents commented on the high cost of starting a farming operation which bodes ill for the future of farming. Several stated that land is priced out of farmers' reach so, as one respondent commented, it's "too costly to start up unless you inherit land". Farms used to pass in the family from generation to generation. Several respondents commented on the disinterest of their children in continuing the family farming operations.

In regard to the future of farming and saving agricultural land, the issues which were broached the most by respondents were Free Trade and competition from the United States. Since forty percent of respondents are fruit and vegetable farmers it is not surprising that the U.S. dumping of cheaper, surplus produce frequently came up. Many commented that we can not compete with Americans due to our high taxes and their high subsidization. One respondent felt that farmers were being discouraged by the (federal) government due to Free Trade while another reflected on a future dependence on the U.S.

for food. The inability to compete with the U.S. hence an inability to make money from farming seems to paint a discouraging picture for the future of farming by many respondents. As one respondent stated:

> the way things are going, golf courses will keep farmland greener for a lot longer than most types of farming will. If it doesn't pay, it won't stay green...

4.3 Summary

Almost twenty years have passed since the implementation of the A.L.R.s but the people most affected still appear to support the legislation although many still cite misgivings. The quality of some of the land in the A.L.R. is remains an issue. The 1988 Order-in-Council which reintroduced golf courses as an outright uses of land in the A.L.R. produced a variety of concerns for municipal and regional governments. The majority of farmers surveyed shared many of these concerns. They felt that increased traffic, more residential development, higher land values, pressure to sell land for development and conflicts over water supplies were the most likely to result from golf course development in the A.L.R. The financial health of a farmer was not considered a legitimate reason to be allowed to sell land in the A.L.R. for golf course development by over one-half of those surveyed. The respondents unanimously agree that public support for agricultural land can be acted upon by the purchasing of local farm products. While those interviewed did not agree to prohibit golf course development from the A.L.R., most did not want to see development located just anywhere in A.L.R. or on prime agricultural land. Support was not high for the 1988 Order-in-Council which

ignited the golf course development controversy.

The division of the sample between study areas, type of operator and career length did not reveal any significant differences of note among the respondents and their opinions about the A.L.R. and golf course development. This result is similar to the Manning and Eddy (1978) study and the Gillis (1980) study which used the same data base. The Gillis (1980) study did not find any significant differences among farmers and levels of support for the A.L.R. in a province-wide survey of landowners in the A.L.R.

Chapter 5

SUMMARY AND CONCLUSIONS

5.1 Summary

From a simple game played in Scotland on terrain open to a multitude of uses, golf has evolved into one of the more popular sports in the world played by millions and worth billions. The growing popularity of the sport has brought about the development of more than a million hectares of the earth's land surface for playing space. The latest boom in the golf course industry, fuelled by interest in the golf tourism market, has generated concerns over the implications of golf course development in many nations around the world. Golf course development and its ancillary uses have been linked to destruction of forests, over consumption and contamination of water supplies, pollution, poisoning of wildlife and people, loss of farmland and the uprooting of people. Since golf courses are generally located near their markets, golf course development is another agent of land conversion in the urban fringe. Golf courses join the push into rural areas which is led by the catalysts of population growth and urbanization.

There has been much focus on the direct and indirect losses of agricultural land.

Concern over the loss of agricultural land and the pressures on remaining farm operations generated by such activities as land speculation, land fragmentation and rising land values, has prompted many governments to undertake various types of farmland protection strategies. In 1973, the government of British Columbia, a province with only five percent of land suitable for agriculture, implemented one of the "most protective and exclusionary approaches in Canada" (Pierce and Seguin, 1993). Initially, any land that was taxed as farmland, zoned for agriculture, or having Canada Land Inventory classification one to four, was placed in what would be called the Agricultural Land Reserve where residential subdivision and conversion was prohibited. Changes to the use of land within the Reserve could only be made by application to the Agricultural Land Commission, Cabinet or the Environment and Land Use Committee of Cabinet. The (Agricultural) Land Commission Act has had a variety of results. It has been cited as a barrier to urban development by developers while removing speculative pressures and increasing security of life for farmers.

Since the Act's implementation, various changes to the Act have appeared to erode its effectiveness. One such change was the 1988 Order-in-Council #1141/88 which made golf courses outright uses in the Agricultural Land Reserve. Although golf courses were outright uses prior to 1978, the rising popularity of the game and golf course development fuelled a rush for development applications that left local governments near major urban centres struggling to keep up. Golf course applications not only included clubhouses, some proposed plans for convention centres, hotels and residential subdivisions. In the rush, alarms were sounded about the locations of many of the proposals. In the fall of

1991, the newly elected provincial government rescinded the Order-in-Council #1141/88.

Prior to the change in legislation and after the subsequent changes and flood of golf course development proposals, the question remains whether golf courses and their accompanying ancillary non-farm uses, are appropriate in areas zoned for agricultural use. Municipal reports suggest a need for information about the effects of golf course development on the farming community. There appear to be direct and indirect implications for farmland over and above the conversion of agricultural land.

In order to identify and understand the implications of golf course development for agriculture, it is necessary to consult the people most directly involved in agriculture, the farm operators and owners. This study set out to learn more about the perceived implications of golf course development by obtaining the attitudes and opinions of the individuals who decide whether to work the land or give up farming. The application of a questionnaire through face-to-face interviews was considered the most efficient and cost effective way to elicit the attitudes of farmers about the development of golf courses in the Agricultural Land Reserve. Farm operators in Surrey outside Vancouver and in North Saanich and Central Saanich outside Victoria were interviewed.

The information collected affirms that support for the Agricultural Land Reserves is still strong among farm operators although some comments suggest that there are still lingering problems such as the quality of some of the land within the Reserve. Farmers agreed that conflicts over water, pressure to sell land, conflicts with golf course management over farm operations, increased traffic on rural roads, more residential development and higher land values were the more likely outcomes of golf course

development in the Agricultural Land Reserves. While the majority of respondents agree that golf courses are an urban land use serving urban dwellers, they would not exclude golf courses from the A.L.R. Respondents did refer to low quality land in the A.L.R. which may well be suitable locations for golf course development. Respondents did recognize the tendency for golf course developments to be the footholds for further urban development. Concern was echoed for the siting of golf courses and the majority agreed with the rescinding of the Order-in-Council which had made golf courses an outright land use in the A.L.R. Although the sample was made up of full-time and part-time farmers from different regions with varying career lengths, differences in responses did not appear to exist. Generally, respondents view golf courses as just another component of the process of urbanization.

5.2 Conclusions

Population growth and urbanization have substantial implications for the rural land surrounding urban centres. Land conversions and urban pressures lead to conflict and change in the urban-rural fringe. The most noticeable impact is the loss of agricultural land which is of particular concern in Canada since much of the prime agricultural land surrounds the urban centres. Since 1973, the province of British Columbia has slowed the agricultural land conversion process with the Land Commission Act and the designation of the Agricultural Land Reserves. However, many changes in legislation, such as the 1988 Order-in-Council #1141/88, were made without intensive study of the effects and without the consultation of the principal managers of the agricultural land

resource - the farm operators. The Auditor General of British Columbia (1994) concluded that the Commission needs to improve its communications with stakeholders and "should obtain a broader base of information about the extent to which its role, policies and decision-making are accepted by its stakeholders" (p.22). The Commission does not have a formal process to collect such information. This study may provide some insight into the design of a formal process which collects the attitudes and suggestions of the stakeholders in the A.L.R. A combination of procedures which allows for two-way communication between the Commission and the farm operators should meet the recommendations of the Auditor General's report (1994).

While some conclusions may be drawn about the attitudes of farm operators in the study areas, a larger sample would have been more appropriate. This most likely would have made the statistical tests valid. The inability to obtain a proper list of farm operators made it difficult to develop a pool of potential respondents.

This study focused on current farm operators in the A.L.R. This in itself may provide some bias. Former farmers who quit operating due to the A.L.R. legislation would most likely provide opposition to the legislation and\or be supportive of golf course development. A process which reviews why individuals give up farming in the A.L.R. may be beneficial to the development of future policies and legislation which encourage the establishment and maintenance of farming operations.

The respondents appear to view golf courses as another type of urban intrusion with similar consequences. Comparison studies of farmers' views of different types of urban development and pressures would help answer this question. To develop a more

comprehensive picture of the implications of golf course development in the urban fringe, a survey of the views of all the players in the countryside would be appropriate. Globally, many concerns have been voiced and impacts have been attributed to golf course development, especially in developing countries. As the golf course industry is beginning to address environmental issues in the developed world, changes are likely to be much slower in developing countries. Since it is predicted that the popularity of golf will not wain in the near future, now is the time for impact studies.

This study does expose farmers' continuing support for agricultural land protection in the face of growing urban pressures. They reiterate the need for further types of support from the government and the public in order to maintain the future of agriculture. If society wants to sustain future food production, the farm operators should not bear the costs alone.

References

Agricultural Land Commission (1994). *ALR Advisory*. May-June 1994, Vol. 2, No. 1. Agricultural Land Commission: Burnaby, B.C.

-----, (1993). *ALR Advisory*. January 1993, Vol. 1, No. 1. Agricultural Land Commission: Burnaby, B.C.

-----, (1990). *Issues Related to the Location of Golf Courses within the Agricultural Land Reserve*. Agricultural Land Commission: Burnaby, B.C.

Ajzen, I. (1988). *Attitudes, Personality and Behavior*. Open University Press: Milton Keynes, U.K.

Alwin, D. (1977). Making errors in surveys. *Sociological Methods and Research* **6**(2):131-150.

Argyle, W. Graham and Associates Inc.; Graham Cooke and Associates Inc.; Golfcorp Ventures Inc.; Pavelek and Associates Ltd.; G.G. Runka, Land Sense Ltd.; Daniel H. Seymour Consulting; Sussex Consultants Ltd.; Yates, Thorn and Associates and Advisors. (1991). *Golf Course Development in the Lower Mainland*. Report prepared for the Greater Vancouver Regional District, Development Services Department, May 1991. W.G. Argyle and Associates Inc.: Vancouver.

Auditor General of British Columbia (1994). *Value-for-Money Audits - Provincial Agricultural Land Commission - 1994/1995 Report 2*. Office of the Auditor General: Victoria, B.C.

Babbie, E.R. (1973). *Survey Research Methods*. Wadsworth Publishing Company, Inc.: Belmont, California.

Backstrom, C.H. and G. Hursh-Cesar (1981). *Survey Research*. Macmillan Publishing Company: New York.

Baden, J. (ed.) (1984). *The Vanishing Farmland Crisis*. University Press of Kansas: Lawrence, Kansas.

Beaubien, C. and R. Tabacnik (1977). *People and Agricultural Land - Perceptions 4*. Supply and Services Canada: Ottawa.

Boydell Environmental Consultants (1990). *Brentwood Lakes Proposed Golf Course Environmental Impact Assessment.* Boydell Environmental Consultants.

British Columbia Environment and Land Use Committee (1976). *Agricultural Land Capability in British Columbia.* British Columbia Environment and Land Use Committee Secretariat: Victoria, B.C.

British Columbia Ministry of Lands, Parks and Housing (1984). *Guidelines - Public Participation in Land Planning.* B.C. Ministry of Lands, Parks and Housing: Victoria, B.C.

British Columbia Provincial Capital Commission (1988). *British Columbia Capital Commission Comprehensive Plan.* B.C. Provincial Capital Commission: Victoria, B.C.

Bryant, C.R. (1989). Rural land-use planning in Canada. In P. Cloke (ed.), *Rural Land - Use Planning in Developed Nations.* University of Hyman: London. pp.178-206.

-----, (1986). Agriculture and Urban Development. In M. Pacione (ed.), *Progress in Agricultural Geography.* Croom Helm Ltd.: London. pp.167-194.

-----, (1981). Agriculture in an urbanizing environment - A case study from the Paris region, 1968-1976. *Canadian Geographer* **25**(1):27-45.

-----, (1976). *Farm Generated Determinants of Land Use Changes in the Rural-Urban Fringe in Canada, 1961-1976.* Supply and Services Canada: Ottawa.

-----, and P. Coppack (1991). The city's countryside. In T. Bunting and P. Filion (eds.), *Canadian Cities in Transition.* Oxford University Press: Toronto. pp.209-238.

-----, and L.H. Russwurm (1979). The impact of non-farm development on agriculture-A synthesis. *Plan Canada* **19**(2):122-134.

-----, L.H. Russwurm and A.G. McLellan (1982). *The City's Countryside.* Longman Inc.: New York.

Bunce, M. (1985). Agricultural land as a real estate commodity - Implications for farmland preservation in the North American urban fringe. *Landscape Planning* **12**:177-192.

-----, M. and M. Troughton (eds.) (1984). *The Pressures of Change in Rural Canada.* Atkinson College: Downsview, Ontario.

Burton, T.L (1979). A review and analysis of Canadian cases in public participation. In B. Sadler (ed.), *Involvement and Environment.* Environmental Council of Alberta: Edmonton. pp.3-16.

Capital Regional District (1992). *Update...on the Capital Region - 1991 Census Series, Volume 1.* Capital Regional District: Victoria, B.C.

Chatterjee, P. (1993). Golf poses too many hazards. *World Press Review* **40**(10):52.

Cloke, P. (1989). Planning and rural land use - Concepts and applications. In P. Cloke (ed.), *Rural Land Use Planning in Developed Nations.* University of Hyman: London. pp.1-17.

Cocklin, C., B. Smit and T. Johnston (eds.) (1987). *Demands on Rural Lands.* Westview Press: Boulder, Colorado.

Corbett, R. (ed.) (1990). *Protecting Our Common Future.* Mount Allison University: Sackville, New Brunswick.

Coughlin, R.E. (1980). Farming on the urban fringe. *Environment* **22**(3):33-39.

Cousins, G. (1975). *Golf in Britain.* Routledge and Kegan Paul Ltd.: London.

Cowichan Valley Regional District Development Services Department (1990). *Golf Courses in the ALR.* Cowichan Valley Regional District.

Dandekar, H. (1988). *The Planner's Use of Information.* American Planning Association: Chicago.

Davis, M. (1991). Brentwood Lakes Golf Course nixed. *The Review* (Brentwood, B.C.), 23 January 1991, p.A1.

Dawe, A. (1985). *The Golf Courses of British Columbia.* A and J Publishing: Richmond, B.C.

Deacon, J. (1994). Going public. *Maclean's* **107**(20):46-47.

Dijkstra, W. and J. van der Zouwen (1982). *Response Behaviour in the Survey-interview.* Academic Press: London.

District of Central Saanich (1991). *Official Community Plan.* District of Central Saanich: Saanchton, British Columbia.

District of North Saanich (1989). *Official Community Plan.* District of North Saanich:

Sidney, British Columbia.

Duncan, O.D. and Stenbeck, M. (1978). Are Likert Scales unidimensional? *Social Science Research* **16**:245-259.

Ebdon, D. (1985). *Statistics in Geography*. Basil Blackwell Ltd: Oxford.

The Economist (1994a). Golf's killjoys. **332**:91.

The Economist (1994b). In the bunker. **330**:67.

The Economist (1993). Greens against the greens. **327**:38.

Erickson, D.L. (1980). Public involvement in resource agency decision-making. *Journal of Soil and Water Conservation* **35**:224-228.

Everitt, J. (1981). Recent land conversion on the urban fringe of Surrey, B.C. In K.B. Beesley and L.H. Russwurm (eds.), *Rural-Urban Fringe - Canadian Perspectives*. Atkinson College: Downsview, Ontario. pp.292-313.

Flaherty, M. and B. Smit (1982). An assessment of land classification techniques in planning for agricultural land use. *Journal of Environmental Management* **15**:323-332.

Focus (1993). Eine Frage des Geldes. 3 May 1993, Vol. 18, pp. N/A.

Fowler, F. (1993). *Survey Research Methods*. Sage Publications, Inc.: Newbury Park, California.

Friedmann, J. (1987). *Planning in the Public Domain: From Knowledge to Action*. Princeton University Press: Princeton, New Jersey.

Furuseth, O. and J.T. Pierce (1982). *Agricultural Land in Urban Society*. Association of American Geographers: Washington D.C.

Gardner, G. (1976). *Social Surveys for Social Planners*. Holt, Rinehart and Winston: Sydney.

Gasson, R. (1973). Goals and values of farmers. *Journal of Agricultural Economics* **24**:521-42.

Gayler, H.J. (1982). Conservation and development in urban growth. *Town Planning Review* **53**(3):321-341.

Gertler, L. and R. Crowley (1977). *Changing Canadian Cities: The Next 25 Years.* McClelland and Stewart: Toronto.

Gillis, M.H. (1980). *An Analysis of Landowners' Attitudes Towards the British Columbia Agricultural Land Reserve.* Unpublished M.A. Thesis. School of Community Planning, University of British Columbia, Vancouver.

Golf Market Today (1991). Golf Summit 90. January-February 1991, pp. N/A.

Grossman, J. (1993). How green are these fairways. *Audubon* **95**:90-99.

Handley, P. (1990). Thais join the club. *Far Eastern Economic Review* **148**:42.

Harrison, R. and S. Cluster (1995). *People in Canadian Culture.* Ministry of Industry: Ottawa.

Hart, J. F. (1976). Urban encroachment on rural areas. *Geographical Review* **66**(1):513-529).

Hiebert, M. (1992). Green fees. *Far Eastern Economic Review* **155**:22.

Hoffman, D.W. (1982). Saving farmland, a Canadian program. *Geojournal* **6**:539- 546.

Horn, W. (1991). Golf freeze to thaw for 20 to 30 courses. *Vancouver Sun,* 13 December 1991, p.B7.

Ilbery, B.W. (1986). Theory and methodology in agricultural geography. In M. Pacione (ed.), *Progress in Agricultural Geography.* Croom Helm Ltd.: London. pp.13-37.

-----, (1985). *Agricultural Geography.* Oxford University Press: New York.

-----, (1978). Agricultural decision-making - A behaviourial perspective. *Progress in Human Geography* **2**(3):448-465.

International Sports Inc. (1993). *Golf Industry Opportunities in B.C. - A Discussion Paper.* Report prepared for the British Columbia Ministry of Small Business, Tourism and Culture, Victoria, B.C.

Jackson, J.N. (1985). British Columbia and Ontario - Some comparisons in the provincial approach to safeguarding agricultural land. *Ontario Geography* **26**:11-24.

Johnston, R.J. (ed.) (1988). *The Dictionary of Human Geography*. Basil Blackwell Ltd.: Oxford.

-----, (1986). *Philosophy and Human Geography*. Edward Arnold Ltd.: London.

-----, (1983). Resource analysis, resource management and the integration of physical and human geography. *Progress in Physical Geography* **7**(1):127-146.

Joseph, A.E. and B. Smit (1985). Taxes versus services - Municipal service provision in growing rural communities. *Population Research and Policy Review* **4**:51-66.

Kamieniecki, S. (1982). Leaders' and citizens' attitudes towards population growth - Some explanatory factors. *Journal of Environmental Management* **14**:35-44.

Karp, J. (1992). Greens for the Reds. *Far Eastern Economic Review* **155**:74-76.

Kates, R. and I. Burton (1986). *Geography, Resources, and Environment. Vol.1 - Selected Writings of Gilbert F. White*. University of Chicago Press: Chicago.

Kawashima, M. (1991). Alchemy of golf course development unmasked. *Tokyo Business Today* **59**(3):40-41.

Keating, M. (1986). Our precious fruitlands in peril. *Canadian Geographic* **106**(5):26-35).

Kidder, L. and C. Judd (1986). *Research Methods in Social Relations*. CBS College Publishing: New York.

Kiecolt, K. (1988). Recent development in attitudes of social structure. *Annual Review of Sociology* **14**:381-403.

Koehler, D. and J. Koehler (1989). *Golfing in Canada - A Comprehensive Guide to 1400 Courses*. Prentice-Hall: Scarborough, Ontario.

Kunihiro, Y. (1990). The triple evils of golf courses. *Japan Quarterly* **37**:291-297.

Lavers, D. (1991). These farmland offers can and should be refused. *Times-Colonist* (Victoria), 27 January 1991, p.A4.

Layton, R.L. (1981). Attitudes of hobby and commercial farmers in the rural-urban fringe of London, Ontario. *Cambria* **8**:33-44.

Loewen, G. (1991). Canadian golf lands in the rough. *Globe and Mail* (Toronto), 16 February 1991, pp.A1 and A4.

-----, (1990). Suiting golfers to a tee. *Globe and Mail* (Toronto), 19 February 1990.

Lounsbury, J.F. and F.T. Aldrich (1979). *Introduction to Geographic Field Methods and Techniques*. Charles E. Merrill Publishing Company: Columbus, Ohio.

MacDonald, Betty, (pers. comm.). Administrative Manager, British Columbia Golf Association, Burnaby, B.C. February, 1991.

Manning, E.W. (1983). *Agricultural Land Protection Mechanisms in Canada.* Environment Council of Alberta: Edmonton.

-----, and S. Eddy (1978). *Agricultural Land Reserves of British Columbia - An Impact Analysis*. Supply and Services Canada: Hull, Quebec.

-----, and J.D. McCuaig (1981). The loss of Canadian agricultural land - A National Perspective. *Ontario Geography* **18**:25-45.

-----, and J.D. McCuaig (1977). *Agricultural Land and Urban Centres*. Lands Directorate, Fisheries and Environment Canada: Ottawa.

-----, and J.D. McCuaig with E.A. Lacoste (1979). *The Changing Value of Canada's Farmland - 1961-1976*. Lands Directorate, Environment Canada: Ottawa.

Marsden, T., J. Murdoch and A. Flynn (1993). Regulating land development - Local market structures and structured markets. *Rural Sociology* **58**(4):599-625.

Martin, L. (1975). *A Comparative Urban Fringe Study Methodology*. University of Waterloo, Waterloo, Ontario.

McCallum, L. (1995). Aloha also means goodbye. *Vancouver Sun*, 8 July 1995, p.B2.

McCuaig, J.D. and E.W. Manning (1982). *Agricultural Land-Use Change in Canada Process and Consequences*. Supply and Services Canada: Ottawa.

McDonald, G. and R. Rickson (1987). Protecting farmland from whom and for what purpose? In C. Cocklin, B. Smit and T. Johnston (eds.), *Demands on Rural Lands*. Westview Press: Boulder, Colorado. pp.97-111.

Miller, W. (1990). Golf courses hitting boom times. *Times-Colonist* (Victoria), 22 December 1990, p.B1.

Mitchell, B. (1989). *Geography and Resource Analysis*. John Wiley and Sons, Inc.: New York.

Mooney, P. (1990). Re-examining preservation of agricultural land in B.C. In R. Corbett (ed.), *Protecting Our Common Future.* Mount Allison University: Sackville, New Brunswick. pp.1-34.

Neimanis, V. (1979). *Canada's Cities and Their Surrounding Land Reserve.* Lands Directorate, Environment Canada: Ottawa.

-----, and R. McKechnie (1980). *Urban Growth, Infrastructure, and Land Capability-A Windsor Example.* Lands Directorate, Environment Canada: Ottawa.

Nelson, A. (1992). Preserving prime farmland in the face of urbanization. *Journal of the American Planning Association* **58**:467-488.

-----, (1990). An appraisal of farmland preservation policies - Which works as intended? In R. Corbett (ed.), *Protecting Our Common Future.* Mount Allison University: Sackville, New Brunswick. pp.79-109.

Norcliffe, G.B. (1982). *Inferential Statistics for Geographers.* Hutchinson: London.

Norusis, M.J. and SPSS Inc. (1988). *SPSS/PC+ V2.0 Base Manual.* SPSS Inc: Chicago.

Paterson, J. (1992). Stats show North Saanich leads growth. *Times-Colonist* (Victoria), 15 July 1992.

Patterson, R., R. Lohin and D. Ferguson (1992). *Consultation: When the goal is good decisions.* Canadian Centre for Management Development: Ottawa.

Pierce, J.T. (1990). *The Food Resource.* Longman Scientific and Technical: Essex, England.

-----, and J. Seguin (1993). Exclusive agricultural zoning in British Columbia and Quebec - Problems and prospects. In A. Gilg (ed.), *Progress in Rural Policy and Planning, Volume 3.* Bellhaven Press: London. pp.287-310.

Pierce, T.W. and J. Thie (1981). Land inventories for land use planning in Canada. In G. Peterson and M. Beatty (eds.), *Planning Future Land Uses, Volume 42.* American Society of Agronomy: Madison, Wisconsin. pp.57-71.

Pynn, L. (1991). Golf courses eating farmland. *Vancouver Sun,* 9 August 1991, p.B5.

-----, (1990). Farmers urge end to golf in ALR. *Vancouver Sun,* 6 December 1990, p.B8.

Raup, P.M. (1975). Urban threats to rural lands - Background and beginnings. *Journal of the American Institute of Planners* **41**(6):371-379.

Rawson, M. (1976). *Ill Fares the Land.* Report by Macmillan Company of Canada Limited for the Ministry of State for Urban Affairs: Ottawa.

Rees, W. (1993). *Why Preserve Agricultural Land?* Report prepared for the British Columbia Agricultural Land Commission.

Rimmer, P.J. (1994). Japanese investment in golf course development - Australia -Japan links. *International Journal of Urban and Regional Research* **18**(2):234-255.

Robinson, G.M. (1990). *Conflict and Change in the Countryside.* Belhaven Press: London.

Rubenstein, L. (1993). How green was my golf course? *Globe and Mail* (Toronto), 19 June 1993, pp.A21-22.

Runka, G.G. (1993). Agriculture in the urban shadow. (British Columbia) Agricultural Land Commission's Symposium. Speaking notes - Draft. 9 March 1993.

Russwurm, L.H. (1977). *The Surroundings of Our Cities.* Community Planning Press: Ottawa.

Schuman, H. and S. Presser (1981). *Questions and Answers in Attitude Surveys.* Academic Press: New York.

Sewell, W.R.D. (1971). Integrating public views in planning and policy making. In W.R.D. Sewell and I. Burton (eds.), *Perception and Attitudes in Resources Management.* Department of Energy, Mines and Resources: Ottawa. pp.125-131.

Sheskin, I.M. (1985). *Survey Research for Geographers.* Association of American Geographers: Washington, D.C.

Siegal, S. (1956). *Nonparametric Statistics.* McGraw Hill: London.

Singleton, R., B. Straits, M. Straits and P. Allister. (1988). *Approaches to Survey Research.* Oxford University Press: New York.

Smith, B. (1991). Mayor's data bad, golf course backer tells public hearing. *Times-Colonist* (Victoria), 11 January 1991, p.D10.

Smith, L.G. (1982). Mechanisms for public participation at a normative planning level in Canada. *Canadian Public Policy* **8**(4):561-572.

Statistics Canada (1995). *Agricultural Financial Statistics 1993*. Ministry of Industry, Science and Technology: Ottawa.

Statistics Canada (1992). *Agricultural Profile of B.C. Part 1*. Ministry of Industry, Science and Technology: Ottawa.

Statistics Canada (1990). *Postcensal Annual Estimates of Population for Census Districts and Census Metropolitan Areas, Volume 6*. Statistics Canada: Ottawa.

Statistics Canada (1987). *British Columbia - Agriculture*. Ministry of Supply and Services Canada: Ottawa.

Stix, G. (1994). Antigreen greenies. *Scientific American* **271**:86-87.

Stoddard, R.H. (1982). *Field Techniques and Research Methods in Geography*. Kendall/Hunt Publishing Company: Dubuque, Iowa.

Surrey Planning and Development Services (1990). *Golf Courses - Location and Development Policies*. Surrey Planning and Development Services: Surrey, B.C.

-----, (1986). *Surrey Official Community Plan*. Surrey Planning and Development Services: Surrey, B.C.

Thompson, S. (pers. comm.). British Columbia Federation of Agriculture, Victoria, B.C., 1991.

Times-Colonist (Victoria) (1992). Bill leaves farmland golf courses in bunker. 6 May 1992, p.D12.

Times-Colonist (Victoria) (1991a). Canadians riding crest of golf boom. 12 September 1991.

Times-Colonist (Victoria) (1991b). Freeze put on all farmland golf courses. 16 November 1991, p.A2.

Tomlinson, D. (1991). Keeping golf green. *Country Life* **185**(5):42-43.

Tourism Research Group and Mike Collins and Associates (1988). *Golf Tourism in British Columbia - A Market and Product Overview*. Report prepared for the British Columbia Ministry of Tourism, Recreation and Culture, Victoria, B.C.

Troughton, M.J. (1981). The rural-urban fringe - A challenge to resource management. In K.B. Beesly and L.H. Russwurm (eds.), *The Rural-Urban Fringe - Canadian Perspectives*. Atkinson College: Downsview, Ontario. pp.218-241.

Tyler, E.J. (1979). Planning public participation. In B. Sadler (ed.), *Involvement and Environment*. Environment Council of Alberta: Edmonton. pp.17-21.

Underhill, Brian (pers. comm.) Agricultural Land Commission, Burnaby, B.C. October, 1991.

United Nations (1989). *Prospects of World Urbanization*. 1988 Population Studies No.112. Department of International Economic and Social Affairs: New York.

Vancouver Sun (1987). Green adds sex appeal. 15 August 1987, p. E9.

Walmsley, D.J. and G.J. Lewis (1984). *Human Geography*. Longman Inc.: New York.

Ward, C. (1992). Fringe benefits. *New Statesman and Society* **5**(214):30.

Warner, K. (1988). Public involvement as planning communication. In H. Dandekar, (ed.), *The Planner's Use of Information*. American Planning Association: Chicago. pp. 125-139.

Warren, C.L., A. Kerr and A.M. Turner (1989). *Urbanization of Rural Canada, 1981-1986*. SOE Fact Sheet No. 89-1. Ministry of Supply and Services Canada: Ottawa.

Wheat, S. (1993). Playing a round with nature. *Geographical Magazine* **65**:10-14.

-----, (1993). Fairway folly - The other side of the Asian golf boom. *Geographical Magazine* **65**:12.

Williams, D. and A. Pohl (1987). Let them eat houses! The implications of urban expansion onto good farmland. In C. Cocklin, B. Smit and T. Johnston (eds.), *Demands on Rural Lands*. Westview Press: Boulder, Colorado. pp.85-96.

Williams, M. (1994). Making golf greener. *Far Eastern Economic Review* **157**:40-41.

Wilson, J.W. and J.T. Pierce (1984). The Agricultural Land Commission of British Columbia. In M. Bunce and M. Troughton (eds.), *Pressures of Change in Rural Canada*. Atkinson College: Downsview, Ontario. pp.272-291.

Wood, C.J.B. (1987). Agriculture. In C. Forward (ed.), *British Columbia: Its Resources and People.* Western Geographical Series **22**:139-161. Department of Geography, University of Victoria: Victoria, B.C.

World Commission on Environment and Development (1987). *Our Common Future.* Oxford University Press: Oxford.

APPENDIX 1
Pre-survey Questionnaire

This study is interested in finding out your opinions about golf course development on agricultural land.

1. What do you think are the issues facing farm operators in British Columbia?

2. Are you aware of the recent controversy concerning the development of golf courses in the A.L.R.?

Yes ___
No ___

3. Do you feel that golf courses should be allowed in the A.L.R.? Y __ N __

If yes, why?

If no, why not?

4. The Agricultural Land Commission must approve all exclusions of land from the A.L.R. or non-farm uses in the A.L.R. such as golf courses. What factors should the A.L.C. be concerned about when evaluating a golf course proposal?

5. Do you think that the current Provincial government policy pertaining to golf course in the A.L.R. development should be stricter (__), remain the same (__) or more relaxed (__)?

If stricter, why?

If remain the same, why?

If more relaxed, why?

Background

1. person interviewed:
   - single owner ___
   - joint family owner ___
   - joint owner ___
   - principal user (not owner) ___

2. Are you a full or part-time operator?:
   - full-time ___
   - part-time ___

3. Your age?: ___

4. Gender? M/F

5. How long have you been operating at this location?: ___ (years)

6. How long have you been a farm operator?: ___ (years)

7. What is the size of the property?: _____ (acres or hectares)

8. How many parcels?: ____

9. What does your farming operation produce?

_____

10. Is the property adjacent to a golf course?
    - Yes ___
    - No ___

11. Have you ever played golf?
    - Yes ___
    - No ___

    If yes, how often? _____ rounds per year

APPENDIX 2
Survey Questionnaire

This study is interested in what farm operators in the A.L.R. think the implications of golf course development are for farming.

A. Agriculture Land Reserves

This first group of questions deal with the A.L.R. Please check the category that best represents your level of agreement.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The A.L.R. is needed to protect agricultural land from urban development	O	O	O	O	O
2. The A.L.R. legislation alone cannot keep farmers in business	O	O	O	O	O
3. All the land in the A.L.R.'s is of good quality for agriculture	O	O	O	O	O
4. The Agricultural Land Commission's mandate concerning land use in the A.L.R. is too restrictive	O	O	O	O	O
5. The A.L.R. helps keep farmers farming	O	O	O	O	O

B. Golf Courses

Between June of 1988 and November of 1991, the Agricultural Land Commission did not have the power to stop golf course development in the A.L.R.

1. Are you aware of the recent controversy concerning the development of golf courses in the A.L.R.?

Yes ___
No ___

The following questions focus on the issue of golf courses in the A.L.R.

2. Based on your knowledge of the issue, how likely are farm operators to experience any of the following from golf course development in the A.L.R:

	Very Likely	Likely	Neutral	Unlikely	Very Unlikely
increased volume of traffic on rural roads	O	O	O	O	O
conflicts over water supply	O	O	O	O	O
more noise experienced by adjacent farm properties	O	O	O	O	O
increased trespassing on adjacent farm properties	O	O	O	O	O
increased vandalism on adjacent farm properties	O	O	O	O	O
increased property taxes for farmers	O	O	O	O	O
isolation of farm operation from the rest of the farm community	O	O	O	O	O
more residential development	O	O	O	O	O
higher land values	O	O	O	O	O
pressure to sell land for development	O	O	O	O	O
loss of available farm land to rent	O	O	O	O	O
conflicts with golf course management over farm operations	O	O	O	O	O
conflicts with golf course management over golf course operations	O	O	O	O	O

3. Do you think that the following implications of golf course development are good or bad?:

	Good	Equally Good And Bad	Bad	Don't Know
residential development	O	O	O	O
higher land values	O	O	O	O
offers from developers to buy farm operators' land	O	O	O	O

4. Please read the following statements and check the category that most closely represents your level of agreement with each.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Golf courses are urban land uses serving urban dwellers	O	O	O	O	O
Golf courses and farm operations can be compatible neighbours	O	O	O	O	O
A golf course could be converted back to a farm operation	O	O	O	O	O
There is a large demand for land for golf course development	O	O	O	O	O
The 1988 Order-In-Council which made golf courses an allowable farmland use in the A.L.R, should have been upheld	O	O	O	O	O
If a farm operator in the A.L.R. cannot survive financially he/she should be allowed to sell their land for golf course development	O	O	O	O	O
Regardless of financial standing, farm operators should be allowed to sell their property for golf course development	O	O	O	O	O
Golf courses should be allowed anywhere in the A.L.R	O	O	O	O	O
There is a need for stricter controls over locational siting of golf courses	O	O	O	O	O
Farmers can only retire comfortably if they can sell their land for an urban use	O	O	O	O	O
Golf courses should not be allowed on prime agricultural land	O	O	O	O	O
The Agricultural Land Commission should relax their criteria for golf course development in the A.L.R	O	O	O	O	O
If the public wants to save agricultural land they should buy local farm products	O	O	O	O	O
Once a golf course is allowed, residential development will follow	O	O	O	O	O
Golf courses should not be allowed in the A.L.R.	O	O	O	O	O
The Provincial Cabinet should not have the power to overrule Agricultural Land Commission decisions	O	O	O	O	O

C. Background of individual

1. Are you the

Principal	___	
Joint Owner	___	
Joint Family Owner	___	
Tenant	___	of this farming operation?

1a. If you are the principal, joint owner or joint family owner, how did you acquire the land?

purchased ___ inherited ___ other ___

2. Are you

a full-time farm operator	___
a part-time farm operator	___
a hobby farmer	___
or semi-retired	___

3. How long have you been the primary operator at this location (in years)? ___

4. How long have you been a farm operator (in years)? ___

5. What is your age? (in years)

20 to 30	___
31 to 40	___
41 to 50	___
51 to 60	___
61+	___

6. Gender? M/F

D. Activities

1. Have you ever attended a public hearing concerning A.L.R. applications?

Yes ___ No ___

2. Are you a member of a golf club? Yes ___ No ___

3. Do you want the A.L.R.'s to be dissolved?

Yes ___ No ___

E. Land Use

1. What types of farming production are you involved in?

Dairy	___
Fruits and vegetables	___
Livestock	___
Fodder	___
Mixed	___
Other	___

2. Have you changed your type(s) of production within the last 3 years?

Yes ___ No ___

If yes, what was the previous type of production? _____

3. What is the land use of the properties adjacent to yours?

_____

4. Have the land uses on the adjacent properties changed in the last three years?

Yes ___ No ___

If yes, what were the previous uses? _____

F. Size of Property

1. What is the size of your property (in acres or hectares)?

Rented ___ Owned ___

2. How many separate parcels?

Rented ___ Owned ___

3. Have you sold land since June of 1988?

Yes ___ No ___

If yes, was it for a farm use or non-farm use?

farm ___ non-farm ___

VITA

Surname: Siddon Given Names: Heather Elizabeth

Place of Birth: Ottawa, Ontario, Canada Date of Birth: 13/04/68

Educational Institutions Attended:

University of Victoria	1990 to 1995
University of Alberta	1986 to 1990

Degrees Awarded:

B.Sc. with Specialization (distinction) University of Alberta 1990

Honours and Awards:

Sarah Spencer Foundation Research Award	1992
Alexander Rutherford Scholarship	1986

PARTIAL COPYRIGHT LICENCE

I hereby grant the right to lend my thesis to users of the University of Victoria Library, and to make single copies only for such users or in response to a request from the Library of any other university, or similar institution, on its behalf or for one of its users. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by me or a member of the University designated by me. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Title of Thesis:

Farmers' Attitudes toward Golf Course Development in British Columbia's Agricultural Land Reserve

Author 
(Signature)

HEATHER E. SIDDON

December 7, 1995