

AGRICULTURAL LAND AND COMMUNITY IN BRITISH COLUMBIA:

UBC Research Farm and Oyster River Community -
Towards an Agri-culture

by

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Abstract

The Oyster River Research project begins by exploring the meaning of agriculture, the definition, the history, the cultural context of *agri-culture*, as well as the role of agriculture in our present day. An overview of the Agricultural Census 1992 is given to outline the Agricultural Industry past and present within Canada, and the major issues and constraints with regards to Agriculture in British Columbia are identified. Elements of farmland conservation, BC's ALR, as well as case studies and precedents regarding farmland conservation strategies are also discussed. From this research exploration, an understanding of the role and scope of UBC, the Oyster River Farm, and the surrounding community, locally and regionally is met, and programs capable of linking these issues are developed. These programs, in conjunction with the overall farm and community site design, exhibit the most beneficial means of defining and developing the relationship of UBC, the farm, and the community, while maintaining the integrity of agricultural land and the practice of farming for local food security. Ultimately, this design thesis offers a solution that attempts to serve UBC, the Oyster River Farm and the local / regional community in a manner most sensitive socially, ecologically, and economically to issues presently facing the Research Farm and the larger community of the Comox-Strathcona Regional District.

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**The well being of a people is like a tree.
Agriculture is its root,
Manufacture and Commerce are its branches
and its leaves.
If the root is injured,
the leaves fall, the branches break away,
and the tree dies.**

-Chinese Proverb (from Daniels and Bowers, 1998)

We must use our scientific knowledge to understand the possibilities of our environment and to design a quality environment future. We must use our understanding of the possibilities inherent in our technologies - indeed, in the new scientific method itself - and design a viable economic structure for our future. We must understand the possibilities inherent in our multiculturalism and social institutions and design a viable future for ourselves. Our world is increasingly complex and the consequences of action are increasingly large, whether for good or ill. If we cannot as a species master the process of transforming complexity into possibility, and from there design a viable future, then we shall simply be overwhelmed by it. Those who cannot master the possibility/design approach will never be able to understand and anticipate change. They will constantly defeat themselves through the unexpected consequences of their interventions, and will be constantly defeated by others who can master this method...In the world of the future, the people who survive will be the people who are able to develop new workable designs.

- C.A. Hooker, 1994: p37 -38

Vision Statement

To understand the diversity and complexities involved in the social, economic, and ecological aspects of *Agri-culture* as a *system*. And, from this understanding generate a design intent for UBC Oyster River Farm which demonstrates a progressive educational and experiential approach with a fundamental basis of sustaining, socially, economically, and ecologically, the UBC Oyster River Research Farm and its associated District Area as a viable *Agri-cultural* Community.

Key Words

***agri-culture*, systems, social, ecological, economic, research, education, sustainability, experiential, community**

Role and Scope of the Project

There are broad ranges of very complex issues affecting farm operations (i.e. NAFTA, WTO, and the Provincial and Federal statutes) that are recognized in the agricultural industry nationally and internationally. Yet, there are also a number of elements less broad based, which contribute to the viability of local farms. The focus of this thesis is not to analyze the broad and very complex parameters that govern the international and national market of agriculture. Though these issues are indeed pressing and do require consideration and effective decision and policy making, there are other sets of very important *local* issues that need addressing. This report attempts to view agriculture from the local level, to understand the role of community planning and development and its effects on agriculture. By using the Oyster River Research Farm as a case study, this thesis surmises the contribution and support needed by local/regional government, community groups, and institutions such as the University of British Columbia, to preserve and enhance the rural environment and the *agri-culture* of a local region.

This thesis is first and foremost a design thesis in landscape architecture. The design solutions offered are considerate of the existing land use, land capabilities, topography, soils, required density, open space requirements (as outlined by the Regional District of Comox Strathcona), hydrology, environmentally sensitive areas, existing vegetation mosaics, etc. These design solutions also meet community needs by providing experientially rich natural and built environments, capable of providing wonderful places for every day activity as well as recreation, education, celebrations, and ceremonies. Case studies supporting the programs proposed (i.e. Community Supported Agriculture, Agri-community Education Centres) have been provided. A complete economic feasibility study of the proposed design and associated programs was not within the scope of this project.

Introduction

“Why do we need agriculture if we have supermarkets?”

-Anonymous University Student

Food is fundamental to our well being. Yet, among the majority of Canadians the significance of food production is poorly recognized and generally not understood. For many, food supply originates at the supermarket, and thoughts regarding farming and food production go no further than the produce, dairy, or deli section of our nearest Safeway.

For most British Columbians a constant and secure food supply of highest variety and standard at a very reasonable price, year round, is reality. For many other parts of the world, food lines, hunger, and food shortages to the point of starvation, is far too common. The number of people in need of food is growing rapidly, births over deaths world-wide equals a new City of Vancouver every two days (ALC Report, 1999).

Farmland is part of our global life support system. And as such has a broad and fundamental role in the sustainability of ourselves and of our planet.

As the population continues to grow there will be increasing demands on the world's resources for development, recreation, forest and mineral products, energy, water, and food. The complexity of providing these necessities for the growing population while maintaining the integrity of our environment has, of late, come to the forefront of planning and policy making at the local and global level. Coinciding growth / development and environmental issues is the realization that traditional economics has failed to recognize the value of many systems from an “ecological” or “life supporting” perspective. Monetary gain has been received for activities which contribute to the destruction of our environment and the irrecoverable use of fundamental resources that we depend on for survival. The costs of critical elements and processes of our natural systems, ‘natural capital’ such as photosynthesis, the ozone layer, soils, etc. have been neglected in terms of market value in traditional economic scenarios (Rees 1996).

To address these intense economic, environment, and development conflicts, solutions focusing on balancing economic, social, and ecological issues have been sought. In order to ensure an adequate quality of life now and for future generations, policies that address resource and "natural capital" permanency and equitability are beginning to be established. Sustainability has become the 'buzz word,' and implies social, ecological, and economic balance as well as the notions of permanence and equity. Many government bodies world wide are beginning to further define and incorporate sustainable planning and practice into policy and decision making.

In British Columbia, a sustainable future has become a major goal (CORE 1994). Promoting and planning for food security and a sustainable *agricultural* system is thus an objective, a means of achieving the Province's broader goal of a sustainable future. To incorporate sustainable objectives into the agricultural sector, there must be greater thought put into the planning of long term agriculture in British Columbia. Agricultural issues must be addressed from the point of understanding and evaluating agriculture as the "highest and best use of our farmland resource" (ALC 1999). This means that future planning and policy should ensure that agriculture is not jeopardized, and in turn should serve to enhance the agricultural enterprise and agricultural communities now and for future generations.

Ultimately, a holistic approach to addressing issues must be maintained in order to ensure the viability of Agriculture. This means planning and management for not only British Columbia's Agricultural land Reserve, ALR, but for the surrounding community and the greater environment of which the ALR is a part. To provide a working agricultural scenario that facilitates the elements of farming and agricultural production, the larger environment must also be a viable scenario. This wider environment must provide "for the broadest possible number of agricultural opportunities over the broadest possible extent of our agricultural landscape." (ALC 1997). The scenario must work to sustain agriculture, yet as indicated, sustainable agriculture is possible only within the realm of a larger sustainable *Agri-cultural* community.



Part I Agriculture in Theory

Section 1.1 *Defining Agri-culture*

The business of gaining the right conception of agriculture...stands at the centre of gaining a right conception of our whole civilization, of our historical tenure of this planet and of our future potential as a species. More than for any other study we may see our little cosmos reflected in agriculture's grains of turned sand. (Hooker 1994: p3)

Agriculture: (Latin *agricultura*, *ager*-field + *cultura*-CULTURE) The science and art of cultivating the soil; including the practice of growing and gathering crops and rearing livestock; tillage, husbandry, farming in the widest sense. (Oxford English Dictionary, 1993)

culture 1. A cultivated field or piece of land. 2. The action or practice of cultivating the soil; tillage. 3. The action or practice of raising a crop or raising certain animals. 4. The cultivation or development of the mind, manners, etc.; improvement by education and training. 5. Refinement of mind, tastes and manners; artistic and intellectual development; the artistic and intellectual side of civilization. (Oxford English Dictionary, 1993)

Agriculture is the material root of our very culture. It is the great system difference exhibited from 20 000 BC between hunter gathering societies dependant on a rich naturally governed ecology, to a more sedentary societal structure dependent on a simplified system of select plant and animal species (Hooker, 1994). The understanding of *agri-culture* and its significance in the making of our civilization is supported in the semantics of the word *culture*. Within the word cultivation and culture is the root *cultus*, to care. Within *cultus* is the Sanskrit word *kwei* meaning to dwell with and to care for. Such terms lead us back to the notion embedded within the word agriculture, "to dwell on the land and to care for it." (Rowe, 1990).

This root 'culture' reinforces the significance of our past relationship to the land and the agricultural values that have influenced the making of our societal structure and our very culture. Yet, the last forty years have marked an unprecedented change in people and land relationships. Science and technology have been at the forefront of our socio-cultural realm, and their rapid advancement has had a significant influence over culture.

In *Notes Towards the Definition of Agriculture*, Hooker (1994) defines three fundamental elements of culture as outlined by T.S. Eliot (1948):

1. A growing, developing structure which will foster the heredity transmission of culture within culture.
2. A culture should have a detailed regional variations which fit it intimately to local conditions.
3. A culture's major institutions should show a richness of diversity within unity.

Hooker (1994) further defines culture as a number of people within a particular environment that share a "*collection of beliefs, values and cognitive and emotional attitudes and processes.*" Hooker states that this collection of people share tools (technologies), systemic practices and institutional arrangements and lifestyles in such a manner as to ensure sufficient human and environment stability. This human and environmental stability enables 'cultural' adaptation, while at the same time stimulating and maintaining a quality of richness capable of supporting "*individuality and creative variation and adaptation to local conditions.*" And ultimately, "*sufficient adaptability to accommodate environmental and internally generated change, and sufficient self-organization to continue to develop in complexity*" (Hooker 1994).

To many, this definition of culture leads one to question whether our current "western" social structure has a distinguishable culture. And, whether current societal systems employ the collection of beliefs and the tools or technologies, which serve to ensure *human and environment stability*. Many argue that our society structure, intertwined and taken over by industrio-technology, "*produces a rate and pattern of change that undermines all stability and ultimately the foundation for adaptability as well.*" (Hooker,

1994) And, that this expansive rate of change has caused an unprecedented rate of ecosystem and human cultural extinction.

Ultimately, this dilemma so concurrent in our present systems leads to questions of whether we in fact have a viable culture. And, this confusion over culture, or lack of culture, manifests itself throughout many systems. For instance, if our science and technology based society lacks a viable culture, is it possible to have an *agri-culture*? Or, have our traditional agricultural systems inherent in a *past* culture been surpassed by an agri-business or agri-industry, which relies on the rapid rate of change and the saving grace of science to combat the very ill effects its technology creates.

And now today [we] see[s] the final industrial assault on the farming community, the agro-industrialization of farming which will complete the century-long process of uprooting farmers from their communities, of transforming farms from places of cultivation (culture-ation) into places of industrial exploitation - in short, the unsettling of America. (Hooker 1994: p11)

Defining and understanding *agri-culture* is indeed a challenge of our time. The advancement of science and technology has had tremendous effects on our culture and the very systems that have been involved in our cultural evolution. Today, like never before, we are faced with the challenge of re-evaluating and re-defining systems such as *agri-culture* in a social structure that has become ever increasingly devoid of traditional human / land relationship (Scarfo, 1988). This dilemma has not gone unnoticed. Many of the problems, issues, and concerns of agriculture are common to many other cultural systems, and can be considered a net result of a larger science and technology societal structure based solely upon our current '*industrial-economic*' paradigm (Dover and Talbot, 1987; Daly 1987).

The technological era has come upon us so quickly and influenced so strongly. We are learning now that these technological advancements have not developed without significant costs – including detriment to the environment, and added stress and complexity to our social systems. And, many are beginning to question whether contemporary scientific and technological breakthrough is indeed the complete answer.

For agriculture, the dependence on fossil fuels, pesticides, chemical fertilizers and other such current methods of practice may in fact jeopardize the well being, the permanence of the system as a whole. These and other such concerns have begun to foster a re-evaluation of technological breakthrough in agriculture and other industries, and have ultimately forced greater consideration towards ethics, environment, and the socio-cultural systems that govern us.

Unless as agriculturists we accept a shift in our thinking and practices of the magnitude of a new paradigm, agriculture and the environments in which it is practiced will be pulled into an ever-declining devolution with catastrophic effects on the well being of mankind and of the environments in which it lives. The systemic paradigm calls for us to rethink our views of our world (and of the way its interrelated components are patterned) as well as our ways of going about the way we view our world...In sum, we must be prepared to let go the old and embrace the new science and praxis of complexity. (Bawden 1990 in Hooker 1994: p22)

Section 1.2 Agriculture Canada – A Brief Overview

Agriculture as our forebears knew it was the art and science of taking and alien landscape, with its own interests, purpose and dynamics, and transforming it into and artificial condition where it yielded maximum value to the human subsystem. (Hooker 1994: p3)

Agriculture is one of Canada's primary industries, contributing to the GDP at the third greatest rate. Agriculture follows mining and oil in GDP contribution, but lies ahead of forestry, fishing and trapping. Only 7% of Canada's landmass is used for farming, yet agriculture is one of Canada's major industries. Canadian farms provide most of our food as well as many non-food products. Though the land base indeed seems a small proportion of Canada, seven percent of Canada's land base (68 million hectares) is approximately 3X the land base of Great Britain (AgCanada 1994).

Today, approximately 391 000 people operate farms that contribute to Canada's food sector. The industry also supports jobs for approximately one million people in the areas of food processing, packaging, transportation and retail. Agriculture contributed 4.23 billion to the GDP in 1992, and the food processing related to agriculture contributed another 3.6 billion.

Canada is a net exporter of farm products. The highest net export product is wheat 39% is exported followed by "other" 27% and live animals 11%. In 1992 the value of total exports was 12.1 billion while the total import was 9.8 billion. Canada exports the majority of its agricultural commodity, wheat, to the former Soviet Union, China, Korea and Japan. The majority of its live animal exports are to Japan and the US.

Canada imports 12% of fresh vegetable products and fruits primarily from the US and Central and South America. Australia supplies most of Canada's coffee, tea and cocoa. The types of products that we eat in Canada are a result in price and nutritional needs, but other factors such as culture and food customs, advertising, packaging and lifestyle greatly influence products consumed (and to a lesser extent) grown in Canada.

Mixed farming is supported in Canada, there is a diversity of products throughout Canada. There is also a diverse array of farm numbers, farm types, and farm incomes amongst the provinces. Ontario has the largest number of farms in Canada, 68 633; followed by Saskatchewan, 60 840; Alberta 57 245; Quebec 38 076; Manitoba 25 706; and BC 19 225. There are significantly fewer farms in Newfoundland, Nova Scotia, PEI, New Brunswick, and none reported in the Yukon and NW Territories.

The total number of farms of the Canadian Agricultural Census has steadily declined from a high 733 000 farms in 1941, to a total of 280 000 farms in 1991. This rapid decline over the last 50 years has no doubt had an effect on farm culture, and rural communities in Canada. In 1941, a total of 3.3 million people, nearly one third of Canada's total population of that time, were living and working on farms. Fifty years later however, there is a total of 280 000-census farms. Currently, only 3% of Canada's population live and work on farms (AgCanada 1994).

Though the numbers of farms have decreased enormously, the total area of working farmland remains relatively the same. The average farm size has over doubled in size from 96 ha in 1941 to 242 ha in 1991. While the number of farms has dropped, those with annual gross receipts of \$50 000 or more (1990 constant dollars) has doubled from \$55 000 in 1966 to \$118 000 in 1991.

Operating arrangements have changed little on farms. In 1991, family farms accounted for 98.2% in 1971 99.5% of the farms were family run. However, more and more farms are now dependent on off farm labour to subsidize their farm income. The share of off farm work for income has grown from 35% in 1965 to 57% in 1991.

The general concept of farming, the reputation, and the public attitude towards farming and agriculture in Canada is poor. Canadian farm populations are very small and in many parts of Canada geographically divided from urban areas. In general, Canadians have little to no contact or interaction with farms, farm practice, and the overall production of food (AgCanada, 1994)

Of Canada's 280 000 farms, 62 % are run under an operator whose primary occupation is the farm, while 38% are maintained by an operator who has a main non-agricultural occupation, and who receives a smaller fraction of their income through farming (secondary farmers).

Ontario has the highest number of primarily farm operators in Canada; Saskatchewan has the highest proportion of farmers (primary and secondary operators) overall, with 71% of Canada's farmers live in Saskatchewan.

Farming in Canada has a very high farm exit and entry rate. The rate of exit from farms has been 33% each five years since 1966, however the rate of entry has been approximately 28% in each of these five years. Yet, there has been a steady decrease in the number of farm operators since World War II. Currently, the average age of farmers is approximately 54; BC and Newfoundland have the oldest farmers at an average age of approximately 58. There is indeed a growing concern throughout Canada regarding farms and farm operators for the future.

The average capital value for farms has increased for all farm types, but the farms located near cities have seen the largest increase in capital value. The maximum increase in value was seen in vegetable farms with a 71% increase in capital value and Dairy farms 51% increase in capital value over a five-year consensus period! The value of land and buildings alone in these sectors jumped 80% and 70% respectively. Wheat farms, on the other hand, suffered an overall loss of 6% capital over the five-year period. The growing demand for farmland near cities for development, has caused a vast increase in the land and infrastructure associated with agriculture, but has served to decrease the overall value and economic viability of the farm and agricultural practice within many rural communities.

The decrease in farms has coincided with the decrease in families farming. The Canadian family farm has changed dramatically over the last twenty years. And, the resulting farm operations have indeed challenged our romantic notion of the typical "family farm." Changes in society and the agricultural industry have driven the changes we currently observe with family farms, most family farms been forced to function as do more corporate farming enterprises geared less towards subsistence for the family, and more towards sales.

Section 1.3 Agricultural Issues of British Columbia

While many rural communities in Canada have suffered from a type of exodus of population from small towns to larger suburbs and cities, British Columbia has experienced quite the opposite effect. In 1991 the rural "non farm" population outnumbered the rural "farm" population by 9 to 1. Between 1986 and 1991, the Province's rural farm population decreased by 1420 persons, while the non-farm population increased by 43 560 (ALC, 1998). This type of population dynamic has a great impact on the rural setting, and indeed the rural farmland. There is a strong influence of urban perspectives that are carried into the once rural environment; the heavy influx of individuals in such a short period of time transforms the rural community.

The challenge of agricultural land preservation has been facing BC for the past 25 years. In 1973 the Agricultural Land Reserve was established as a means of protecting viable land for agriculture from development. However, the terms conditional policy and provincial interest haven't completely supported the designation of the ALR and though conceived to alleviate the conflict between Agriculture and development in many cases the ALR has only enhanced it.

Land use conflicts prevail, as misconceptions and misunderstandings of the working agricultural landscapes become the forces behind management and planning. An "urban" invasion makes the once rural agricultural landscape an immense challenge to manage and farm. Farms operating in such conditions have had to spend increasingly amounts of their time simply defending their right to farm within designated agricultural zones. Differing perspectives in these rural estate areas have become quite apparent when farmers need to gain specific endorsement for expanding or diversifying a farm operation in a farm area by way of a local bylaw amendment (ALC, 1998).

To many people agriculture represents a romanticized endeavor of farming activity and scenic vistas of a rural landscape. In British Columbia agriculture is a green break in an ever-increasing urban landscape. The "green oasis" as seen by urban residents is a nostalgic but very important relief and landscape setting for more urban communities. The appreciation of the open space that agriculture creates is important, however, the reality of this space should be recognized as a working landscape that includes activities less attractive with less aesthetic quality than generally perceived. The misunderstanding and/or the poor recognition of farming practices causes an unreasonable request to alter farm practices, especially in urban/agricultural areas where bylaws for the urban setting may not adequately respond to the requirements of farm life.

Agriculture has played a major role in the economy of British Columbia by not just providing farm products but by contributing greatly to the amenity value of the province. In BC rural land areas have increasingly become extremely attractive places to live, to visit, to study and to invest in. In turn, this interest in the amenity of the farm area has directly or indirectly effected the value of the products produced in the region. For example, the Okanagan Valley's on farm marketing, fruit growing and wine are

enterprises that have grown in response to the interest in the region. These enterprises, in turn, further contribute to the amenity value of the Okanagan. In many parts of the Province agriculture and tourism are seen as significant partners. Again, in the Okanagan and in many ranching areas of the province, effort is being made to further the links between these two industries. The Silmilkameen Tourism Association Vice President states that "Agriculture is certainly part of tourism, and given a higher profile it helps to make this Valley an even more unique place to visit" (ALC 1998).

Yet, the same amenity value that can improve the value of a local farm product, can severely jeopardize the very making of the product. The amenity value of our rural landscapes has encouraged many people to live and invest in these areas. But, the current rural / estate residential use of agricultural land creates intense land use conflict, and in some cases greatly impacts viable agricultural production.

To particularly the elderly and the young, agricultural landscapes offer a safe, viable and highly desirable area for recreational opportunity, more so than many parklands with a more rugged terrain and/or a further locale. This is supported by the survey that the GVRD produced which found high participation in activities that included walking for pleasure, sightseeing and viewing the landscape, driving for pleasure and biking. Farmland indeed offers the amenities for these activities, and could, if appropriately managed and designed, be an interesting and attractive area for such recreation to be carried out (ALC 1998).

It is important that the farmland is respected and recognized as a working landscape. Several conflicts can result in recreation and agricultural interaction. Problems with increased traffic in an area inadequate and poorly designated parking, trespassing into areas not appropriate for recreational activity or into the boundaries of the farm home and business centre, littering and vandalism.

Ultimately a 'Country User Code of Ethics needs to be developed in order to establish a positive recreational and farmland interaction. Maybe this would include a small user fee or a tax for the people in the area that wish to use the farmland for recreational purposes. This would cover costs associated with planning and upkeep of trails, and would serve to increase the value of the farmland for recreational purposes. However,

management must ensure that the recreational activities do not overshadow the effort to support the farming activity of the area. Planning should ensure that heavily used park and recreation facilities remain in the urban development area, agricultural land should not be recognized as a viable location for sports fields and facilities. These types of uses should be accommodated for in the urban area. The use of density bonus techniques and other such planning strategies should be used to accommodate urban activities while maintaining the desired residential density scenarios, etc. (ALC, 1998)

Another key issue that relates to the transformation of the rural landscape, is the escalated land prices that form as a result of residential real estate value. The investment into large homes, accompanied by tennis courts, swimming pools, and extensive landscaping on land within the agricultural land reserve escalates the land value, and contributes to a significant amount of *not used* or *underutilized* viable agricultural land. Portions of land in these cases that are used for agriculture purposes are usually leased to local farmers on a short-term basis. Yet short-term lease arrangements do not harbour the stability for a viable agricultural operation, or the incentive for stewardship management.

Currently, the extensive capital investment of farm operations is in the land and buildings. For the average BC farm, land and buildings make up approximately 86% of total farm capital (1986); the remaining 14% constitute machinery, equipment, livestock, and poultry. This percentage, again, is an average of all farms, and though very high in itself, farms nearer urban areas have an even higher capital associated with land and buildings. Ultimately, the rise in land prices whether they are due to proximity of urban areas, estate ownership, or an absentee landowner, offset the "highly specialized, heavily capitalized and fragile agricultural economy and the family farm ownership structure" (ALC 1994). Inflated land value, land speculation and absentee owners indicate an uncertain future for both agricultural land and agricultural production, and undermines the present and future success of traditional agriculture and agricultural communities in BC. Current land values, and associated speculative scenarios foster a major transformation in our agricultural sector towards a more corporate, large scale farming system; or, no agricultural sector at all and a dependence on import commodities to sustain us.

Farmers have become caught in the romantic ideal of their farmland as a managed greenspace, and in British Columbia the problem may be that this idealized perspective manifests itself in some land use regulation policies, and thus makes farming in its real sense more of a challenge. In fact many farmers are concerned that the general population has seen only the greenspace, and has failed to recognize farming and farmland as a working business and land base. Ultimately, the public poorly understands farm practices for production.

Farmland is a dynamic landscape that changes not only from season to season but from type of farm production, type of technological methods of the farm and type of market values the farm is faced with. Farmer's are often concerned that people are not looking beyond the greenspace and towards the necessary activities of the farm and the working landscape. Farming involves wide range of activities from farmland stewardship, to production, as well as some on farm processing and direct marketing. Farming often relies on the use of noisy machinery and sometimes delivers unappealing odours, farmers do not necessarily follow regular working hours. They often work extended hours into the late evenings during harvest time and are definitely up early during milking, feeding and other such times.

In some communities plans and bylaws can restrict viable agriculture rather than promote it. In instances where the non farming community outnumbers the farming community, issues directly related to farming practice such as diking and water authority are made to the detriment of farm activity. Ultimately, planning and management should ensure that farming sector is adequately represented, and should strive to provide policy which promotes opportunities for diversification and appropriate development of agriculture, rather than hinder it.

Many communities and regional districts are adopting strategies to facilitate an "up not out" approach to planning. Planning for development that accommodates complete, compact communities with appropriate densities offers a progressive approach to accommodating both agriculture and development. Long term planning for the preservation and protection of agriculture will serve to stabilize the agricultural community. And, planning and designing complete *rural character communities* that are

intimately tied to the local agricultural operations will serve to enhance the social and economic well being of agriculture as well as the larger community as a whole.

Many issues and ideas generated in this section are a result of the information gathered, analyzed and discussed in the Agricultural Science 410 recently taken. A model outlining agricultural issues in BC generated in this course appears in Appendix One.

Section 1.3 Education and Agriculture

The basis of dynamic and thriving communities is knowledge: cultural information shared across generations and community members through relationships, community schools, and experience. Agricultural knowledge is the root of agrarian culture.

(AgSc 410, 1999)

Until fairly recently, much of what people knew of the natural world had been learned from their experience of growing up and working with, or, visiting farm landscapes. Farmers were, in a sense, a school of natural history, ecology, soils, seasons, wildlife and animal husbandry and land use. Some argue that the loss of farm experience first hand has effected our understanding of the natural world of ecological processes and the larger environment. For many the farm served to teach directly "the relationship between our daily bread and soil, rainfall, animals, biological diversity and natural cycles...which is to say land stewardship" (Orr, 1990). Farms also taught human qualities such as "the importance of patience, hard work, self-reliance, practical skill, and thrift"(Orr, 1990).

The push of science and technology, the "production" paradigm of the last fifty years has shifted Agricultural education from a practical learning experience (with a liberal arts, social, and human / ecological systems) to a much narrower focus. Many university and college programs focusing on agriculture are being criticized of being too heavily geared towards increasing food and fiber production by the application of technological and scientific advancement while ignoring the basics of farm practice and the significance of the larger community and environment in agricultural systems. Agricultural education

has become a predominantly "indoor" experience, and rather than encouraging agricultural students to "understand and become a part of the land," most teaching and learning occurs within the lecture halls, the library, the science and the computer laboratories.

Some argue that the nature of current agricultural education must be shifted, and that the loss of intimate experience and understanding of the land, must begin to be re-addressed in our cultural and education systems. David Orr states that education should be conducted in 'college farms.' Orr envisions such colleges as working farms which teach values of "discipline, physical stamina, frugality, self reliance, practical competence, hard work, cooperation and ecological competence." (1990). The opportunity to provide an interdisciplinary approach to learning focusing on sustainable agriculture, ecology, botany, zoology, animal husbandry, entomology, soil science, ornithology, landscape architecture and land restoration, mechanics and engineering, solar technology, business operation, philosophy, and rural sociology. Orr suspects college farms could serve as the stimulus for the revitalization of rural areas. Such working educational farms could focus research on biological diversity, conservation, and stewardship for agriculture and development.

College farms could be part of a global effort to reduce carbon emissions resulting from long distance transport and sequestering carbon through agro-forestry and tree cropping. Focusing closed organic waste systems could develop soil amendment strategies. Education should push to drive the design and operation of farms and surrounding rural communities that thus may offer viable solutions to current issues. Such a learning system would serve to transform the nature of the university as an unimaginative, inflexible, remote institution to an agricultural education centre intimately linked to the rural community and the regional environment which ultimately serves to foster the conception of sustainable societies.

Many agribusinesses in British Columbia have initiated agricultural awareness programs in the form of field tours and exhibitions, newsletters, classroom visits, public forums, etc. Yet, there is a disjoint nature to these programs, and not all areas of agriculture are represented equally. Each program tends to offer a biased position on its industry and may not highlight the systems approach to agricultural practices. Education and

awareness programs for agriculture should serve, ideally, to offer a comprehensive education package. In BC specific organizations need to be formed to coordinate the activities of these operations, ensure fair representation of each industry, and promote public involvement in awareness programs. Ultimately, agricultural "colleges" as outlined above which focus on agricultural issues for the purpose of community education awareness, agricultural research and innovation, and effective extension services would be very beneficial throughout British Columbia.

Areas of focus agricultural education should explore include (AgSc 410, 1999):

- farm extension and research
- field and agribusiness eco-tours
- agricultural education, urban agriculture practice, soil conservation, integrated pest management, dairy production
- public interest courses offered in areas such as: composting, rooftop gardening, understanding organics, understanding agricultural practices
- information pamphlets delivered to local residents explaining what to expect when living alongside farming operations. One such pamphlet currently available from the provincial government is called *The Countryside and You--Understanding Farming*.
- public agricultural festivals, celebrations, feasts, markets, opportunity for community involvement days
- coordination of research efforts made by interest groups such as the Delta Farmland and Wildlife Trust and the Delta Farmers' Institute
- create interest and financial support for local interest groups by inviting them to offer lectures and courses
- allow space for the sharing of concerns of the rural and urban public

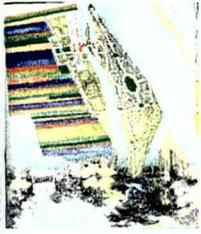
As the gap of understanding between urban life and food production grows wider, our children, in particular, are more removed from farms, farm practices and rural communities. To ensure a more food secure world, these future consumers must thoroughly understand the nature of our food production system and its place in global, national, provincial, and local economies. Ultimately, agricultural studies should be incorporated into the school curriculum at elementary and secondary school levels. This

adoption will necessitate teacher retraining and curriculum support material development. Such training and teaching material is available to teachers through the Ministry's Agriculture in the Classroom program. Further educational experiences for our young may include (AgSc 410, 1999):

- agricultural career preparation programs and job-shadow opportunities for public school children
- summer employment opportunities for high school students in BC's agribusiness
- field and business tours
- labs and tutorials done in conjunction with local landowners, farmland and First Nation's Council

By educating the young through efforts like Agriculture in the Classroom, Community Colleges of Agriculture, Community-based Agriculture and Urban Agriculture programs, agriculture, and the critical aspects of food production, can be communicated.

Education and greater awareness would lead to a more accurate understanding and better overall perception of agriculture within our socio-urban realm. *Education and awareness are the cornerstones for change; protest, action and determination are required to keep agriculture viable* (AgSc 410, 1999).



Part II Agrarian Precedent and Case Studies

Section 2.1 Rural Imagery and the Quality of the Rural Environment

What is the image of the rural environment? The mental pictures that develop the rural image serve as a basis for the decisions and actions effecting rural environments - actions such as preservation, growth, and enhancement. Ultimately, we must address the existing elements and the 'imagery' of rural environments. There is no universal rural image- however there are significant landscape types as is described in the latter section.

Generally, the rural image may include scenes of open country, a collection of farms, or a single barn. More recent rural images in some areas may be a vastness of mono-culture crops - field after field with no signs of life apart from the single food source and machine which will harvest it (Nassauer, 1998).

In Junszek's research the farmers of South Central King County Study found images of the rural environment to possess elements such as:

“...solitude, not having a lot of people around...”

There is a great difference between how the general public and the farmer access the same rural environment. These differences of interpretation of a rural setting may be a result of the different vantage points the farmer and the non- - farming public have. This difference in view reflects a difference in vantage point - and ultimately leads to a differing perception of place and of rural images (Junszek, 1992).

The farmer is an intimate member of the land he works upon. He/she moves about the land and is able to view every area the landscape unfolds. The public on the other hand, has a highly restricted view of the rural landscape - limited to few if any rural access points which penetrate the rural domain. Much of what the public sees is taken from the “linear, directional and sequential sit of rural vantage points, offered by the rural road... [the public's vantage point] begins [and ends] at the side of the road” (Junszeks 1992).

Ultimately, Junszek's study (1992) confirmed open space created by farmland is a valuable attribute to rural areas in the eyes of the public. Coincidentally, open land or significant farm fields are necessary to sustain the activities of the farmstead. "Farmers view land as precious, a valuable and finite resource" (Junszek 1992). To protect the rural imagery, the quality of the rural environment in the public's eye, significant portions of open space must be retained. This in turn can serve to protect and preserve farmland and the practice of farming. By preserving the open space of a region or community, the rural quality, or character of an area will be maintained. Thus, community development which focuses on maintaining open space and open space systems will in turn successfully maintain the rural imagery and quality of a place.

Section 2.1 Phenomenology and Agrarian Typology

Palazzo Rossi, the
Portico of San
Luca, and the
California towns
of
Sonoma and
Lompoc, are
examples of landscapes
arranged in
agrarian patterns.

Agrarian gardens,
rural and urban,
are eternal (if
ignored as
ignoble), constant
and seasonal,
utilitarian and
splendid."

- Solomon 1998

The gods have always lived in clearings, sacred groves, or green theatres enclosed by special walls (Solomon 1998).

Phenomenology can be understood as a shared, public understanding of our natural and built world, and a formulation of common relationships with the natural and built world. The term refers to the physical embodiment of the subjective, and has become a significant component of art and design as an attempts to overcome the conflict between the Realists, analytical form follows function approach, and the intersubjective understanding of form as a spiritual, intuitive encounter of place. Many forms in our built and natural world are strong phenomenological elements, for instance a church is distinctive structure in real terms, and often follows a particular form based on function. Yet, a church also has significant intersubjective qualities of a spiritual place recognized world-wide. Elements of our built and natural world that hold phenomenological meaning are refereed to as 'types' and form design typologies of a place. A church is a type of architectural form, and thus serves as a typology of form, function, and meaning.

From a landscape architecture perspective, the relationship between people and their environment is shaped by spatial experiences. Experiences in a clearing or in the forest, on the ridge or in the valley, have recognizably different qualities. A person's position in the landscape can generate a certain feeling, and can at times evoke potent emotional responses. Many landscape conditions can be understood as various types. For instance, an orchard is more than a grid planting of fruit trees to optimize sun exposure; it is also uniquely sacred in its degree and type of enclosure (Owen, 1997).

An agrarian typology can be explored through the uses of examples from Patrick Condon's *A Built Landscape Typology*; Terry Harkness's *Illinois Regionalist Gardens*; Barbara Stouffer Solomon's *Green Architecture and the Agrarian Garden*; and from the Courtenay / Comox Valley regional vocabulary. Understanding various typologies, especially those rooted in agricultural context, provides a basis for design typology and vocabulary for the Oyster River Farm and community.

Some agrarian typologies include:

Vegetation

- pasture
- garden
- clearing
- bosque

orchard
single tree
forest
allee
hedgrow
crops
fields
bluff

Water

slough
swales
floods
ponds
rivers
streams
well

Farmstead

farmyard
entry
drive
farm yard
farm house
hamlet
gardens
vegetables
flowers

Outbuildings:

barns
sheds
bins

Built Environment

building
house
barn

silo
bunker
cottage
lane
driveway
cart track
storage
shed
garage
fence

Structure

rows
horizons
views

Patrick Condon expresses 'type' as a "language system [which] exists half in reason and half in imagination" (Condon 1994). Condon explains that a "human creative spirit" is expressed in the landscape as a formally identifiable types. The notions of definitions of space within the larger landscape are referred to by Condon as "rooms in nature" (1994). In the design of our modern world, these rooms are often neglected and in many conventional designs the meaning of many types of landscape rooms has been lost (Owen 1998). A recent movement has begun to "recapture the names of these forgotten rooms" (Condon 1994), and rediscover the spatial experience relationship of different types of rooms in nature. What is the significance of the cloister, the single tree, the forest, the backyard, the promontory, the clearing, the bosque, or the orchard? Condon (1994) describes the phenomenology of these typologies and identifies their importance and their value as a design vocabulary. Below I have identified particular 'types' defined by Condon (1994) and similarly outlined by Owen (1998) that exemplify an agrarian typology and thus provide an appropriate design palette for the Oyster River Research project.

The Clearing

The clearing is the recognized as a room distinct from the forest. A clearing results in a new type of productive place, where a myriad of different plants and animals flourish from the sun. The clearing is also important to people – it is recognized as an icon of human settlement. The clearing is maintained at a human scale. When the clearing is no longer maintained, *the forest returns, indifferent to the temporary disruption, unmoved by the order that was struck* (Condon 1994).

The clearing is an open space, walled in by an edge of forest. Edges in themselves are places of differentiation and foster new and interesting relationships between the again the clearing and the forest – the edge is a unique condition that arises when two things meet one another. The clearing stands as an opposite to the forest. *The duality of the clearing has made it a magnet for meanings. Clearings figure prominently in the myths of many people from forested landscapes* (Condon 1994).

The Bosque

The bosque is a pattern chosen by humans. It may be a grid...or random...certainly farmed inside this subtle order, the terrible forest becomes the beautiful bosque. The bosque of trees, in the open landscape, fixes a vortex in profane doldrums. The bosque was the first temple, with the gods enclosed by phalanx after phalanx of guarding tree trunks (Condon 1994). The bosque is the place of the tree, created by the presence of the tree and about a relationship between us, the tree, and beyond (Owen 1998). Bosques are designed for pragmatic, sensual or spiritual purpose. They include places of timber production, a shaded place to picnic, a quiet retreat in which to sit and ponder, or a setting for a religious gathering. *Wherever it is, the bosque establishes the dance of oppositions between what nature gives, the expanse and the seed, and what humans impose, the bosque* (Condon 1994).

The Orchard

"The orchard is the paragon of how and why humans order nature's materials (Condon 1994). An orchard is an arrangement of what were once Nature's trees into a strict geometric ordering to maximize each plants exposure to the sun's rays and create and

well ordered, productive space. Through what people have termed as natural selection, as well as the placement, pruning, and care, the trees of an orchard are made to perform and produce for people. The orchard represents a 'scientific' or 'rational' relationship between nature and human order. "The orchard rests dormant through the winter and with the arrival of spring is transformed by an urgent pulse into a beehive of activity...the fruit follows the flowering. The orchard is a metaphor for life: birth, growth reproduction, death and rebirth." (Owen 1998)

The Hedgerow

Hedgerows are represented as a single line of trees or a dense rows of shrubs. Hedgerows create strong definitions of edges and give structure to their associated landscape, as well as provide breaks from the wind, and wildlife habitat for a diversity of species. Hedgerows often arise along the unplowed periphery of agricultural fields. Some hedgerows are associated with stone walls made from fieldstones. Hedgerows "form a linear geometric grid in areas typical land subdivision or act to highlight any other type of more organic form...agricultural character of [an area] would be improved through the use of hedgerows in the design vocabulary" (Owen 1998).

The Allee

Linear corridors are strengthened and enhanced by a double row of trees - the allee. An allee provides definition to a street, a country lane, a roadway and a path as well as qualities of shade, filtered light, and protection. This simple, splendid alignment also provides a strong visual axis in the landscape to locales near and far. Travel through an allee has a majestic feel, an ordered, timely procession to any point of destination.

The Forest

The forest is an element of the landscape rich in mystery and appeal. Both fear and comfort are emotions capable of being thoroughly explored below the canopy of a west-coast forest cover. Forests harbour the growth of many unique wildlife and vegetation species. The complexity of the forest floor encourages imaginations and the mind to run wild, vigorously exploring the many unique qualities camouflaged amongst abundant growth. "The nature of its density and its quality of light figure prominently in the imaginations of all west coast children and indeed all west coast people, past and present" (Owen 1998).

Condon suggests typologies as starting points for the development of a design vocabulary. Condon states that a typology “by itself is nowhere near enough” (1994). Rather, types must be combined with an understanding of the site, its past its future, its specific material language, and the design language of the human activities proposed. (Condon 1994).

Section 2.2 Precedent and Case Studies:

Agri-communities Community Supported Agriculture Landscape Conservation Demonstration Farms

Historical Case Study #1: Palazzo Rossi

In the 15th century, the palace was built as a means to bring an urban environment into the countryside. The initial plans called for a village complex, with a lumber and paper mill on site, and stables along a canal channeled from the river Reno. The palace architecture is typical Gothic Renaissance, and the form of the original plan still exists today. The residential village (former palace) forms as a block around a central courtyard. This area houses larger private family residences as well as 30 smaller type apartment units. The current programming elements on the site include, a parking courtyard, a restaurant, a store, fishing pool, barn, soccer field, palace garden, and open meadow which hosts an annual fair. The integration of residential living and food production has been a major theme in Palazzo Rossi for the past 500 years. This unique settlement exhibits, in a very potent, beautiful manner the ability to integrate rural and urban imageability and function into a single locale.

Case Study #2: Farm Colony

Farm Development Corporation, INC. G.P. Edwards
Consultant: Michael Redd, Landscape Architect

Farm Colony, Greene County, VA USA 1975

Farm Colony is a year round agriculturally based community 33 km from Charlottesville, VA. In this agricultural - residential interfaced development. The area consists of 38 ha of homestead integrated economically, ecologically, socially and aesthetically with 60 ha of working farmland. The remainder of the site has been left as an ecologically significant woodland setting. The homeowners of Farm Colony receive the primary bid on all farm production which includes dairy products, vegetables and beef. Products not sold to the local residence are then distributed to larger market beyond the farm community.

The residents of Farm Colony have fee simple title to their lots, as well as a membership to the Farm Association which serves to administer the farm through a board of directors and farm manager. The original farmhouse has been converted to a community centre for the residents, to encourage social activities and community cohesiveness within the farming locale.

Lots and subdivisions are guided by restricted covenants. Homes and other structures are submitted to rigorous architectural review. Principle trees have been retained, and the use of off road vehicles and firearms is strictly regulated. Access roads which penetrate the farm are kept to a minimum, impermeable surfaced areas are found only within residential areas.

Farm colony serves as a precedent for farmland - housing integration; in a form which emphasizes "agri-community."

**Case Study 3# :The Agri-Community Joint Development of Farm and Suburb
Flying Hills, Reading Pennsylvania, John and Rahenkamp & Assoc.**

(ASLA Award winners for Community Planning 1981)

The agri-community is stated as a "rational alternative" to meet the needs of agriculture and the public interest of growth and development. In an agri-community farmers can serve as agricultural producers and partners in development. The social benefits are mutually gained as farmland is retained and affordable housing is developed. To ensure the farmland is preserved, tax development rights can be removed from the viable farmland, this type of scheme could reduce taxes and improve the net income for a farmer. This scenario also offers to the developer and soon to be residents a zero maintenance open space system, with little financial risk or investment. In addition to natural, physical and economic analyses, planning for agri-communities requires special attention the relationship between housing and farming operations. Residential units should be "buffered" from potentially objectionable aspects of farming such as livestock feedlots or intensive soil bound cropping systems. Farmers should ensure spraying of fertilizers, etc. is limited, and/or restricted to non-windy days.

In addition homeowners must acknowledge that they live in a predominantly agricultural district. The developer, through the homeowners association, should establish a fund to cover the pilferage and damage, and homeowners should sign a 'hold harmless' document related to noise, smell, and other incidental agricultural impacts.

An agri-community also offers great opportunity to utilize waste material from nearby communities. In many rural districts sewage treatment is a major public cost and often a complex problem for development. Agri-communities could overcome such constraints by utilizing the nearby farm as a means of recycling sewage wastes for fertilizer and energy (in the form of methane). Pennsylvania State University has found through scientific research, sewage effluent can produce larger crop yield with a reduced reliance on commercial fertilizers. Locally, Woodwynn Farms on Vancouver Island currently uses treated sewage effluent as a nutrient supplement for crop production. The resulting yield has been significantly greater, and Woodwynn Farms is currently looking to increase the availability of effluent for their farm – they can't get enough sewage waste!

Agri-business and suburbia are alike in their vast and sprawling pattern. The widely scattered nature of production, processing and marketing often harbours enormous costs to the consumer. In rural communities, housing is generally highly dispersed and town centres so thinly spaced, public services common among more urban locales are difficult and expensive to attain. Suburbia, on the other hand tends to sprawl and "gobble up" farmland and requires outlays for new facilities, without providing the necessary tax income to support the initial installation nor maintenance fees. Designing agri-communities in replace of traditional subdivisions can resolve the constraints listed above, and may offer a viable option for agriculture to continue and prosper in a region alongside development.

As we face a future with limited resources – both financial and environmental – the aggregation of products, labour, and services will be essential if we are to compete and cost effectively serve the broad public need. Only those farms and developments that make rational use of the land, as a finite resource, will succeed.

Case Study #4 : Bio-regional Farming – a model for farm city partnerships

River Brook Farms lies directly adjacent to the Eugene Urban District Boundary. City suburbs now neighbour the century old farm. To address these newest 'urban' issues facing the Walton family owned farm, innovative farm approaches, as well as the new accommodation of migratory farm workers – the 'Urban Support Group' - have been developed. A supporter of the farms initiatives is Thomas Forster, a member of the movement known as *Tilth*, a non profit association magazine geared towards the support and publication of biological agricultural methods.

Forster describes River Brook Farm as "bioregional agriculture - [a] relatively new concept of agricultural landscape design, that seeks to integrate the food needs of a region's population with the agricultural carrying capacity of that region as much as possible" (Forster, 1983). He further explains that the notion of urban populations actively supporting local farms is reemerging with a recent demand for quality produce and the recent associated higher transport costs of current production systems. Supporting Forster's theory, there has been an increase in farmers markets, roadside stands, U-pick operations, field gleaning organizations, and other forms of direct marketing within the US. Forster states that an emergence of "a shadow economy that could revive an intermediate scale of agricultural productivity that has been on the verge of extinction: the market garden or truck farm serving the fresh produce needs of urban areas" (Forster, 1983).

Supporting Forster's theory of local production for local consumption, the University of Oregon's Landscape Architecture Program began a studio known as 'Urban-Rural partnerships in the Willamette Valley.' The studio project was further developed to provide a working model of farm-community cooperation for farms in Lane County, including the Walton's River Brook Farm in Thistlebrook. The community farm partnerships proposed for Lane County followed a model common in Japan where agricultural co-partnerships of over 1000 participating families and 20 to 30 full time participating farmers is common – with over 50% of the consumers needs being met by such cooperative and community-farm linked scenario.

Another important element of the farm and farm management is the preservation of 'wild' margins of the farm that serve to provide wildlife habitat, natural transition zones from farm to communities, as well as "primary unit[s] of equilibrium biomass on the farm." These wild margins are also capable of providing an economic gain as sources of nutrients, fuelwood, aquaculture, as well as alternative agricultural products such as native berries and vegetation. Ultimately, Riverbrook Farms expects that future manpower and resources may allow these wild margins to become even further integrated into viable production/economic elements of the farm.

River Brook farms sees the urban support group as "capable for collectively raising capital for farm improvements, supplying part time labour, and managing specific units of the farm (Forster, T, 1983)," and thus helping the farm to achieve greater economic and ecological integrity.

While Congress debates subsidies to commercial farms, and large-scale agriculture does its extensive thing, smaller scale ventures such as Riverbrook appear to contain an important part of the future. (Forster, T, 1983)

Case Study 5# : Maine Farms Project

- Coastal Enterprises Incorporated internet resource jp@ceimaine.org

A project based on the belief that "small-scale, sustainable agriculture can serve as a vehicle to build community and create new economic opportunities." The project was established to develop innovative strategies capable of supporting Maine's small farmers and food processors. Some of the activities being pursued are:

- *Develop a value added "fresh processed" operation designed around Maine farm products.*
- *Support small local markets that encourage the sale of locally grown Maine-made food.*
- *Develop two model food policy councils that will examine and act upon problems and opportunities within their local food system.*
- *Use new community gardens to increase the access of low-income people to fresh produce.*
- *Provide support and instruction to both existing and would be farmers.*
- *Promote the benefits, both personal and societal, of purchasing more Maine-made food.*

The Maine Farms Project was established under a grant provided by the US Department of Agriculture in September 1995; further grants on 1996 from the USDA strengthened and expanded the program. Other partners of the Maine Project include the Maine Coalition of Food Security, the Maine Organic Farmers and Growers Association, and the new Portland Public Market.

Case Study #6: UMass Extension: What is CSA? (*Internet resource*)

Community Supported Agriculture is an innovative and resourceful means of connecting local farmers with local consumers. CSA programs are capable of developing a regional food supply and a strong local economy. CSA's can also provide an area with a distinct sense of community; encourage land stewardship, and support and respect the small to medium scale local farms and farmer's of a region. CSA programs date back approximately thirty years to Japan where a group of women concerned about the increase in food imports and the decrease in the farming population initiated a direct growing and purchasing relationship ("teikei"- translates to "putting the farmers' face on food") between their group and local farmers. This farm market strategy has seen traveled to Europe and has been adapted in the US as "Community Supported Agriculture (CSA)." Currently there are nearly 600 CSA programs throughout Canada and the US.

CSA is a partnership program between a farm and a community which provides a direct link between the production and the consumption of food. Consumers support a farms yearly operation by purchasing a share in the season's farm products. Members of the CSA make a financial commitment to the farm throughout the season, "and assume costs, risks and bounty of growing food along with the framer or grower." Members share the costs of farm operation such as feed, seeds, fertilizer, water, equipment maintenance, labour, etc. The farm provides a return of seasonally fresh, healthy produce through the growing season. CSA programs "create[s] a responsible relationship between people and the food they eat, the land on which it is grown and those who grow it." This type of relationship between community and local farms provides "an economically stable farm operation in which members are assured the highest quality produce, often below retail prices. In return farmer's and growers are guaranteed a reliable market for a diverse selection of crops."

CSA is important for food production systems because:

- *CSA's direct marketing gives farmers and growers the fairest return on their products.*
- *CSA keeps food dollars in the local community and contributes to the maintenance and establishment of regional food production.*
- *CSA encourages communication and cooperation among farmers.*
- *With a "guaranteed market" for their products farmers can invest their time in doing the best job they can rather than looking for buyers.*
- *CSA supports the biodiversity of a given area and the diversity of agriculture through the preservation of small farms producing a wise variety of crops.*
- *CSA creates opportunity for dialogue between farmers and consumers.*
- *CSA creates a sense of social responsibility and stewardship of local land.*
- *CSA puts "the farmers face on the food" and increases understanding of how, where, and by whom our food is grown.*

For more information regarding the working nature of a CSA program please refer to Appendix Three: What is Community Supported Agriculture and How Does it Work?

Case Study # 7: Landscape Scale Conservation Demonstration Farms

- D.W McAndrew

Agriculture and Agri-Food Canada, Research Centre, Morden, MB, R6M 1Y5

A Parkland Agriculture Research Initiative (PARI) has been launched to develop and demonstrate soil and water conservation for the Parkland soils of the prairies. Of the PARI project, is a conservation demonstration farmland component, designed to support and enhance ongoing extension activities by researchers, farm producers and extension personnel to work on farm scale projects in the Parkland area of each Province. The major objective of the conservation demonstration farm is to build partnerships in the agricultural community. One such partnership includes the Research Branch of Agri-Food Canada and Duck's unlimited Canada, with funding from the North American Waterfowl Management Plan. Landscape scale demonstration farms have been established on farms in Vegreville, Alberta; Prince Albert, Saskatchewan; and Brandon, Manitoba.

The conservation demonstration farms have been in operation since April of 1993. Duck's Unlimited Canada has leased properties in Saskatchewan and Alberta; The Manitoba Zero Tillage Research Association has leased property in Manitoba. Long term management plans have been developed for the three farms. Corporate sponsors, producer groups, provincial programs, and in-kind contributions have offered funding from provincial agricultural departments.

The farms focus on building and transferring knowledge of soil, water and wildlife conservation strategies. Field days are held which offer a place and time for other farmers and members of the public to investigate and understand the farm operation and conservation processes – hundreds of guests have visited the farms annually since 1993. Activities held on the farm also include guided tours for school groups and the general public. Information from the farms has been placed in various newsletters widely read in the agricultural communities. The Alberta conservation demonstration farm has been added as a significant destination for self guided tours of the regional eco-tourism parks. The Saskatchewan and Manitoba farms have also developed self-guided tour opportunities. In Saskatchewan and Manitoba, provincial, federal and university research activities and extension services are carried out at the demonstration farms.

Duck's unlimited has enhanced wildlife habitat at each farm, with at least forty acres devoted to dense cover and, providing necessary upland habitat for waterfowl. Bird and animal population samples and rehabilitation strategies are consistently performed on the farms. In British Columbia, Canadian Wildlife Services and Duck's Unlimited are also developing programs to integrate wildlife preservation and habitat conservation with farming. An example is the Trumpeter Swan Management Project in the Comox Valley. The Trumpeter Swans population had a dismal status in the 1930's. Yet, they have made a tremendous recovery, their population has doubled each past three decades. The Southwest coast of British Columbia offers significant overwintering habitat for approximately 7500 swans - half of the world's population. Agricultural land popular feeding ground for the swans, however this activity can have significant concerns for the farmer regarding the integrity of these grazed upon fields for agricultural yield. The Comox Valley project offers management techniques which provide some control over the feeding patterns and ultimately serve to protect the fields from the negative impact the birds may have. The program also offers a strong cooperative unit between the farmers and wildlife agencies.

Case Study #8: Delta Farmland and Wildlife Trust:

Agriculture and Wildlife / Ecological Integrity

The end of the eighties brought about a greater recognition of the significance of "extensification" and set-asides for environmental purposes. Set-asides address many issues relating to environmental integrity, including: the "conservation of wildlife; the biocontrol of pests on adjacent arable land; an increase of fish and wildlife populations; a reduction in ground water pollution; providing a means for public access and amenity; improvement of the rural landscape; reduction of carbon dioxide emissions; and production of biomass fuels (Webb 1997)." Studies have proven that the loss of diversity through species and habitat decline can be reduced by an appropriate set aside management plan. Ultimately, set asides can be used at the local level to "restore habitat diversity, to promote the expansion of existing biotopes, to provide buffer zones and corridors, and to provide new sites" for ecological regeneration. The management of set aside farmland to meet the objectives of wildlife conservation has become a strong focus. In Europe, programmes such as Biodiversity Action Plans have been established with national targets aimed at conserving significant portions of land for wildlife conservation / agriculture purpose.

In British Columbia, the Delta Farmland Wildlife Trust (DFWT) has been recently established, marking a partnership program between the farmers and the wildlife trust. This type of program is not new. In Britain, the National's Farmers Union and the Ministry of Agriculture have been involved in partnerships to oversee the protection of environmentally sensitive areas. Payments in the form of grants are made to farmers depending on the level of the conservation stewardship role. This type of program emphasizes a one-to-one voluntary undertaking of conservation responsibility between the farmer and the wildlife organization, rather than a prescriptive approach to dealing with wildlife and agricultural issues. This voluntary principle was established in Britain in 1968, now there are over 60 Farming and Wildlife Advisory Groups in Britain. Coinciding with our local BC DFWT is the Delta Greenfields Project and the Interior Wetlands Progra. These projects focus on wildlife/agriculture management for extensive areas of agricultural and wetlands, and the adjacent upland areas of the Fraser River Basin. The preservation of agricultural land to promote a viable agricultural industry is also a vital link to the preservation of important wildlife habitat.

Case Study #9 Universities and Agriculture:

UVM's Farms - Cultivating Vermont Agriculture

The University of Vermont has four off-campus farm facilities geared to provide research, education and outreach programs for researchers, students, farmers, and the public. These off campus facilities are committed to "enhancing the vitality of rural communities and agriculture." The four centres serve as demonstration farms – *emphasizing quality, efficiency, productivity, and natural resource protection*. These off campus farms also "provide[s] extensive research facilities for investigating issues of concern to producers and consumers. In addition to educational activities including classes student run projects, and a wealth of hands on experience, each facility hosts conferences and tours for producers and welcomes thousands of visitors each year."



Part III The UBC Oyster River Research Farm

Section 3.1 Goals and Objectives

To achieve the aim of this thesis proposal, I have identified six goals which fall into the categories of:

1. Economic
2. Ecological
3. Education / Research
4. Social
5. Sustainability
6. Experientially Rich
7. Balance and Efficiency

1. Economic Goal and Objectives

Goal:

To design the UBC Research Farm as an economically viable agricultural / education based operation.

Objectives:

1. To program for agricultural production that is marketable locally and regionally.
2. To design the farm as a place capable of supporting a variety of research projects (agricultural and beyond) that have the potential for grants and funding.
3. To program for educational opportunities (agriculturally and beyond) which are desired in the local and regional community (and beyond) and thereby capable of generating income.

4. To program for forms of tourism capable of providing income (i.e. Bed and Breakfast at Montford House / the Montford House Retreat).
5. To establish other forms of programs, (i.e. residential hamlets) that are capable of providing an income for the Farm.

2. Ecological Goals and Objectives

Goal:

To demonstrate how an Agricultural landscape can be molded into, and sympathetic to a rich local ecosystem; to integrate, enhance, and protect the existing (and potential) ecological networks that are connected to the farm landscape.

Objectives:

1. To establish Agricultural practices that are ecologically sound.
2. To recognize ecologically sensitive/significant sites and organize Agricultural practices so to ensure minimal conflict/impact on these sites.
3. To recognize areas of the site with high ecological significance, and ensure that these areas are protected and or enhanced so as to maintain or improve (via bio-engineering strategies) their ecological integrity.
4. To deal with surface water run-off in an ecologically sound manner.
5. To ensure existing bird habitat is bird protected.
6. To establish greater local and regional connections for wildlife species by providing hedgerows/ habitat in suitable areas.

3. Education / Research Goals and Objectives:

Goal:

To utilize UBC Oyster River Research Farm as a major educational / research centre for the understanding of Agriculture now and in the future.

Objectives:

1. To analyze and expand existing education facilities.
2. To provide for a variety of research projects (agricultural and beyond) that are capable of being carried out on the site.
3. To analyze and expand existing research programs.
4. To provide program elements which accommodate and educate students year round.
5. To establish program elements which provide for agricultural, as well as ecological, cultural, and recreational education for people of a variety of ages.
6. To establish the Oyster River Farm as an extension of the University campus, and thereby provide for a diversity of use as would be available on any part of the university campus.
7. To provide an area for the Naturalist Society current involvement in the inventory and analysis of the wildlife and vegetation of the site.
8. To provide an area for the participation of Duck's Unlimited on the site.
9. To provide a locale for the participation of the Oyster River Enhancement Society.

4. Social Goal and Objectives

Goal:

To connect the Oyster River Research Farm to the community locally, regionally and beyond and to emphasize the farm as an educational centre geared towards the investment of human capital in the form of learning. To create this extension of the University campus, while maintaining the site as an integral connection with the surrounding local and regional, natural and human community.

Objectives:

1. To understand the historical / cultural framework of the Oyster River area.
2. To support, enhance, and extend by means of physical structure and programming existing and future programs on the farm which encourage local and regional community involvement, participation, and stewardship.

5. Sustainability Goal and Objectives

Goal:

To ensure that all programs and proposed infrastructure of the Oyster River Research Farm do not jeopardize the integrity of the social, economic, or ecological infrastructure of the site for future generations.

Objectives:

1. To ensure the integrity of natural systems connected to the site such as soil, hydrology, wildlife habitat is maintained.
2. To ensure the developed infrastructure of the site is established in a manner so as to enable an (cost-effective) ability to change over time.
3. To ensure production, research, education, and economic programs are compatible/competitive with the present market and social needs.

4. To ensure production, research, education and economic programs have a foreseeable future market need.

6. Experientially Rich

Goal :

To develop a wonderful, highly diverse, rich experiential site, such that the site becomes popular to communities locally, regionally and beyond for learning, exploring, and understanding issues relating to agriculture, natural resources, and rural communities.

Objective:

1. To make the processes of the farming operation evident.
2. To make the processes of the ecological infrastructure that is intertwined with the farm evident.
3. To provide for a variety of ways in which people can spend time on the site and participate on the site.

7. Balance and Efficiency

Goal:

To develop the Oyster River Research farm as a 'farm site' that is diverse in parts and objectives, but functions efficiently and effectively as an equally balanced holistic site.

Objectives:

1. To balance the educational and environmental objectives with farm efficiency and economic viability.
2. To explore other forms of development and determine whether or not these types of development can occur without detriment to the lands agricultural productivity.
3. To recognize and understand the balance between the traditional farm and modern agriculture.
4. To focus on maximizing farm productivity to a manner most reasonable for all social, ecological, and economic factors involved.
5. To explore research and education other than that related to agriculture on the site without losing the agricultural focus and foundation of the 'farm.'

Required Site Information

Soils

Hydrology

Vegetation

Wildlife

Local History and Culture

Site Location and Context

ALR History of the Site

Rural Development Scenario of Oyster River and Adjacent Communities

Research and Theory Information

1. Research has focused on the historical and cultural aspects of agricultural practice and the ALR in BC.

two) Research conducted has identified some current social, economic and ecological issues relating to the practice of Agriculture and ALR in BC, and has generated an understanding of the issues and precedents of agricultural land protection/ use in North America and beyond.

3. The theoretical implications of rural landscape, the farm typology, and its role in our present and historical socio-cultural realm have been investigated.

4. An exploration of the qualitative conditions of our rural landscape - the "feeling" and phenomenological value of these landscape types has been carried out.

Design Process / Proposed Methodology

5. Literature review of the historical and cultural elements of agriculture in Canada and BC.

6. Research and identification of the current issues relating to agriculture in BC.

7. Research and review of related works which serve to protect Agriculture in the midst of development.

8. Identify and understand the opportunities and alternatives outlined by various organizations for the preservation of agriculture and rural communities.

9. Using a creative design process, and the aid of my Chair and Committee members, an exploration was generated to understand and incorporate opportunities and alternatives for agriculture and development in BC.

Expected Outcome

The expected outcome has been met by a prototypical design scenario of the Oyster River Agri-cultural Village which is intimately tied in design and function to the Oyster River Research Farm (via a Community Shared Agricultural scenario). This scenario has emphasized the ecological, economic, and social implications of the agriculture and development that must be considered for the successful accommodation of both people and food production.

Section 3.2 Design Methodology for the Oyster River Farm

"...design should not be confused with art, with science, or with mathematics. It is a hybrid activity which depends, for its successful execution, upon a proper blending of all three and is most unlikely to succeed if it is exclusively identified with any one."

- John C. Jones (in **Design Methods**)

Before the mid-twentieth century, the details regarding the process of design were generally ignored. Designs were either accepted or rejected, with little concern for the information, the analysis, the synthesis, or thereby the methods taken to achieve the design. To many it was assumed that design sprang from a "magical leap of intuition" (Lyle, 1985), and the "origins" of design were "rarely questioned."

Today, however, it seems the process of design has become as essential as the design itself. The validation of the design often results from the depth, and the development of the process through its making. Currently, the process of design is believed to be guided by both a rational and an intuitive approach of analyzing and synthesizing information. To many, the most successful designs results from a process which has been developed with an equal balance of both rational logic and intuitive understanding.

To guide the process of design for the UBC Research Farm project, I attempted to follow the design process described by Don Koberg and Jim Bagnall in the **Universal Traveler** (in Quayle, 1996 pp.). Koberg and Bagnall base design process on the analysis and synthesis model. Koberg and Bagnall take these two basic stages and further develop them into specific steps. *Analysis* is identified as being the fundamental building block, and though comprised of many different approaches, is essentially about understanding the site and the scope of the project at hand. A strong site analysis (which incorporates of course elements of synthesis) helps to establish *definition* for the design project. *Synthesis* is divided by Kober and Bagnall into a number of different steps which serve to develop options for the design project and certain decisions about the project (*ideation* and *idea*

selection), and then translate those decisions (implementation) into a final design. An evaluation stage is also considered, which serves of course as indication that the design process never truly ends!

Methodology:

Applying these Analytical / Synthesis stages to the Oyster River Research Farm Design Process

Analysis:

**break discover dissect search gather examine
research question compare sort classify**

I began the process of design by conducting a site inventory using the conventional, rational, and logical approach. This approach focused on identifying the elements of the site such as:

vegetation mosaics (figure), hydrology (figure), sensitive environments (figure), flood plain analysis and topography (figure), soil types (figure), climate (Table), history, cultural features (figure), economics, public perceptions and attitudes, current political situation. (Refer to site analysis of this section for full explanation of the above information.)

I also took the liberty of conducting a site inventory more subjectively, by using an intuitive, phenomenological approach. In so doing I was able to identify the 'poetics of the place' by generating information and more particularly, images, regarding the *feel* of the place through the sensations of touch, smell, taste, sound, sight and spiritual essence. Some of the images that help to describe the poetics of the place may be explored in figures

A great deal of background information regarding the UBC Farm, the Oyster River Community, the Agricultural Industry, Agri-communities, Community Supported Agriculture, as well as research and education in agriculture was collected through previous course work, literature reviews, and personal

interviews. Topics such as Agriculture: History and Present, Agriculture in BC, ALR, UBC's Role in Community, Research and Oyster River Farm Oyster River: Past and Present, Sustainable Agriculture and Agrarian Typologies were focused on throughout the course of the thesis.

This stage of the design process also involved a search for, and review of, precedent and case studies which dealt with: the protection / conservation of agricultural land, successful agriculture and community operations, agri-communities, community supported agriculture, and the role of universities in agricultural and community research and education. During this stage, the review of many of the major constraints and issues facing agriculture in British Columbia was also conducted.

Definition:

**clarification distillation statements directions
translation declaration**

To define the focus of my project, I began to evaluate the material generated from the analysis. This evaluation enabled me to distill the general research carried out during the analysis. This type of distillation process formulated a direction for action, it will enabled me to clarify my goals and objectives for the Oyster River Project, and helped to generate a viewpoint as well as conceptual guidelines for the project. During this stage I defined, from the research undergone, Agriculture and Agricultural practice in context to my site, the role of the ALR and its effects and relationship to my site, community concerns, and UBC's involvement. Defining these elements in turn developed a "declaration of attitude and intentions," a viewpoint from which to further develop conceptual guidelines for the UBC Farm and the adjacent Oyster River community. This stage was carried out by means of a rational and logical sequence and synthesis of information (not exactly !) as well as an acknowledgment and understanding to define the information gathered in a means most appropriate in context to the Oyster River site.

Ideation:

**means to achieve ways strategies alternate
routes options choices paths plans solutions**

This process required a stronger intuitive approach. From the definitions derived, a mode of action had to occur. During this stage, design intentions began to emerge, and potential plans began to develop. The process involved listing options, alternatives, strategies capable of pursuing based on the information and point of view generated in the analysis and definition stages. I attempted to develop a broad palette of numerous options available to approach the project. Ideation meant solutions such as: *growth boundaries, complete communities, rural villages, agri-tourism, agricultural hamlets for residential communities, sustainable options for agriculture, agricultural practices and research, implementation agrarian typologies, community supported agriculture, conservation demonstration farms, eco-hamlets, greenway connections, town centres, open space, and numerous programming elements, etc.*

Idea Selection:

**comparisons choices decisions evaluate
balances benefits
potentials**

In this stage a selection process from the extensive list of various options generated in the stage of ideation occurred. A comparison among choices was made, and a set of decisions for the conceptual design began to emerge. This was done by a matrix which served to evaluate the "means" of the ideas by assigning values to the various approaches developed in the ideation stage. Ultimately, the idea selection served to generate which "action best balances the potential benefits and liabilities of a situation." In this stage concept plans regarding the form and function of the site, the interconnectivity of the site and surrounding natural and cultural environment, and numerous site programs were developed.

Below is an example of the matrix evaluation of an objective from each of the main goals against the final design intention for the site.

	Objectives			
Design Intent	ECOLOGICAL To recognize ecologically significant areas and elements (soil / hydrology) and ensure minimal conflict/impact on these attributes.	ECONOMIC To program for agricultural production that is marketable locally and regionally.	SUSTAINABLE To establish Agricultural practices that will not detriment the future potential of the farm's ecological, economic and social infrastructure .	SOCIAL To establish an 'open door' policy to the public - a site rich in community activity, involvement, and stewardship.
Eco-hamlet	moderate suitability	low suitability	highly suitability	highly suitability
CSA (Community Supported Agriculture)	moderate suitability	highly suitability	high suitability	highly suitable
Oyster River Agri-Village	moderate suitability	high suitability	high suitability	high suitability
UBC Agri-Community Education and Research Centre	moderate suitability	moderate suitability	high suitability	high suitability

Implementation:

**acting arguing balancing sculpting finding
testing forming embodiment realizing actualizing**

In this stage, the conceptual approaches began to be formulated. The previous steps provided a set of 'guidelines' or a series of most suitable design intentions for the site. From these most suited intentions, actual design *implementation* began to result. The spatial configuration, the size, the character, the form of the site began to be developed. Yet, during this stage most conceptual intentions needed returning to and re-evaluating.

Eventually, the physical manifestation of the ideas will begin to emerge, and the production of finished drawings in the form of a master plan, axonometric, cross sections, etc. were carried out to express, graphically, the programming of the UBC Farm and the proposed Oyster River Agri-cultural Village. The character of these elements, and the form and the function of the Farm and the Village became formal and full expressions from the graphics developed in this stage.

Evaluation:

**look back examine criticize assign value review
improve**

From a self-evaluation and self-criticism of the final drawings, elements that were not fully carried through, or aspects lacking in the final drawings became apparent. This stage will enable a means of examining the quality and quantity of the final project, by evaluating the final designs against the Goals and Objectives of the thesis. This evaluation indicated the richness of the design intentions, yet also identified a number of Goals and Objectives not capable of being met within the context of the particular design developed. This evaluation encouraged a return to preliminary stages of the design process in order to further clarify, change and readdress issues that were developed earlier on in the process. The final evaluation led to a change in the initial goals and objectives outlined for the Oyster River

limitations for solving *all* of the issues related to Agriculture, the UBC Research Farm, and the community of Oyster River, of this design project.

Summary:

The methodology of the design process did not neatly follow the sequence of stages in a linear fashion as so implied above. Rather, the process was sometimes circular, sometimes branching, and at other times, a feedback system. I believe I experienced all three methods in combination at various times throughout the process. The design process never truly ends, and though I find the time has come to complete the project at hand, I do still feel the desire to add yet another layer to the Oyster River Research Farm and the Agri-cultural Village it supports! Nonetheless, I do believe the design intent outlined is strong, rich and power, and indeed generates a suitable design response to the project at hand.

Section 3.3 Site Analysis

Site Analysis

“The land is too various in its kinds, climates, conditions, declivities, aspects, and histories to conform to any generalized understanding or to prosper under generalized treatment...To treat every field, or every part of every field with the same considerations is not farming but industry.”

- Wendell Berry, 1977: 30-31

Context

The UBC Oyster River Research Farm is located on the east coast of Vancouver Island, within the boundaries of the Comox /Strathcona Regional District, electoral areas 'C & D.' The community of Oyster River is situated between the larger municipalities Courtenay/Comox to the south, and Campbell River to the north. This eastern region of the island is located in the dry (eastern) maritime subzone/variant of the Coastal Western Hemlock biogeoclimatic zone. This particular zone is limited in size and presently experiences the greatest threat from urbanization in the province (Mewitt, 1998).

History

The Oyster River appears to have been a 'people place' long before European settlement. At least two tribes, the Salish and the Kwakiutl, seasonally utilized the resources of the Oyster River area.

In 1887, the land from Kukahon Point was surveyed, and, the farm adjacent to the coast, the 'lower farm' was claimed at that time by Mr. David Anderson. A portion of this area was purchased in the early 1900's by the Woodhus Family. This portion of land is now crown land, Woodhus Slough.

The total farmland was owned, prior to the university, by Mr. Barret Montford. Mr. Montford had developed the lower farm, during his time, to one of the finest, best equipped farms on Vancouver Island. Montford bequeathed the land to the University in 1962 "upon the condition that for a period of at least twenty years after my death the said land and premises be used by the University of British Columbia exclusively for general farming including instructional and demonstrational purposes in connection with its Department of Agriculture." (in Boltanski's, 1997). The University was granted clear title to the property in 1982 (Botanski's, 1997).

The Oyster River Farm is composed of 14 legal lots, and totals approximately 750 hectares. Eleven of these (approx. 150 ha) are located in the 'lower farm,' the portion of farmland bordering the coastline, and 3 much larger lots

(approx. 600 ha) comprise the primarily wooded 'upper farm' (LARC, 1998; Holbeck, 1998). Currently, the majority of the land is predominantly forested (500 ha?), while the remaining portion (250?) is arable agricultural land.

The Lower Farm

Location (Figure 1: Oyster River Context Map)

The lower portion of the Oyster River Research Farm lies locally, between Salmon point and Miracle Beach. The westward boundary of the farm is parallel to the Old Island highway. The eastern boundary of the farm borders the shoreline of the Georgia Strait. To the north of the farm lies Salmon Point, and the south, the Oyster River Park of the Regional District of Comox/Strathcona. This portion of the UBC research farm lies in 'Electoral area D' of the Regional District.

Farm Features

The 'lower farm' (Figure 10) is currently maintained as an extensive dairy unit (Figure 11) and provides the economic foundation for the entire site. The dairy generates approximately \$1 000 000 gross revenues annually. The lower farm supports a herd of approximately 370 head of Holstein cattle. The lower farm (and arable portions of the upper farm) produces all grass and corn forage requirements. Some of the structures on the farm associated with the dairy unit include a computer based (on-line) administration area, fully equipped, modern agricultural livestock barns and a milking parlours, silage/feed bunkers, outdoor/indoor staging areas for cattle, equipment sheds, and a large scale manure storage facility. A complete set of modern agricultural machinery supports the field-based operations, and the dairy unit upkeep. Other agricultural operation structures on the site include older storage barns and pump houses. Ground water is abundant on the lower farm and supports the irrigation system for the arable areas.

The lower farm is home also to the relatively new Montford House Rural Resource Centre (Figure 12) , a conference facility and residency run by the Campbell River School District in partnership with UBC. This structure was recently built (1996) to replace the original home of Berret Montfort, which

existed on the site until shortly before. The Resource Centre provides educational venues for people of all ages, with a primary mandate on Natural resource education. Montford House hosts university extension workshops and conferences, as well as an agricultural education workshop for teachers. Montford House is capable of providing a meeting place for groups of up to 60 people and of providing overnight accommodation for up to 30. Laundry facilities and kitchen facilities currently exist, wiring for electronic communication is in place. (Boltanski, 1997)

Montfort House is situated across from an old community garden, and the remnant grand trees and plants such as enormous *Sequoia Dendrons* provide a intriguing hint to the cultural past of this site. Other landscape features of the lower farm include the majestic row of Lumbar Poplars which line the gravel entranceway, the surrounding fields of corn and grass, areas of hedgerows, and pockets of mature Douglas Fir forest at various locations.

From portions of the farmland are expansive views out across the ocean towards the coastal mountain range on the mainland beyond. There are also picturesque views over the farmland to the Slough and adjacent wetlands. These areas are framed, on a clear day by, Mt. Baker in the distance.

The lower farm exists within a 'cultural hub' of the Oyster River community. Its location to the highway makes the farm highly visible to locals, tourists, and any other passing through traffic. Adjacent to farm boundaries is parkland, the Oyster River, beach, and a nature trail which serves as a direct linear connection for all of these elements (as well as two local pubs situated directly north and south of the farm.) Ultimately, all areas immediately adjacent to the farmland are used extensively by the public realm for outdoor recreation. This has caused some safety/liability as well as maintenance/vandalism concerns for the farm. Yet, to many of the community the UBC farm is not considered a private entity, rather, it is seen as an extension of the existing public realm.

Ecological Features (Figure 13: Woodhus Slough and Foreshore)

The lower farm is situated amongst dynamic, ecologically significant landscapes of the Oyster River area. This coastal edge is comprised of sand dunes, a rocky beach zone, and, just south of the farm boundaries, the Oyster River Estuary and associated riparian zones. Other significance landscapes include Woodhus Slough (adjacent crown land), marshlands, and the ephemeral streams and ponds located on the eastern edge of the farmland. Naturalists from the local community have documented the many significant plant and animal species found these surrounding landscapes types. Species noted include: the native orchid; woolly sunflower; and Goldstars; salmon; eagles; owls; and numerous migratory birds including swans, brandts, and widgeon.

Upper Farm

Location

The 'upper' land of the UBC Oyster Farm is comprised of 3 larger lots totaling 600 ha. This portion of the farm lies on the southern side of the Oyster River. The Oyster, in fact, defines the boundary for the north and eastern edge of this property. The south and western boundaries are found perpendicular to, and parallel along McCauley Rd. This portion UBC farm lies in 'Electoral Area C' of the Regional District.

Farm / Cultural Features

This upper portion of the farm is used as rangeland for the grazing 'dry' cattle. Four large fields have also been cleared for corn/grass hay silage production. Located on this site was, until this summer, a fish composting unit. Some buildings for this service may still exists on the site, however the facility is no longer composting material. An important component of this 'upper farm' is the Oyster River Fish Hatchery. Significant work has been done by this non profit society led by volunteers, to enhance salmon populations within the Oyster River. The hatchery has been successful in improving local salmon stocks, and this success has influenced strategies for further and future development. Aspects associated with the hatchery include two major

rearing channels, a small hatchery, an egg take station, and a building that serves as workshop, office, meeting room, and storage. The nature of place created by the hatchery is of great value, educationally and spiritually. The opportunity to walk the trail network laid out alongside a portion of the Oyster river, the channels, and rearing ponds, and view the life cycle of the salmon, is indeed a fascinating experience. Within the upper farm are scenic views across the fields of corn and grazing cattle, as well as wonderfully tree-framed views from the top of the escarpment over the river, and along the river's edge.

I expect that the remote location, the discrete boundaries, and the surroundings of primarily private land, give the upper farm a much less sense of a 'public' entity within the community.

The rest of the 'upper farm' is forested with a high forestry classification of predominantly young to mature stand of Douglas Fir. Some income is generated from a small amount of selective harvesting of this site. However, the forest harvest is currently constrained due to poor age class distribution (Boltanski, 1997). The understory in places where grazing has occurred, is relatively sparse. Areas that have not been grazed exhibit a bountiful understory of mahonia, salal, huckleberry and other associated forest floor species. The portion of site is on the eastern side of McCauley Rd. is composed of two relatively flat plateaus separated by a steep escarpment.

Conclusion

The UBC Oyster River Research Farm is a site rich in social and ecological landscape features. These ecological and socio-cultural features offer high opportunity for an array of design options that can serve to address the social, ecological, and environmental issues facing Agriculture in British Columbia today. Please refer to drawings for a further analysis of the, flood plain and topography (Figure 2), soils (Figure 3), hydrology (Figure 4), sensitive landscapes (Figure 5), culturally significant sites (Figure 6), and vegetation mosaic (Figure 7).



Part IV Designing for an Agri-cultural Community at Oyster River

Section 4.1 Growth Boundaries

Development growth boundaries, urban service areas, and village growth boundaries are considered effective tools at locating and organizing new development. Such boundaries are seen as not only effective at protecting farmland, greenways, and open space, they also help to control and locate infrastructure, and reduce the heavy costs associated with tradition sub-urban sprawl. The use of urban growth boundaries further serves to combat sprawl by linking together regional land use planning, capital improvement programs, economic development, and phased growth planning strategies. "Regional planning between a city and county or village and township is the sort of cooperation that is long overdue in America" (Daniels and Bower 1997).

Land use effects everyone. North America has become a spread out suburban society, dependent upon non-renewable energy sources to fuel motorcars for shopping, work and recreation. The once "utopian" suburban environment, tract housing office parks, and shopping malls, is beginning to have devastating effects on surrounding countryside and rural community. Currently, sprawling suburban development depletes the vibrancy of a downtown core, fosters discrimination and racial segregation, increases cost for government, threatens air and water quality, destroys wildlife habitat and natural ecology, and paves over high quality farmland. (Daniels and Bowers, 1997)

Across North America there is a growing sense of urgency of land and community. Current growth, though inevitable, cannot continue along the same patterns of motor vehicle dependency and suburban sprawl. In most farmland regions, the major constraints facing farming and farmland preservation are a result of two types of suburban development; the continuing wave of large residential and commercial projects as population centres expand, and the "Galactic City" that featuring scattered homes and commercials strips linked together by a never ending stream of highway. This dispersed development increases the conflict and confrontation between residential, non-farm suburbia and adjacent working farmland (Daniels and Bowers, 1997).

These types of development have created significant problems for viable agricultural communities in British Columbia and throughout North America. As discussed in Part One problems affecting agriculture include:

- Development speculation that can raise land prices beyond what farmers can afford and tempt farmers to sell land for development.
- A greater number of people next to the countryside heightening the risk of confrontation between farmers and non-farmers.
- Increased complaints from non-farmers regarding odours, chemical sprays, noise, dust, and farm traffic.
- Farmers suffering crop and livestock damage from trespassing, vandalism, and dog attacks.
- Storm water run-off from housing developments depleting water quality and supply, flood lowland farming areas, and creating intense soil erosion concerns.
- suburban sprawl, and a loss of farmers within a rural areas. Municipal ordinances and bylaws, such as nuisance and noise are passed, typical farm practice becomes restricted, and farm activity becomes very difficult to continue.

Yet at the same time, more and more ex-urbanites are attracted to outlying regions for:

- open space
- scenic vistas
- air and water quality
- wildlife habitat,
- and the sense of rural character.

Ironically newcomers are destroying the very farms and farmland that they hold valuable. And farmers have seeded their own decline by selling off portions of their farmland for development purposes. Most ex-urbanites continue to shop in the cities and suburbs, commute to work, and use open space as an opportunity for, in many cases, intensive outdoor recreation activity. Farmland communities are losing their farmland, their rural character and their overall viability as development continues without boundaries, a sense of completeness, or viral rural integrity.

Section 4.2 Rural Villages (Figure 16: Options for Agriculture: Rural Villages)

Identifying the development areas outside of the ALR will enable us to visualize how and where development can occur in the future. Identifying the size of these development zones, and planning for a suitable density (22 people/acre; 2.8 people /dwelling unit; 8 dwelling units/acre) will provide for a sustainable development option. This type of planning will allow the development of complete communities; capable of sustaining a significant population while ensuring ALR, FLR, open space and rural character are maintained.

Designing the preliminary structure of this site, for example the natural boundaries, and ALR and FLR boundaries enables us to envision how homes may be accommodated within the settlement zone in the most appropriate and comprehensive manner. Identifying these significant boundaries early on will serve to avoid the design of communities that may conflict with the ALR, or the ecological integrity of the area. This preliminary stage will also serve to identify potential, non-motorized greenway links that offering alternative modes of travel, public amenities, recreational benefits, as well as the preservation of open space and ecological networks between communities and within the region.

Each community, to be complete, must have a viable town centre - a strong heart. These central locales have been identified in each of the settlement areas. The heart of the community is situated within approximately a 'five minute' walk, and thus enables all individuals of the community to access the village centre in a reasonable time frame without the need of a motor vehicle. Groceries, videos, the library, internet café, local restaurants, and the 'local green' are components of each town centre. These light commercial enterprises are relative to the scale of the community; the size and scope of the town centre reflects the number of people within the local settlement area. These centres also reflect the local character of the community and the wonderful rural appeal of the Comox / Strathcona Region.

The town centres enable the community to remain complete and contained. They avoid the need to travel 5, 10, 15 miles to the nearest large-scale shopping mall or grocery store. They offer a viable market place within each community, as well as a strong civil realm that serves to structure, identify, and support each settlement area. The position of the communities' centre relates to the greater rural and ecological landscape. Greenway connections link the town centre to the rural landscape and surrounding farmland. This physical link helps to formulate a more accurate perspective of the rural landscape. The working environment of the farm is seen first hand, rather than simply viewed in passing from within a motor-vehicle. Streams, creeks,

rivers, meadows, forests, bluffs, fields, livestock and wildlife are among the greenway travel route, these ecological systems are perceived more clearly due to the intimate physical and visual interactions greenways can provide. Ultimately, ecological and agriculturally learning takes place simply through enabling this out of door interaction and experience on a daily basis. This, in turn, leads to a greater connection to the surrounding landscape and a strong social will to ensure that the integrity of the environment and the rural quality of the community and surrounding region are preserved.

Section 4.3 The Oyster River Village

(Figure 18: UBC Research Farm & Oyster River Village)

“... There is order in its gridded plan, which connects each building with its neighbour and to the farthest point on the grid; there is enclosure in the peninsular surrounded by water and mountain range, and in each corridor of street enclosed by a common domicile of inhabited walls... there is magic in the urban furrows, which end in hilltop parks, civic plazas, and green rectangles in the harbour and at the Pacific.”

-Solomon 1988

The Oyster River Village gives us a clear picture of how the rural villages described above will fit, comfortably, into the regional districts rural landscape. The plan exhibits a low density community of approximately 2000 individuals (22 people/acre; 2.8 people/dwelling unit; 8 dwelling units/acre). The majority of who are housed in single family, residential units (Figure 26: Village Streets and Homes) of approximately 280 sq. m (2700 sq. ft) on smaller size lots than status quo sub-urban developments (392 sq. m/ 3700 sq. ft). The lots have been laid out over a traditional grid, with narrow street right of ways (15 m east-west/ 11m north south) and

gravel alleys. The streets have an open-swale catchment system which serves to aid in infiltration of storm water, as well as detention and recharge, which occurs north, south, and east of the village in designed recharge areas of the densely vegetated greenway corridors and highway edges. This housing type and street pattern is associated with the examples given in Patrick Condon's *Alternative Design Standards*. The grid was chosen as a means of efficiently ordering the development area, as well as to provide views from the roadways to the farm and mountain ranges beyond, and, as a reference to historical North American urban and agricultural pattern.

Street grids and the agrarian sectioning of the wilderness were separate, but similar. Their histories interweave. Together they structured the myth of democracy. (Solomon, 1988)

At the centre of the community, lies the mixed use commercial, light industrial, office realm, supporting restaurants, cafes, small businesses, local processors (offering u-brew juicing, canning, and freezing services) and a myriad of other entrepreneurial marketable activities (Figure 22: Gateway to Oyster River Village & Figure 23: Village Centre, Agrarian Drive). This mix-use core also houses a number of individuals in smaller apartment-type residential units, which helps support a diversity of people with differing incomes. A series of row house, one (block north and south of the village core) provides housing close to the centre and services of the village, for elderly or lower income citizens who wish to reside in a less extensive, 'maintenance free,' single family housing unit.

The Farmer's Market has a central location in the heart of the community off of Agrarian Drive (Figure 24: Village Centre & Figure 25: Farmer's Market). Fresh fruits and produce, directly from the UBC Farm, are available at the Farmer's Market for all village residents. The residents have a vested interest in the farm and farm operation, as they have become members of a Community Supported Agricultural (CSA) scenario developed as a means of promoting and supporting agriculture and local food production for local food security. (Please refer to Case study # , and Appendix Three for more information regarding CSA's.)

Across from the Farmer's Market is the Market Plaza, which provides a meeting place for the community. A place for celebrations; demonstrations; dances; largest pumpkin award ceremonies; face painting festivals; the start of the hay-ride; Harvest Days; and other such activities which serve to entertain, unite and strengthen the citizens of the Oyster River Agricultural community. Adjacent to the Market Plaza is a set of community gardens and the Town Hall (west); the Library and the Elementary School (east). Across the road from the plaza towards the village gates resides the community Church. At The termini of Agrarian Drive, the

main street, are the proposed Junior high-school (west) and the UBC Agri-community Education and Research Centre (east). Both facilities highlight the most important elements of the Agricultural village: *education, awareness, and knowledge*, particularly as it relates to agriculture and food production – a fundamental element of our civilization, of our culture. The UBC Agri-community Education and Research Centre provides a direct physical link from farm, and food production to the village. From the education centre, a public path continues through the farmland, east, towards the Woodhus Slough and the foreshore, and eventually connects to the regional greenway trail.

A series of pedestrian paths are located throughout the village fabric. These paths offer a viable and non-motorized route to the village centre, and the greenway links north and south of the village. The paths are organic, 'wild fingers' which weave into the more refined realm of the housing developments. Associated with these paths are open swale systems, which aid in the collection and infiltration of storm water run-off. The paths are rich in vegetation capable of providing delectable fruits, berries, herbs, etc. - free for the community to explore. Also within the gridded fabric of the village are a series of allotment and community gardens, parks, and open space (pedestrian links and school yards included) which together achieve the 30% open space goal of the Comox / Strathcona OCP. These organic paths, as well as the community gardens, larger greenway connections, and the abundance of open space within and surrounding the village, help to retain a certain sense of roughness and rural character for the Oyster River Agri-cultural Village. All of these elements combined harbour a rural appeal for the community, and ultimately serve to emphasize an agri-cultural, rural, domain.

The retained rural character and quality of the village, the public integration of farm and village, and the Oyster River / UBC Farm membership (CSA scenario) fosters an awareness, respect, and genuine interest for agriculture and food production. And as such, serves to make the UBC Research Farm and Oyster River Village unique, synergistic agri-cultural entities. Ultimately, the Oyster River Agri-cultural scenario depends upon a pro-active approach from the UBC, the Regional District and the Agricultural Land Commission. Each of these agencies must take the initiative to expand existing policy and parameters and attempt to envision an "imageable agricultural community." Such a vision requires these agencies to foster a create process which truly pushes the conventional approach to planning for communities and agriculture into a new realm of *agri-cultural communities*.

Section 4.4 UBC Agri-Community Education and Research Centre

(Figure 28: UBC Agri-Community Centre &

Figure 29: UBC Agri-Community Research and Education)

UBC Agri-Community Centre: To link UBC Research Farm with the Community

Tourism	Extension	Education	Research	Community
Farm Vacation ('Montford House Retreat')	Provincial Agricultural Extension – creating an Office on site	Agriculture Students "hands on experience"	Demonstration Landscape Conservation	Local food production for local consumption
Eco Vacation Provides link to Parks, Ocean and Islands	Agricultural in the Classroom	UBC students Outdoor education and research facility: biology, landscape arch, etc.	Soil conservation strategies: set asides etc.	CSA scenario – integrate food production and consumers
Regional bike route	Organic farming Workshops	Elementary & Highschool	Wildlife / Farm interactions	Public pathways
Link to (provides?) campgrounds,	Sustainable agriculture Workshops	Community Demonstration and "hands on "experience"	Naturalist inventory and analysis	Greenway connections
Ecological and Recreational Greenway links	Small scale processing and marketing workshops for local farmers	Wildlife and Conservation Education	Small scale, "family farm" local processing and marketing research and analysis	Farm Festivals, Rodeo's horse, dog and cattle shows.
Connections to Salmon Point Resort & Fisherman's Pub	Horticulture	Sustainable Agriculture Practices	Storm water monitoring and research	Storm water and waste treatment community/farm co-dependence
Oyster River (100m riparian covenant) & Oyster River Regional Park (expanded)	Centre for larger farm community to meet and collaborate	Processing and marketing – local community focus	Bio-solids waste research – community / farm co-dependence	Eco –Hamlet for "live-in stewards"

The UBC Agri-community Centre serves to extend the traditional role of the university as an institution for learning and bridge it further into rural community by incorporating programs that do not focus solely on academics or traditional education and research. In this case, the

university serves less as an institution and more as a 'cultural tool' or artifact, that is meant thereby to enhance social well being for *all* individuals within the socio-cultural community.

This scenario requires an integrated approach to the rural community involved and the larger agricultural community of the region, and attempts to address the social needs of this community through 'agrarian cultural ideals.' The basic principles would emphasize the philosophies of Wendel Berry, Shumacher, Leopold, and others. *Agriculture* can not be separated from *culture* and that in order to address the issues concerning agriculture that we face today, and will undoubtedly face tomorrow, we must recognize the link of viable *agriculture* to viable *communities*.

A significant proportion of students entering the Faculty of Agricultural Sciences at UBC do not have previous agricultural related experience, many students have never stepped foot onto a working farm. Without offering some form of farm experience, the Faculty may in fact be graduating students with Agricultural Science Degrees who remain foreign to the knowledge of farm operations and farm practice. This reality indicates the need to provide a 'non-classroom' educational centre for learning in the areas related to Agriculture operation and practice, and beyond. In this scenario, the research farm contributes to the education, in a grand sense, of students of UBC, as well as the regional and local community.

Ultimately, the UBC Agri-community Centre could focus on education and research which coincides with the philosophy of education and research of the academic environment, but offers as an extension to the academics, in the form of practical experience as an apprenticeship program. Thus, goals and objectives for this option would emphasize academic education and research, as well as an opportunity for 'hands on experience.'

The farm could develop apprenticeship program in the areas of:

- Dairy
- Crop / Horticulture
- Agro / Forestry
- Other

The landbase diversity of the farm also enables education and research for a wider breadth of disciplines such as:

Landscape Architecture
Ecology Studies
Biology
Botany
Environmental Studies
Soils
Aquatic systems and Fisheries
Social Sciences
Arts

The farm functions semi-autonomously, under the guiding principles, vision, goals and objectives outlined by the university. All organizations of the Oyster river community should be involved:

The Farm and Dairy
Oyster River Enhancement Society
The Nature Trust
Ducks Unlimited
The Regional District

The UBC Agri-community Centre becomes a major element of the farm and community. Residences are located north of the centre in the Student community Hamlet, an "experimental" housing scenario focusing on alternative waste systems and energy sources. These guesthouses are developed to create a link among visiting academics, students, and community members employed by the farm. These houses may also provide accommodation for PHD and Master's students doing research on the site and/or within the community, as well as for visiting academics and researchers to the farm site and/or regional area. Offices are developed in within the Agri-community Centre to support a variety of research activities.

The Centre site serves as an extension of the university campus and is designed to accommodate a myriad of different uses. All structures are designed in such a way as to enable flexibility and adaptability for various types of learning and research projects. Ensuring this type of flexibility in the design and layout of these working / learning units accommodates for changing patterns in research and education, and serves to avoid heavy costs associated with capital intensive research projects which have very specific and highly technical frameworks of focus. Broad based multidisciplinary and interdisciplinary research and learning projects based

on the use of smaller scale, appropriate technologies will be most applicable for this academic research site.

Other Farm / Agri-community Features

The Dairy Unit is maintained. Research related to the grazing the dairy herd is continued, and other projects related to the production and the on farm processing and sales of fluid milk and milk products is established at this location.

A small eco-hamlet, directly east of the Agri-community Centre along the farm's central spine has been developed (Figure 27: Woodhus Eco-Hamlet). This unit houses Nature Trust Groups and members of the Oyster River Enhancement Society, as well as student employees and or volunteers working with these conservation organizations. From this location, study tours are coordinated and education opportunities are undertaken by these "live in stewards." These stewards are responsible for the maintenance of the public paths and for the education of visitors regarding the "Code of Ethics" associated with the public use of the farmland.

The ephemeral streams and the existing ditches on the farm are restored using bioengineering and stream restoration strategies. Research is conducted on stream quality and flow; the integrity of these water channels are monitored and serve as indicators for the impacts of storm water run-off and non point source pollution occurring in the nearby residential villages. The research and activity is linked to storm water management and practices upstream. Stewards participate in research activities and community education volunteer programs linked to storm water management practices. A biosolids waste management program is established on site. A secondary sewage treatment plant is developed in the local community and the bio-solid effluent is used as a forage crop nutrient source by the farm.

Soil and wildlife conservation research is carried out in the fields adjacent to the Oyster Pond; alternative food crops and cropping practices are explored to identify new opportunities in forage and food crops that may serve towards maintaining the native soil ecosystem integrity, as well as significant wildlife habitat and waterfowl forage, while still providing viable agricultural opportunity. Tours and educational opportunities are carried out on site.

The forest bluff adjacent to the Oyster River Regional Park is bequeathed to the Regional District in trust. This wooded area with significant eagle habitat becomes an extension of the Regional Park, and is thus managed and protected by Regional Park jurisdiction. Trails are

upgraded and maintained by the 'live-in stewards', and bioengineering strategies are employed along the Oyster to restore the river's edge.

A Regional Bike Route is developed. This "biking alternative route" extends from the south alongside the Island highway, to the Oyster River Regional Park via the Old Island Highway, further on to the UBC Agri-community Centre, and continues past along the existing farm lane to the northern boundary of the farm. Here, one can continue along the Island Highway, or take the eastward road towards Salmon Point and Woodhus Slough. Ultimately, the bike route serves as a Regional "car free" link through communities, parklands, and open space, to schools, shopping and recreation locations. It offers a viable non-motorized route by which to get around the town. Bike barns are placed at strategic locations along the route – the regional Park, the UBC Agri-community Centre, the Oyster river Village Gateway, and the north end of the UBC Research Farm.

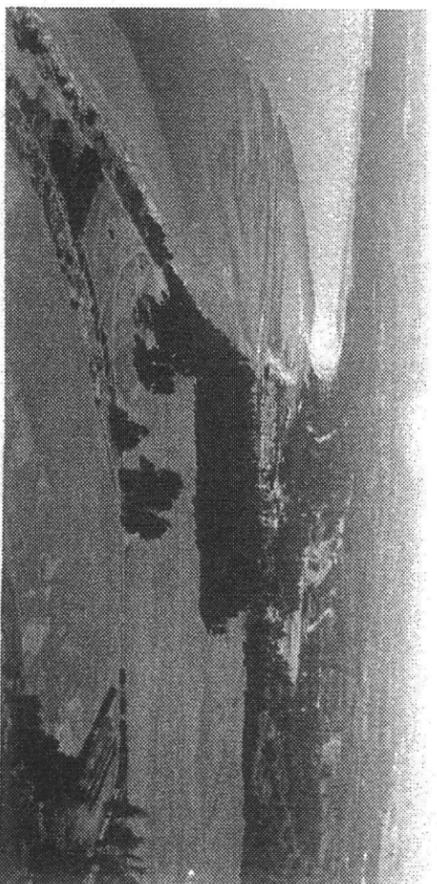
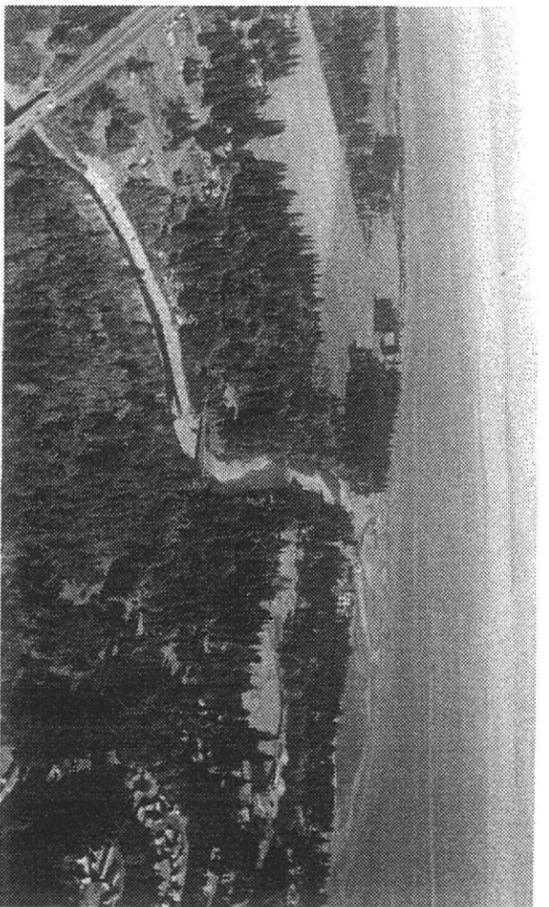
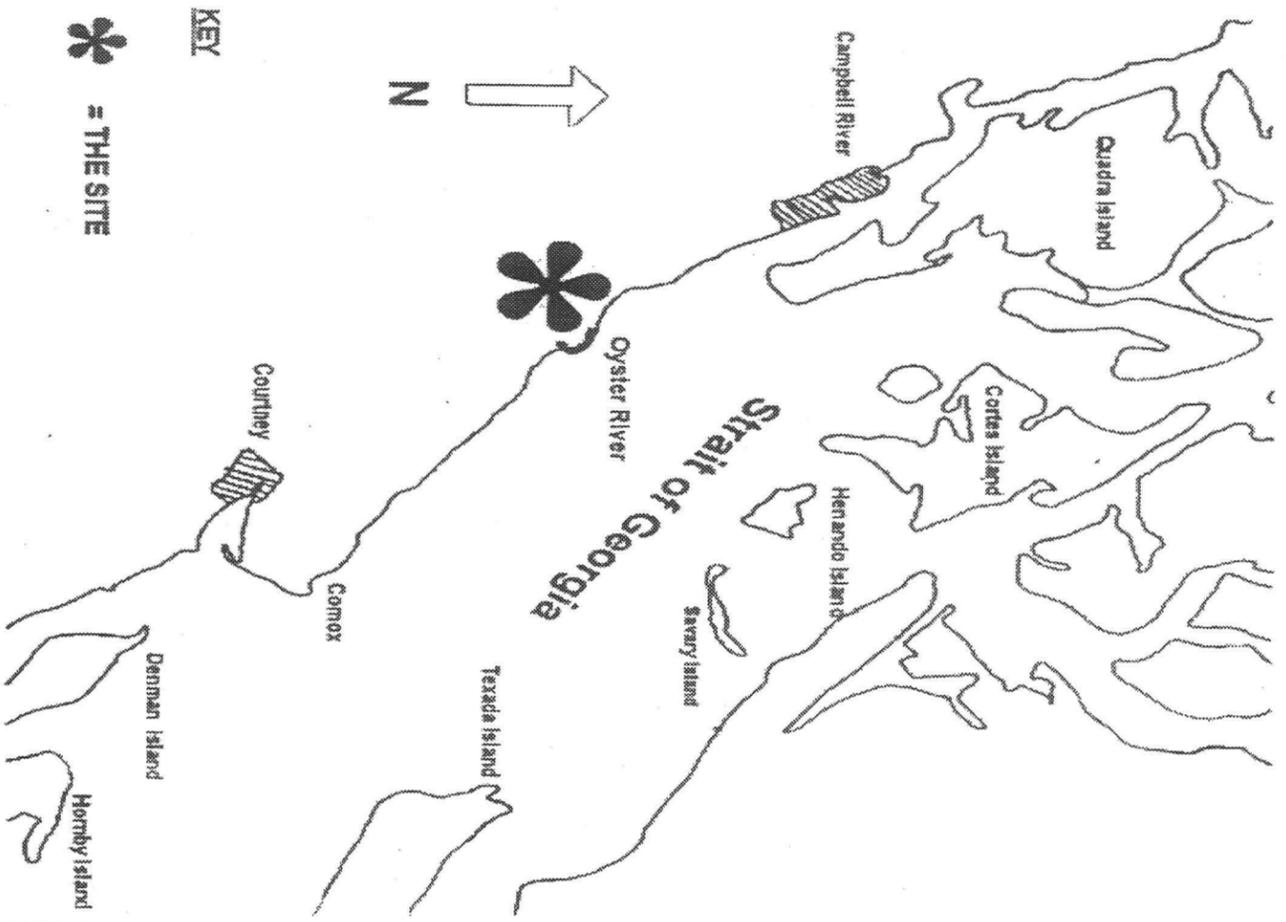
Summary

The farm has established a sense of rural ideals and ethics in its form, in its layout, in its design. By linking with community in terms of infrastructure, enhancement practices, and employing production systems which serve to benefit the local community, a win- win situation for both farm and community results. The farm's focus on local food production for local food consumption is a key element of community and agricultural integration, and serves as a model for other agricultural enterprises throughout British Columbia. The design of the farm, the retention of expansive agricultural land, the recreation and ecological Greenways, ensure the visual qualities of the Oyster River area are retained and enable the farm and the local area to continue to speak of a rural aesthetic, and strong ecological integrity.

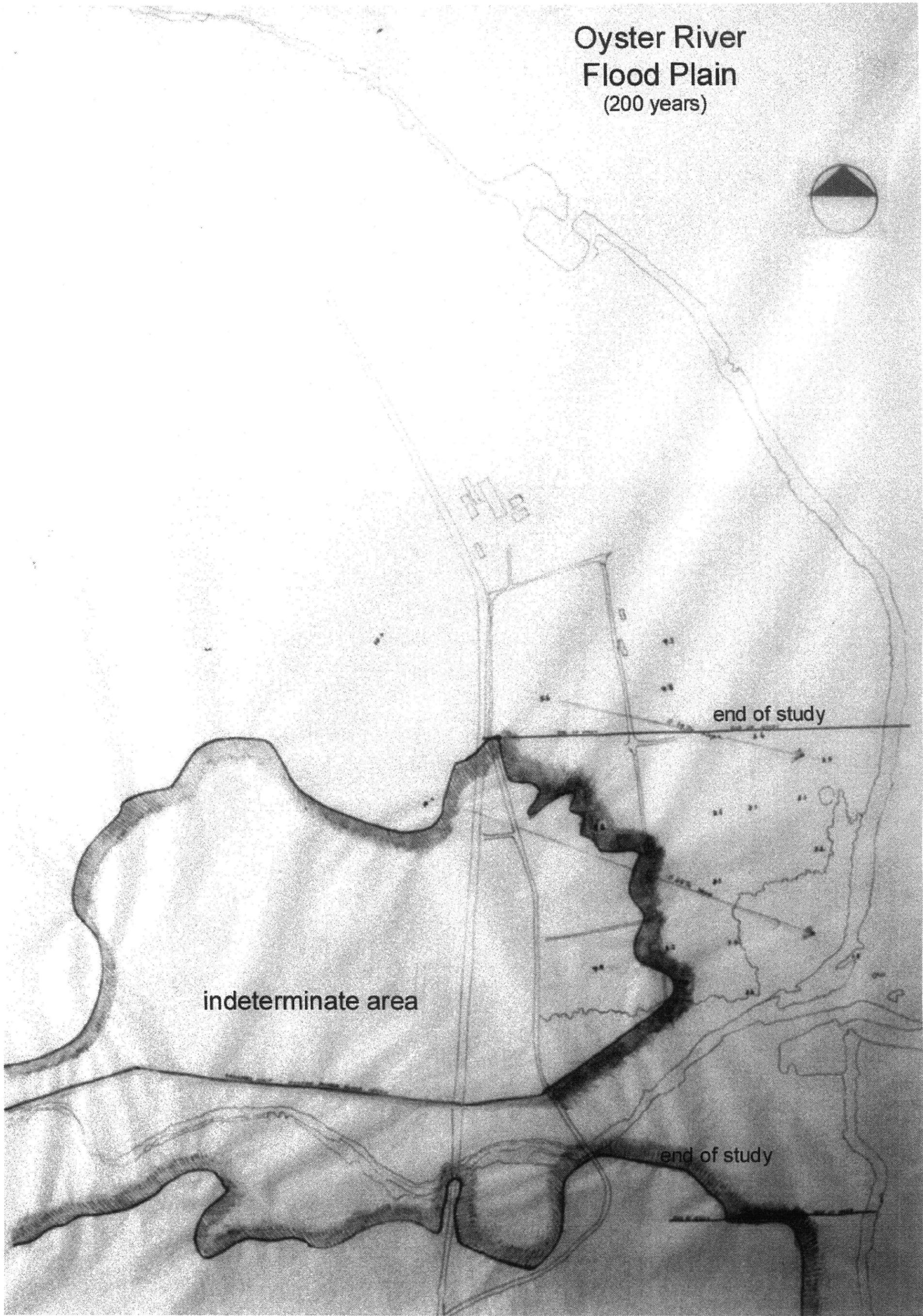
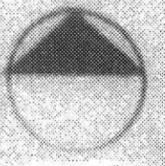
A university is an academic research institution, and an intellectual public institution. As such, a university has a major responsibility to the larger immediate community, and should actively participate with the public realm of the associated community to help to ensure social and ecological well being of the area. Ultimately, UBC, as part of the Oyster River area, has a fundamental role to play in terms of the social and ecological integrity of this region.

In order to accommodate agricultural, education and community needs, this scenario for the UBC Oyster River Research Farm emphasizes a collective Vision and plan which unites all activities under a common purpose: *To improve agriculture and agricultural community within the Oyster River area.*

Oyster River



Oyster River Flood Plain (200 years)



indeterminate area

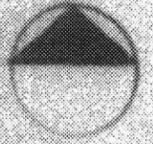
end of study

end of study

Soils

Coastal Beach

- sandy soil
- coastal dunes
- coastal scrub
- low to medium dunes
- coastal dunes
- coastal scrub



Class 1 & 2

Chernozems I-II

Class 4

Coandy - IV

- heavy soil
- heavy clay
- heavy sand
- heavy silt
- heavy loam
- heavy clay
- heavy sand

Class IV - primary and agricultural

Class 3

Qualicum - III

- heavy soil
- heavy clay
- heavy sand
- heavy silt
- heavy loam
- heavy clay
- heavy sand

Class 1 & 2

Chernozems I-II

- fine sandy soil
- heavy clay
- heavy sand
- heavy silt
- heavy loam
- heavy clay
- heavy sand

Class I-II - primary agricultural land

Class 1 & 2

Chernozems I-II

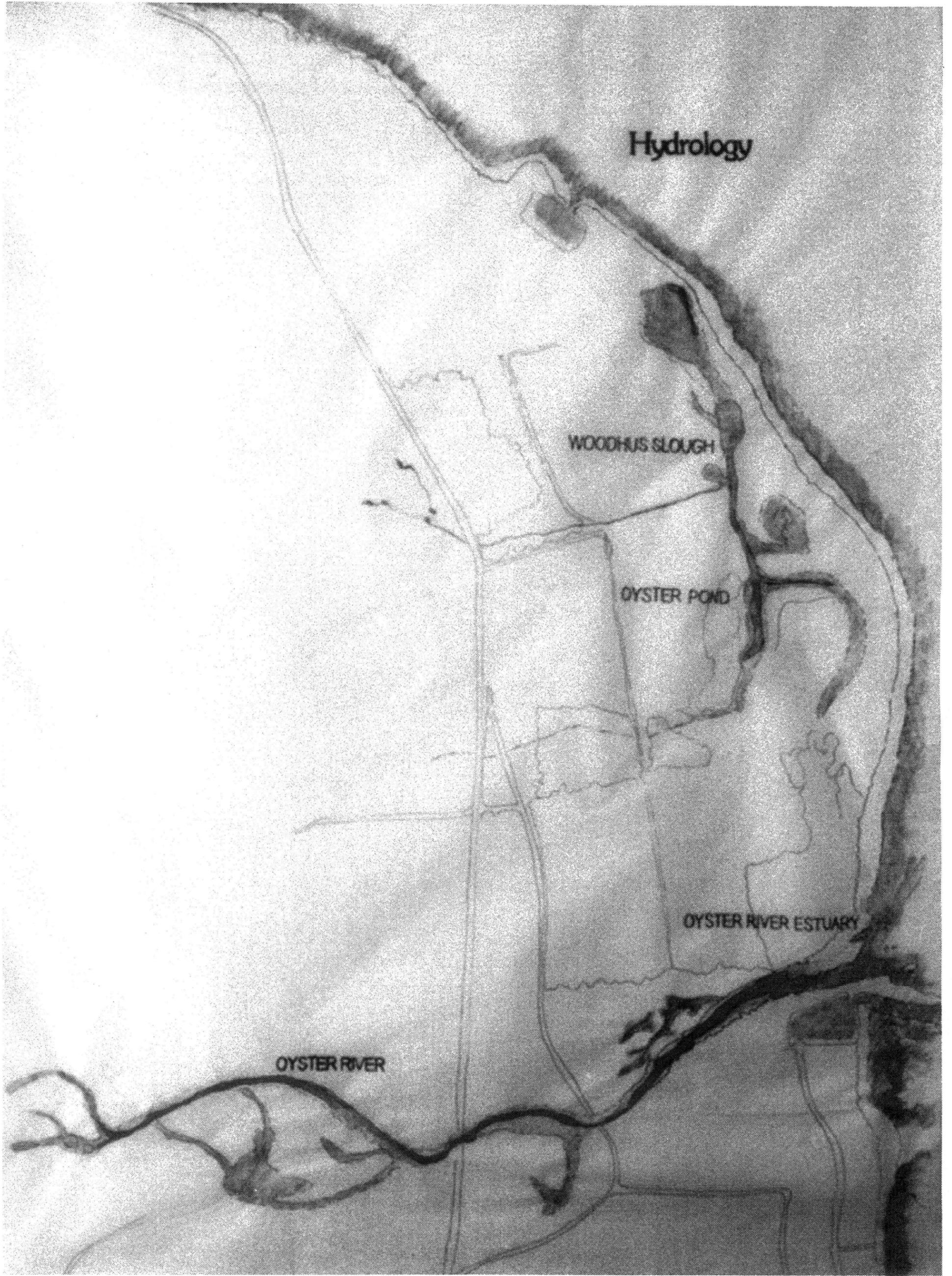
IV Coandy - IV

Eroded land

- heavy soil
- heavy clay
- heavy sand
- heavy silt
- heavy loam
- heavy clay
- heavy sand

IV Coandy - IV

Qualicum - III



Hydrology

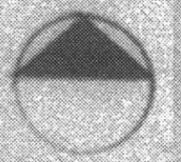
WOODHUS SLOUGH

OYSTER POND

OYSTER RIVER ESTUARY

OYSTER RIVER

Sensitive Landscape



FORESHORE/INTERTIDAL ZONE

SIGNIFICANT VEGETATION

WOODRUS SLOUGH

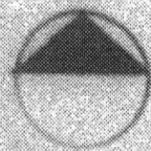
OYSTER POND

EAGLE NESTING SITE

OYSTER RIVER ESTUARY

OYSTER RIVER RIPARIAN EDGE

Culturally Significant Sites



SALMON POINT LODGE
OLD CARRIAGE WAY TRAIL

WOODHUS SLOUGH

UBC DAIRY UNIT

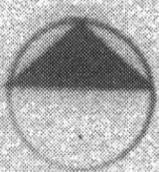
MONTFORD HOUSE SITE

OYSTER RIVER REGIONAL PARK

PADRE HISTORIC TRAIL

FISHERMAN'S LODGE

Vegetation mosaic



second growth

slough

emerging forest

slough

open field

second growth

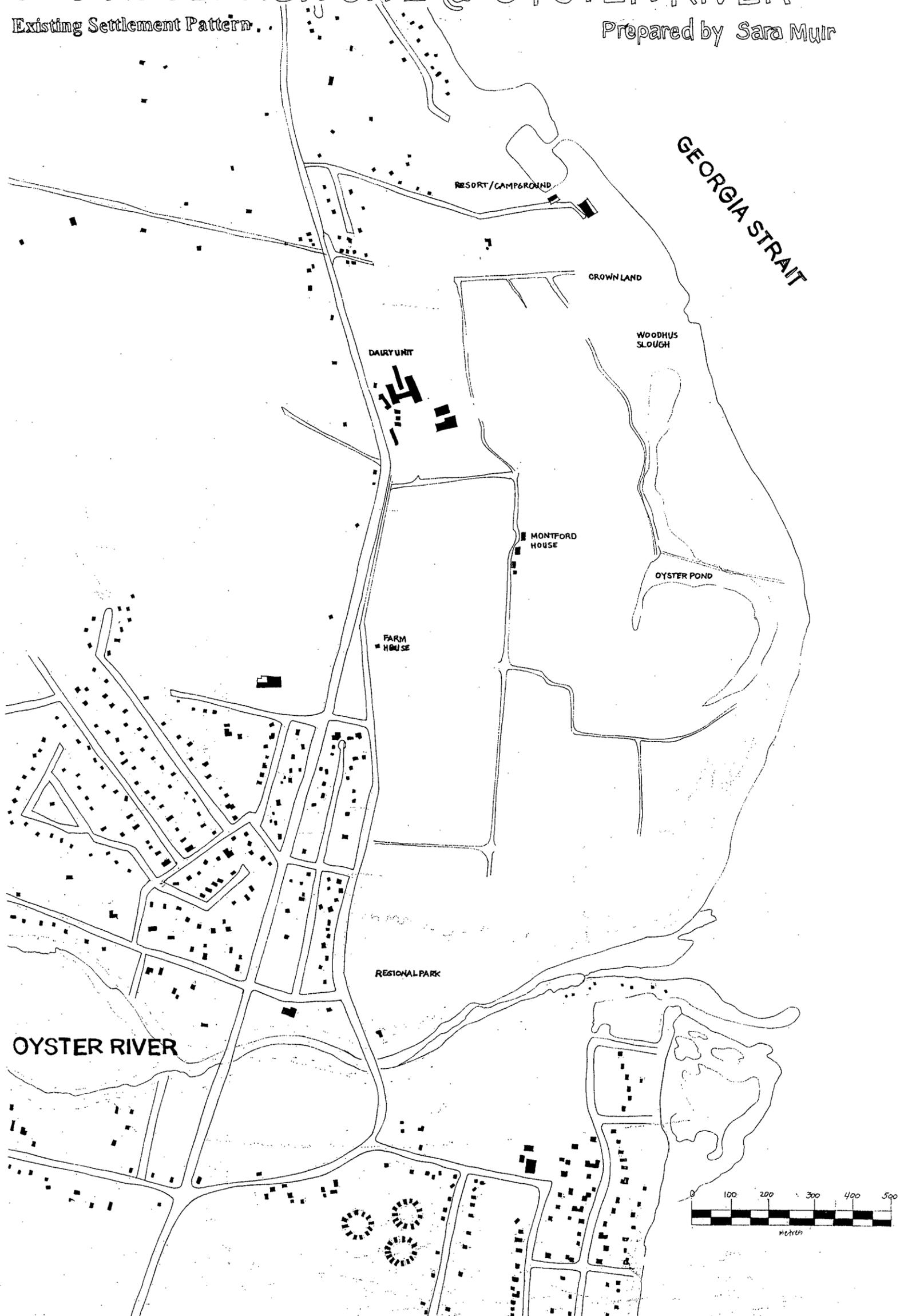
open field

riparian

UBC RESEARCH SITE @ OYSTER RIVER

Existing Settlement Pattern...

Prepared by Sara Muir



UBC Research Site @ Oyster River context

Prepared by: Sara Muir

LEGEND

- UBC PROPERTY
- DEVELOPMENT AREAS
- FUTURE TOWN CENTRE
- ECOLOGICAL GREENWAYS
- RECREATION GREENWAYS
- ALR
- FLR
- RESORT / CAMPGROUND
- PARKS
- CROWN LAND

0 500 metres

0 1524 feet

0 5 min walk

0 2 min bike

Georgia Strait

School

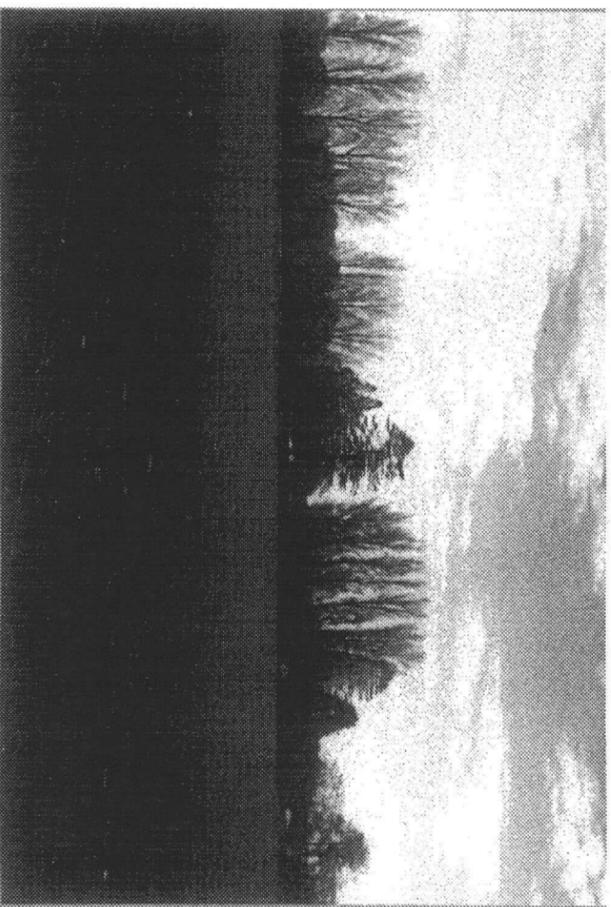
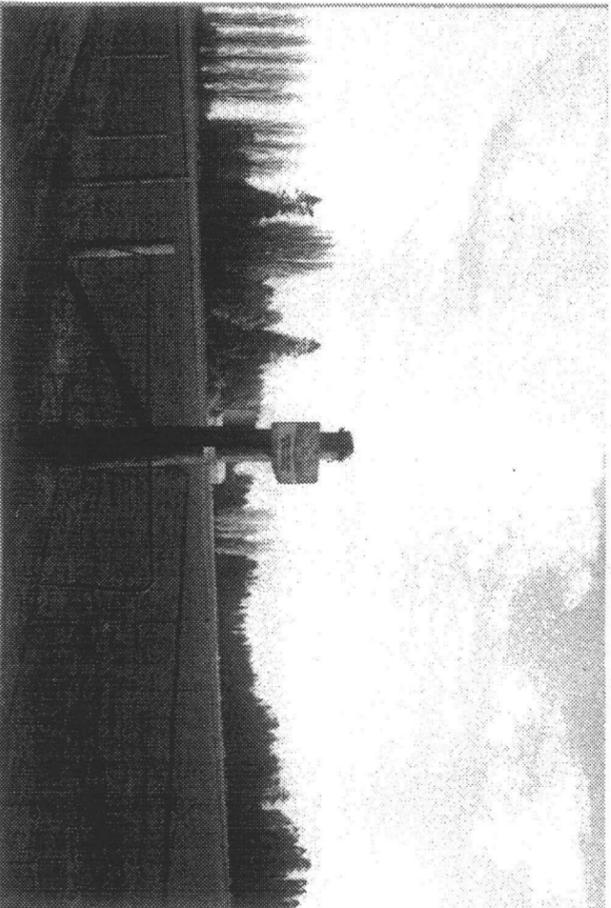
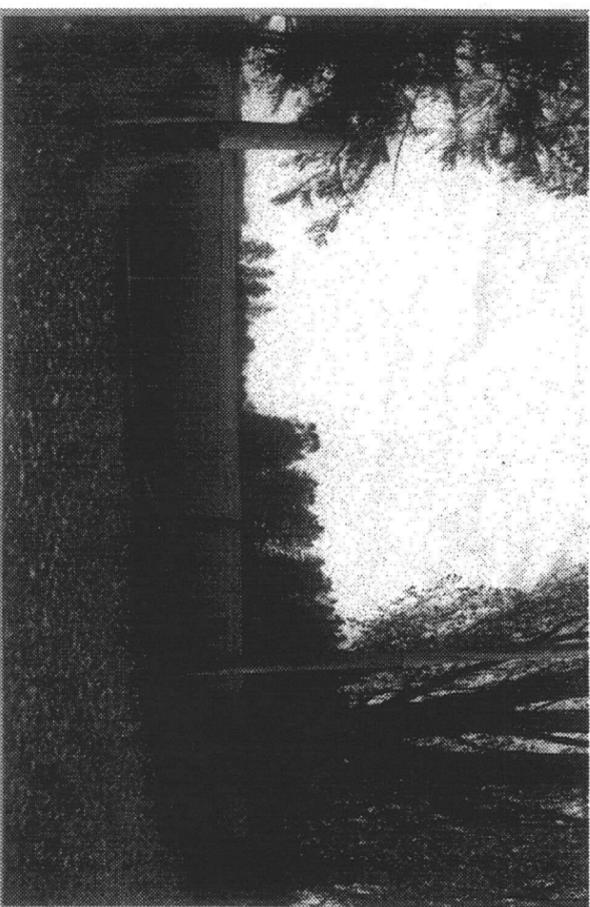
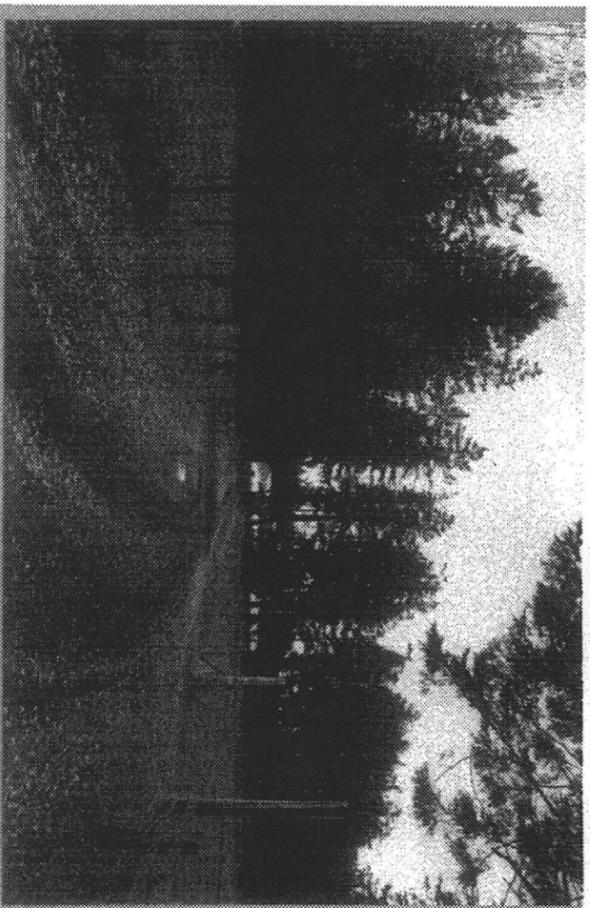
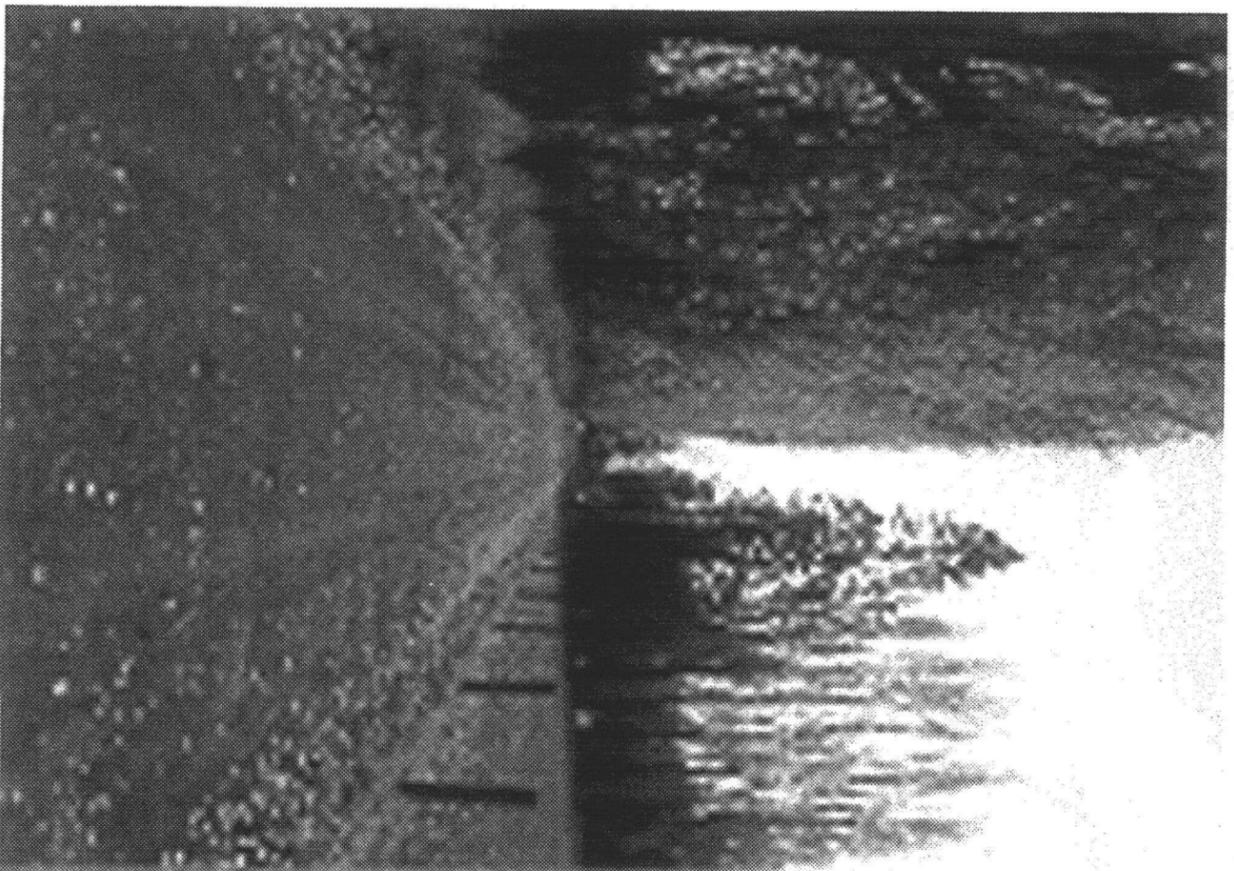
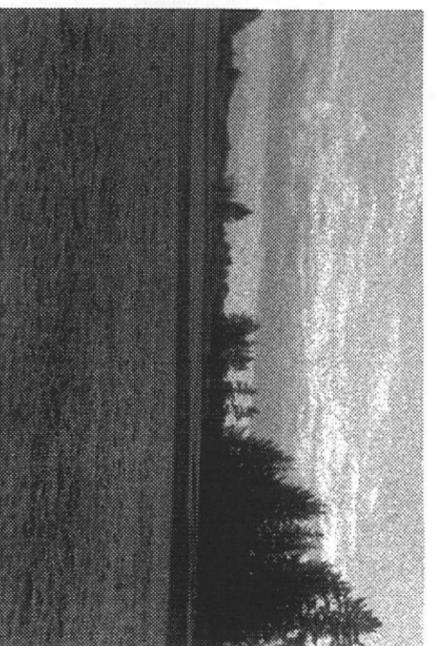
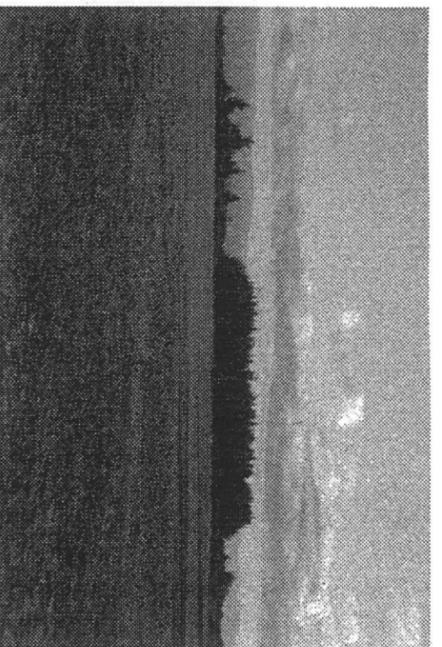
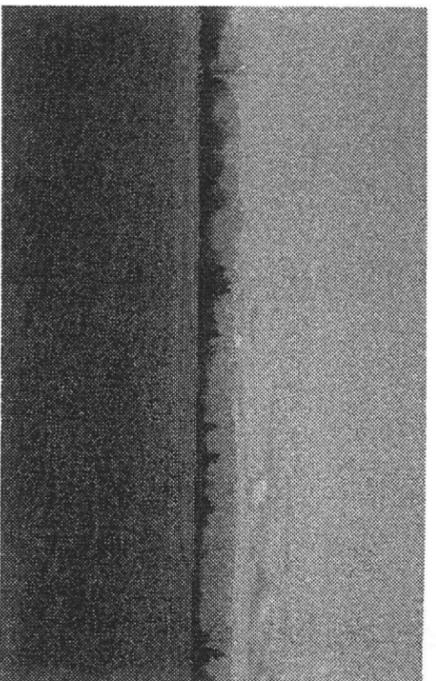
UBC Oyster River
Research Farm
(lower portion)

Oyster River
Regional Park

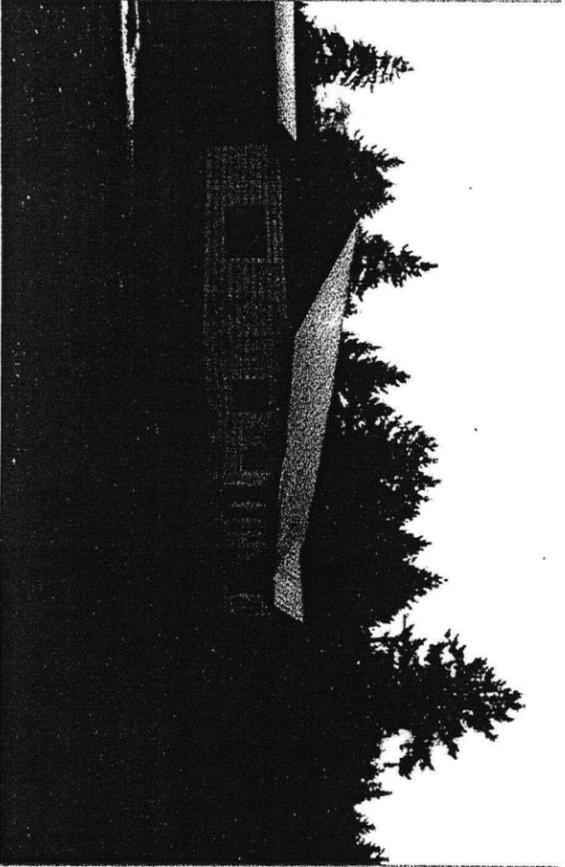
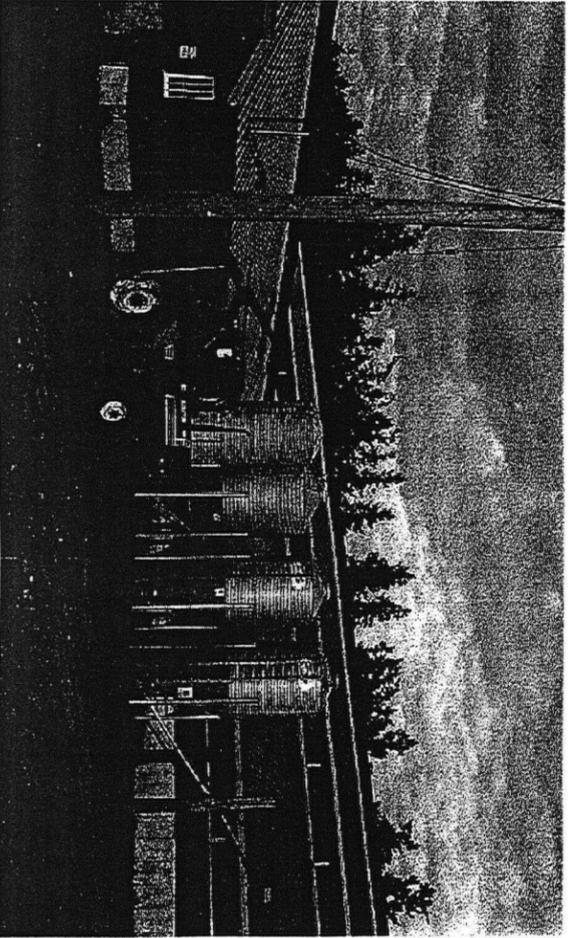
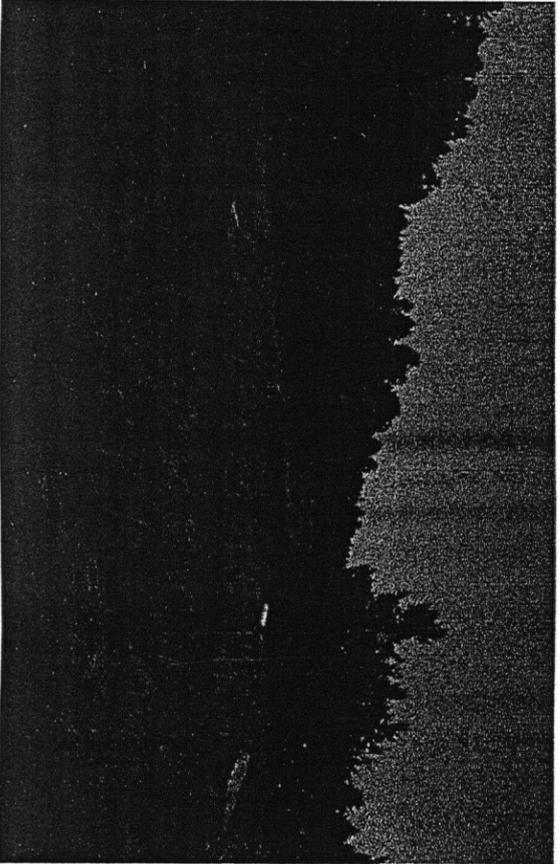
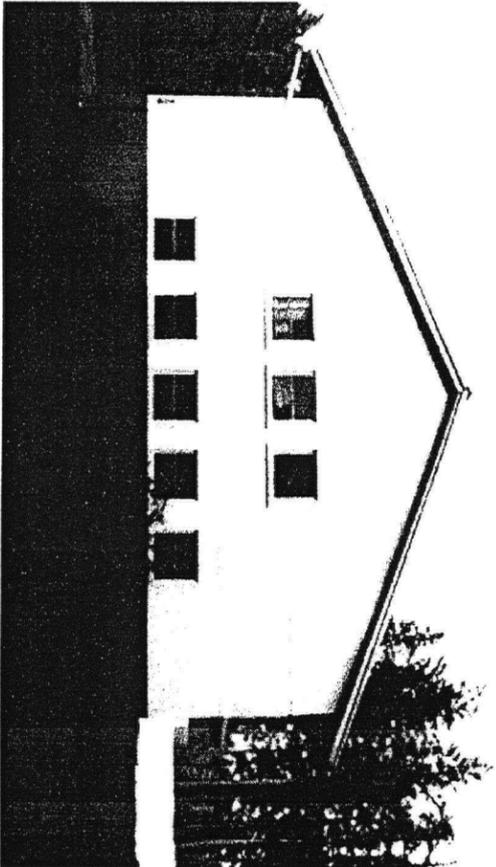
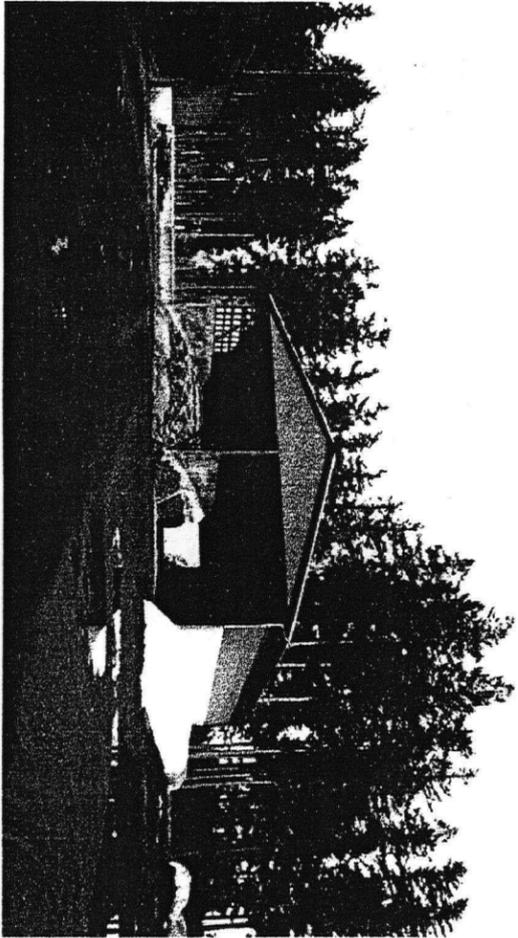
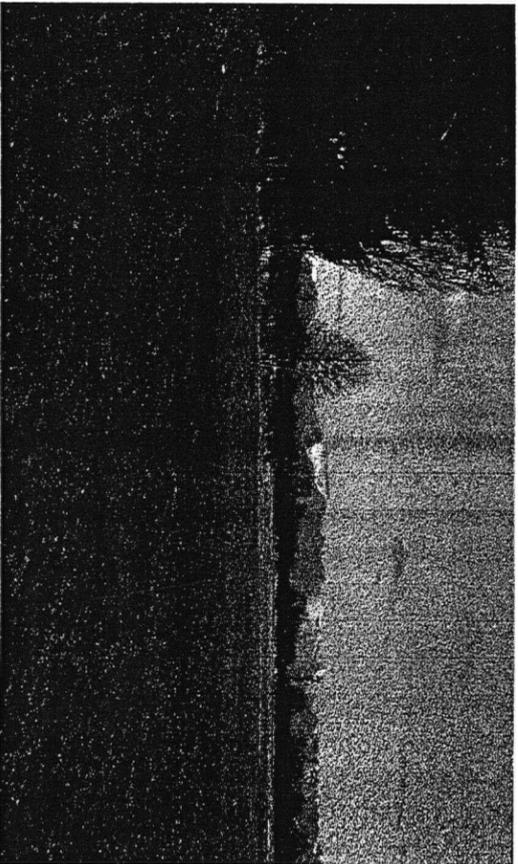
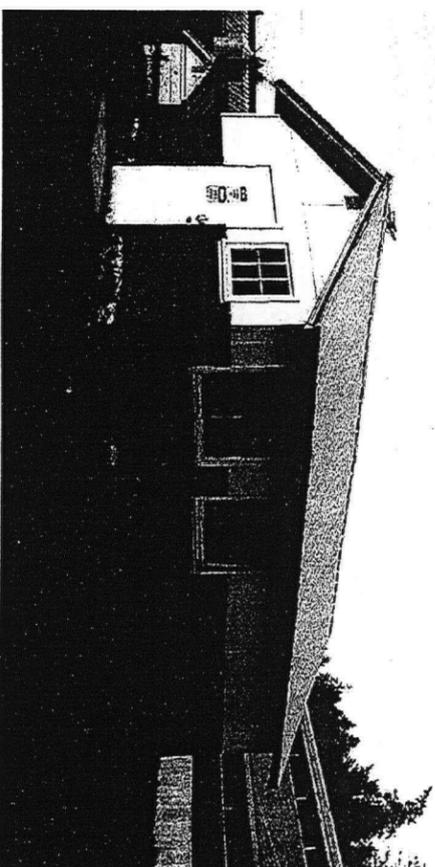
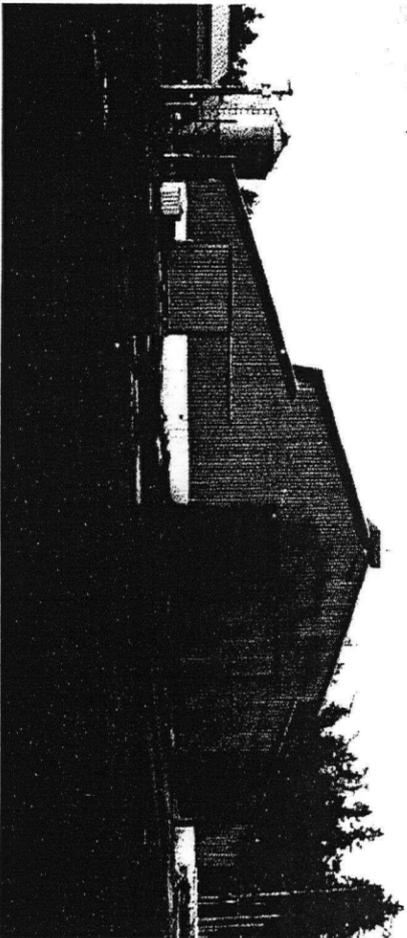
Oyster River

North

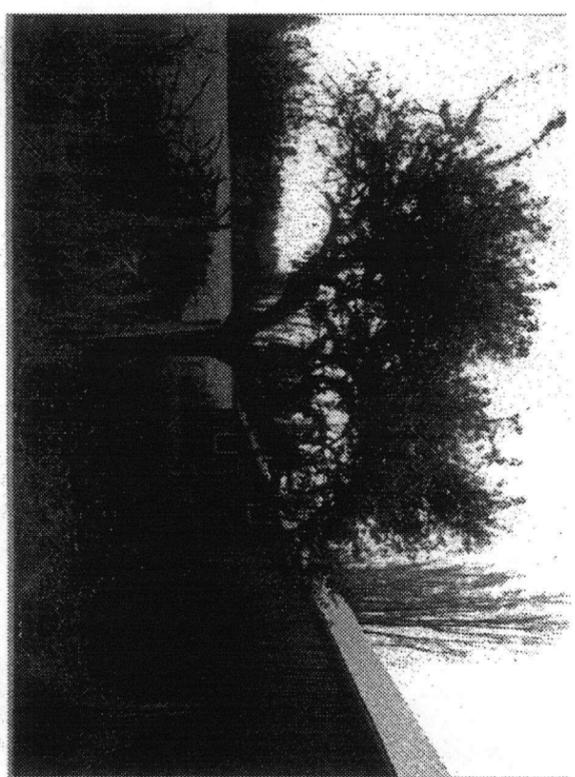
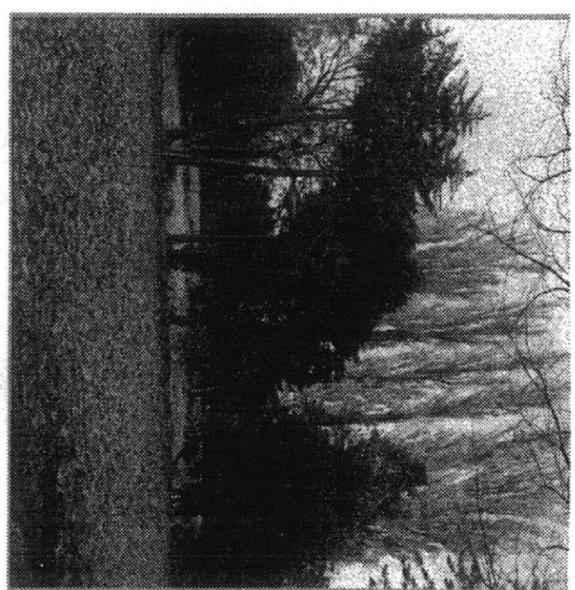
UBC Farm



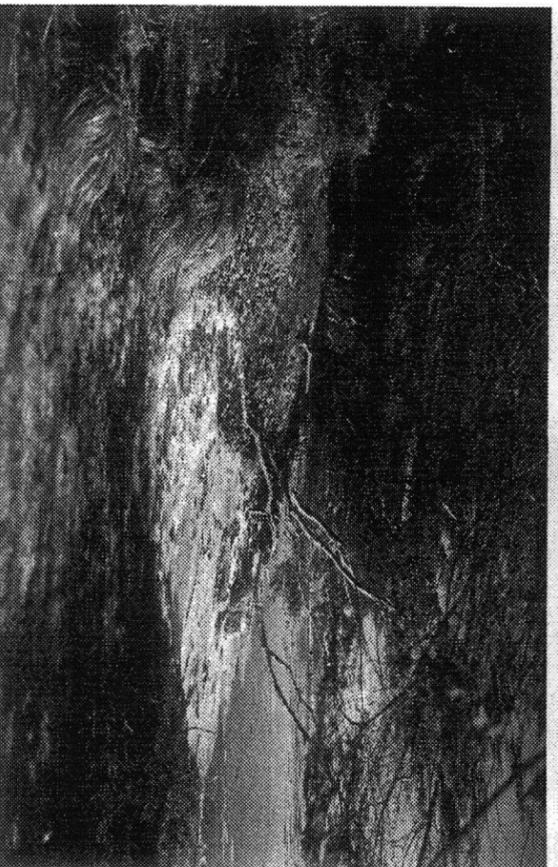
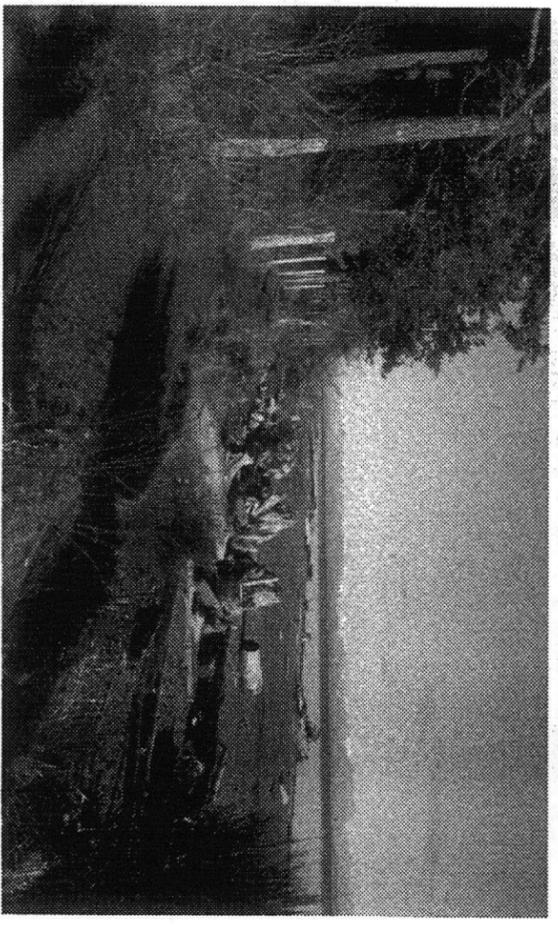
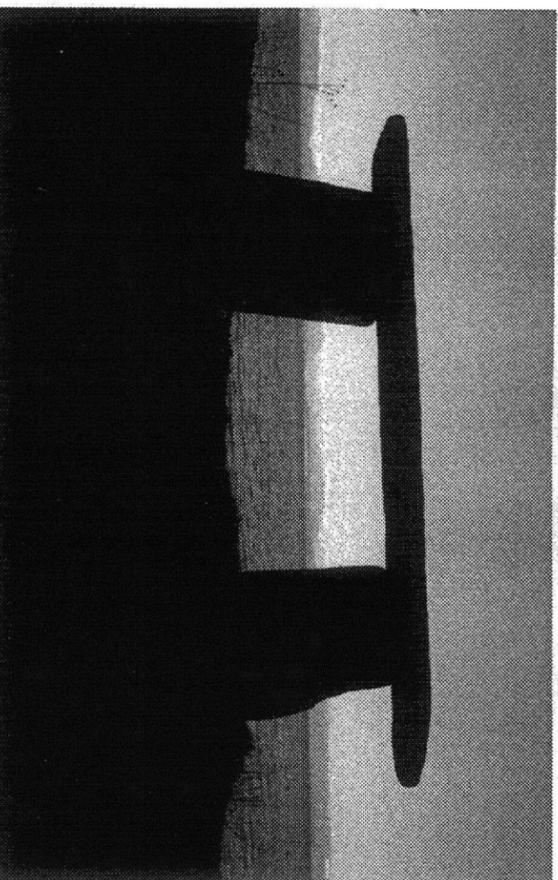
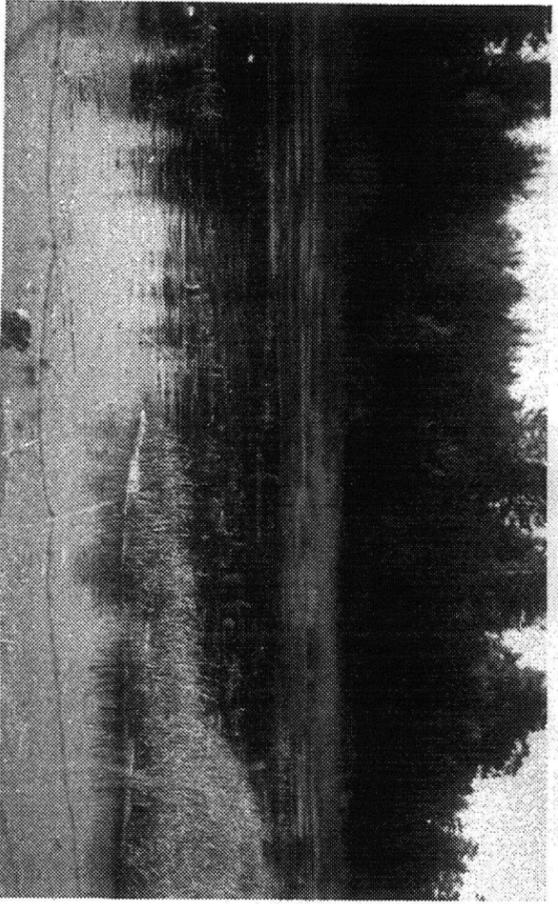
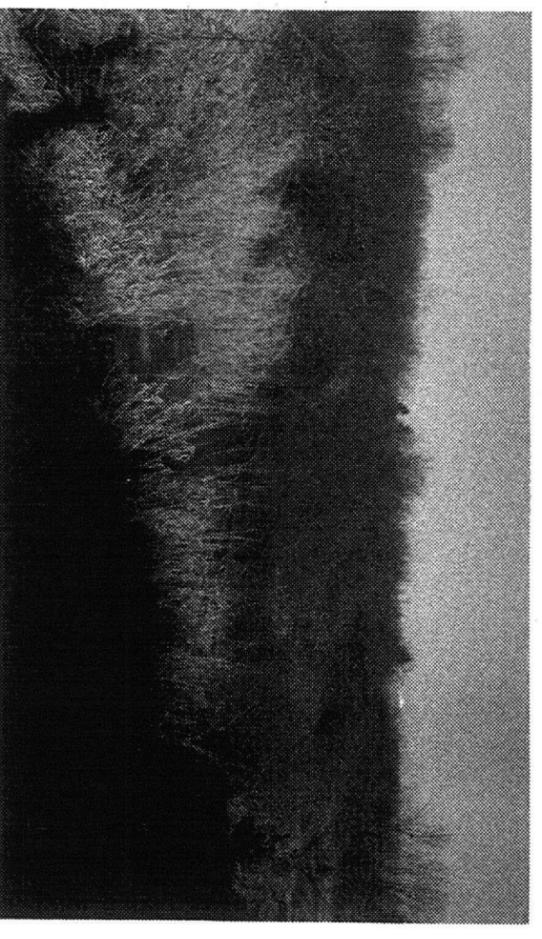
The Dairy Unit



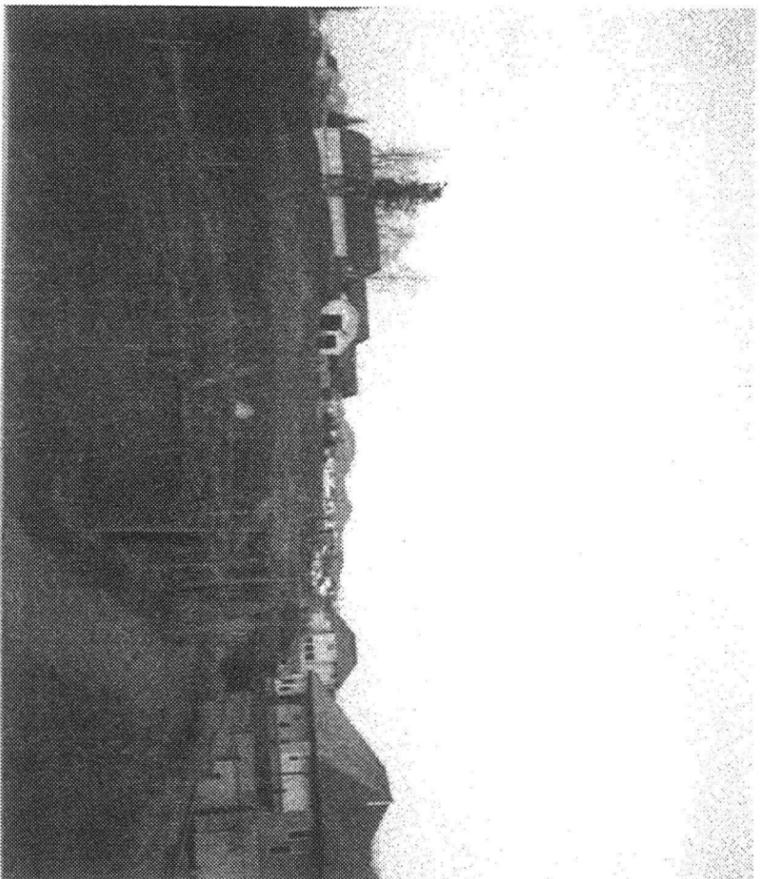
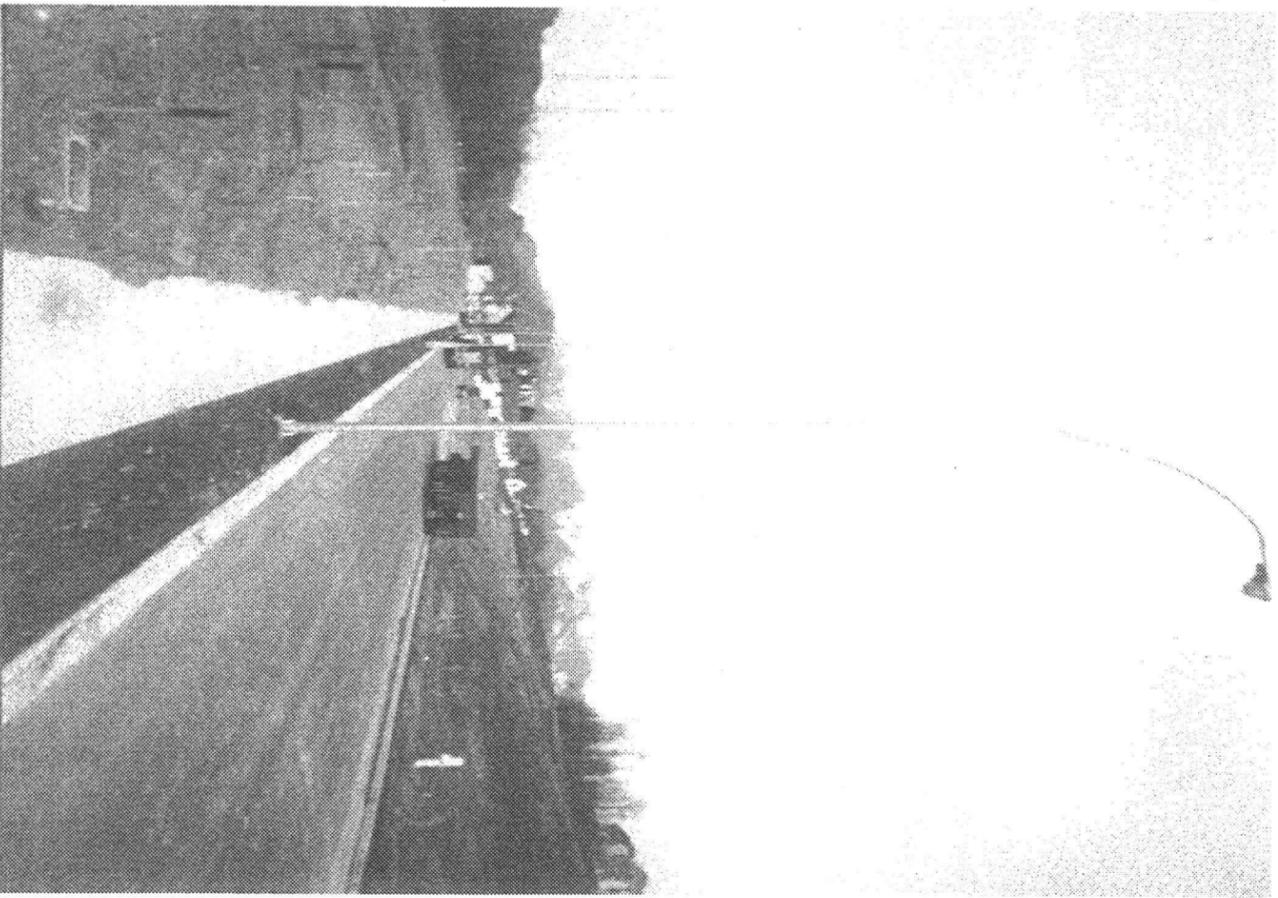
Montford House



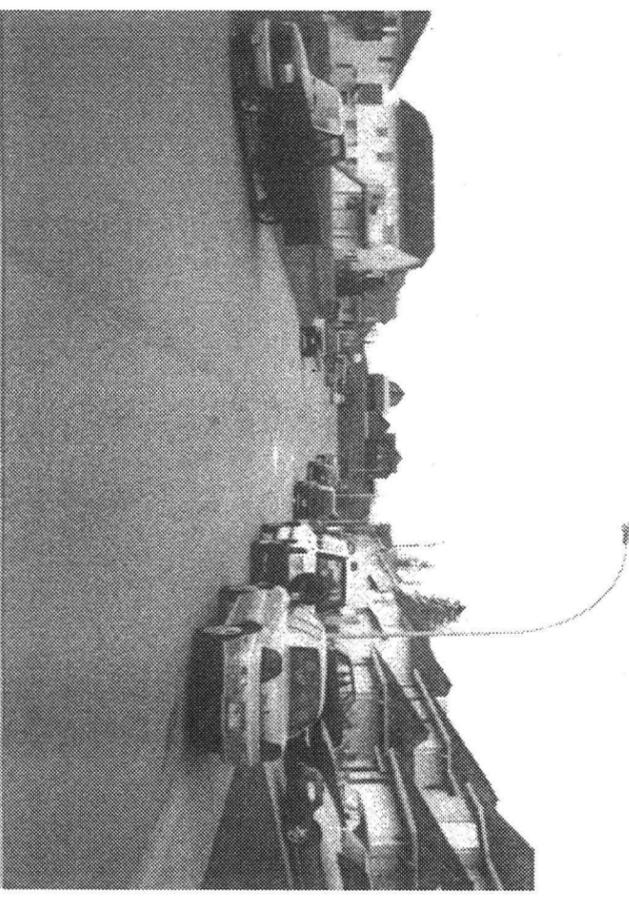
Woodhus Slough & Foreshore Trail



Losing Agriculture to Status Quo Suburbs



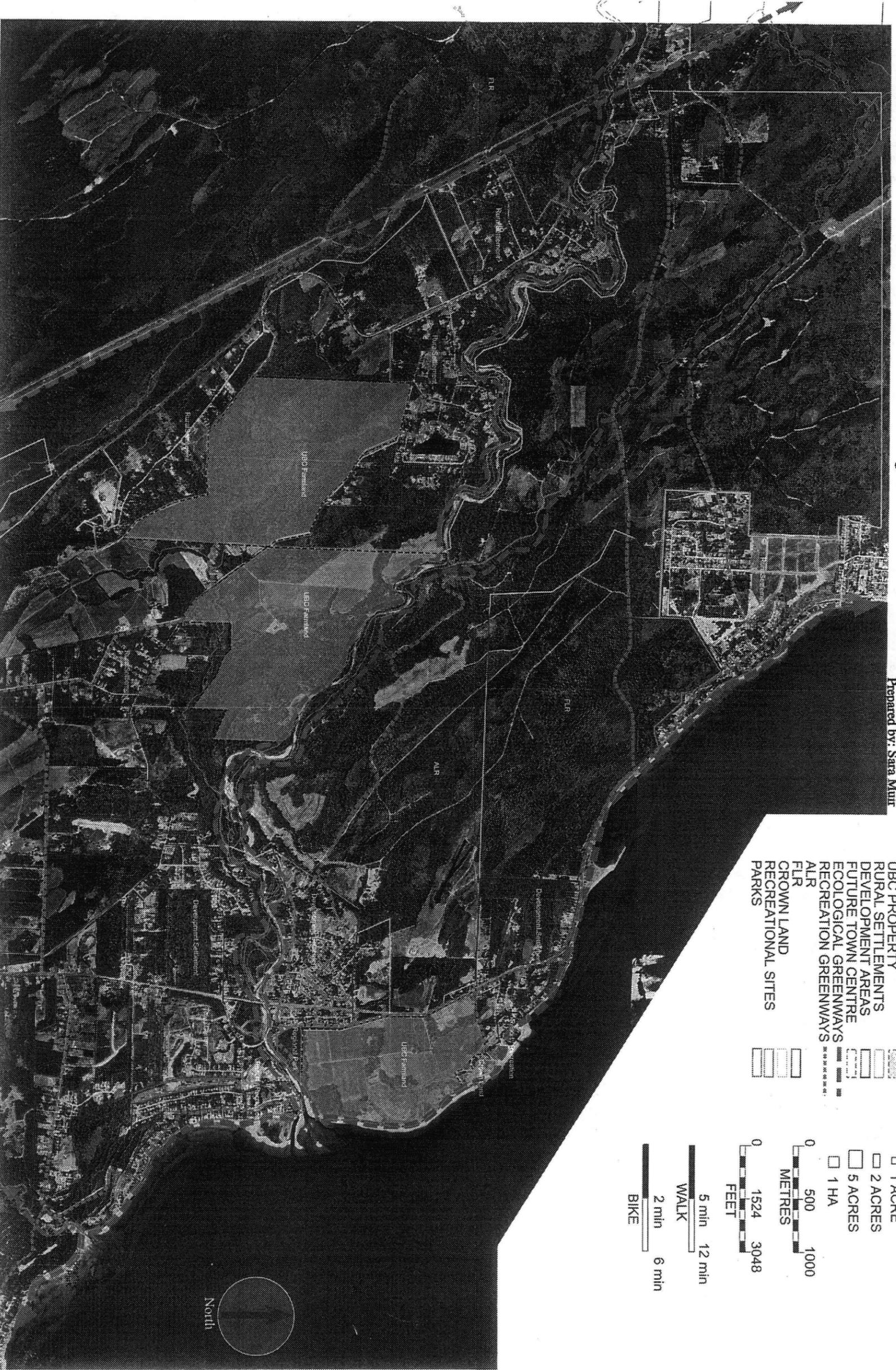
appalling agriculture / urban interface



***automobile dominated streets with wide, im-
permeable road surfaces***

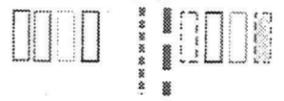
UBC Research Site @ Oyster River context

Prepared by: Sara Muir

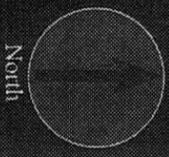


LEGEND

- UBC PROPERTY
- RURAL SETTLEMENTS
- DEVELOPMENT AREAS
- FUTURE TOWN CENTRE
- ECOLOGICAL GREENWAYS
- RECREATION GREENWAYS
- ALR
- FLR
- CROWN LAND
- RECREATIONAL SITES
- PARKS



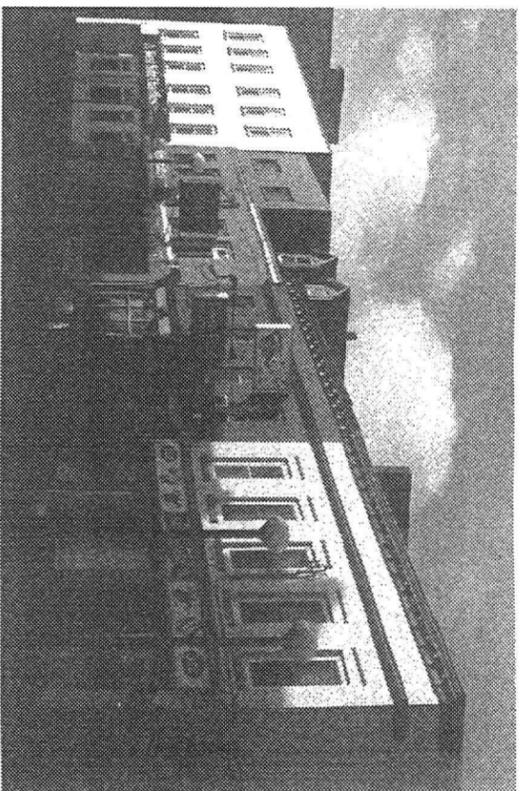
- 1 ACRE
- 2 ACRES
- 5 ACRES
- 1 HA



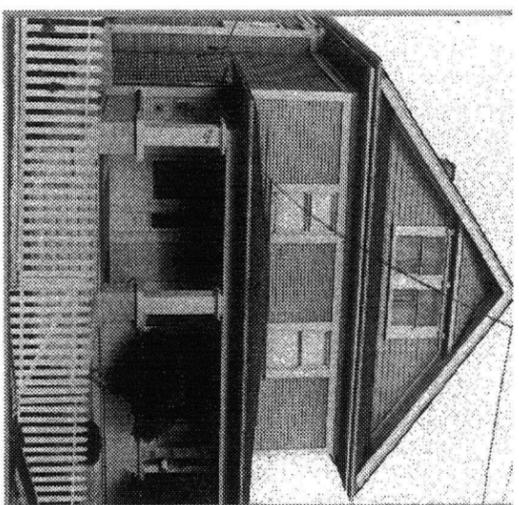
Options for Agriculture: Rural Villages



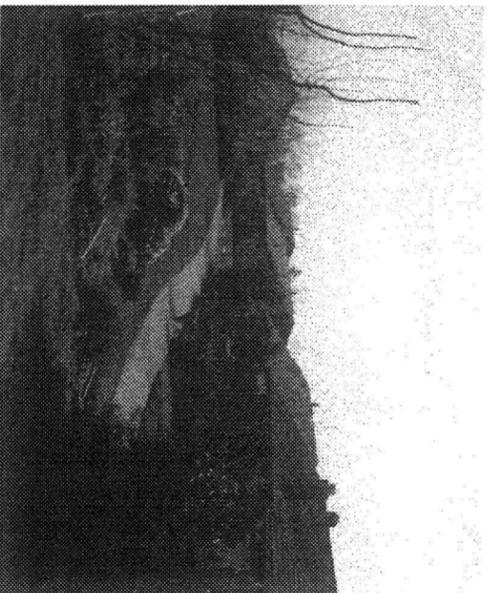
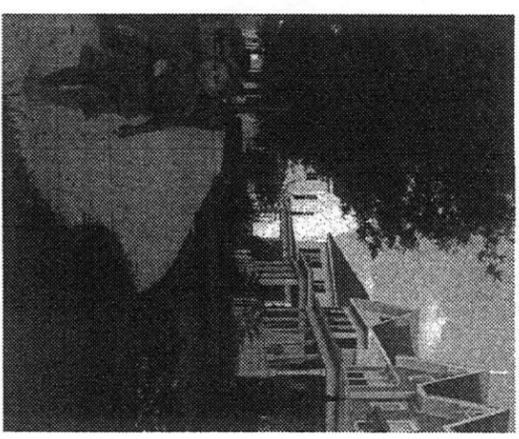
settlement boundaries



town centres



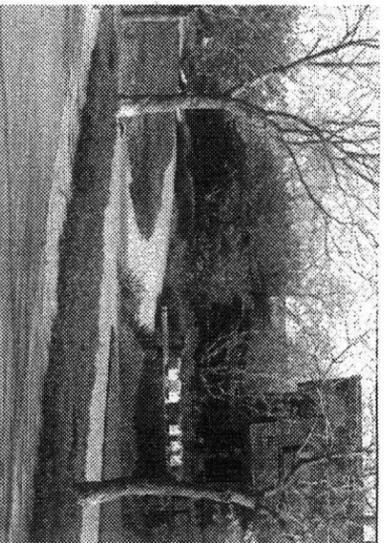
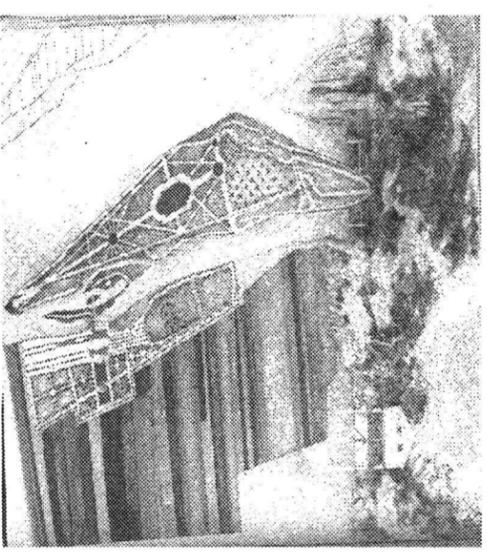
character homes on smaller lots



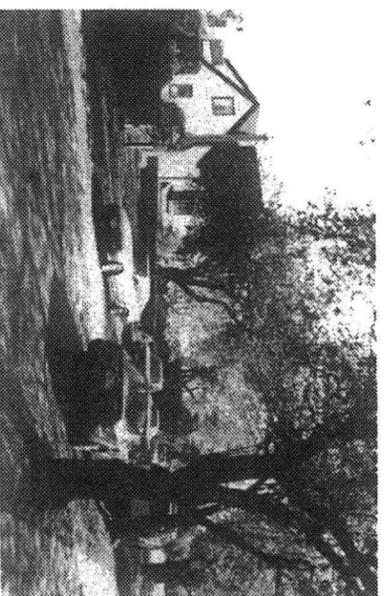
*bike routes & greenway
links*



*Farmer's Market & Community
Supported Agriculture "Buy Local"*



narrow streets with open swale systems

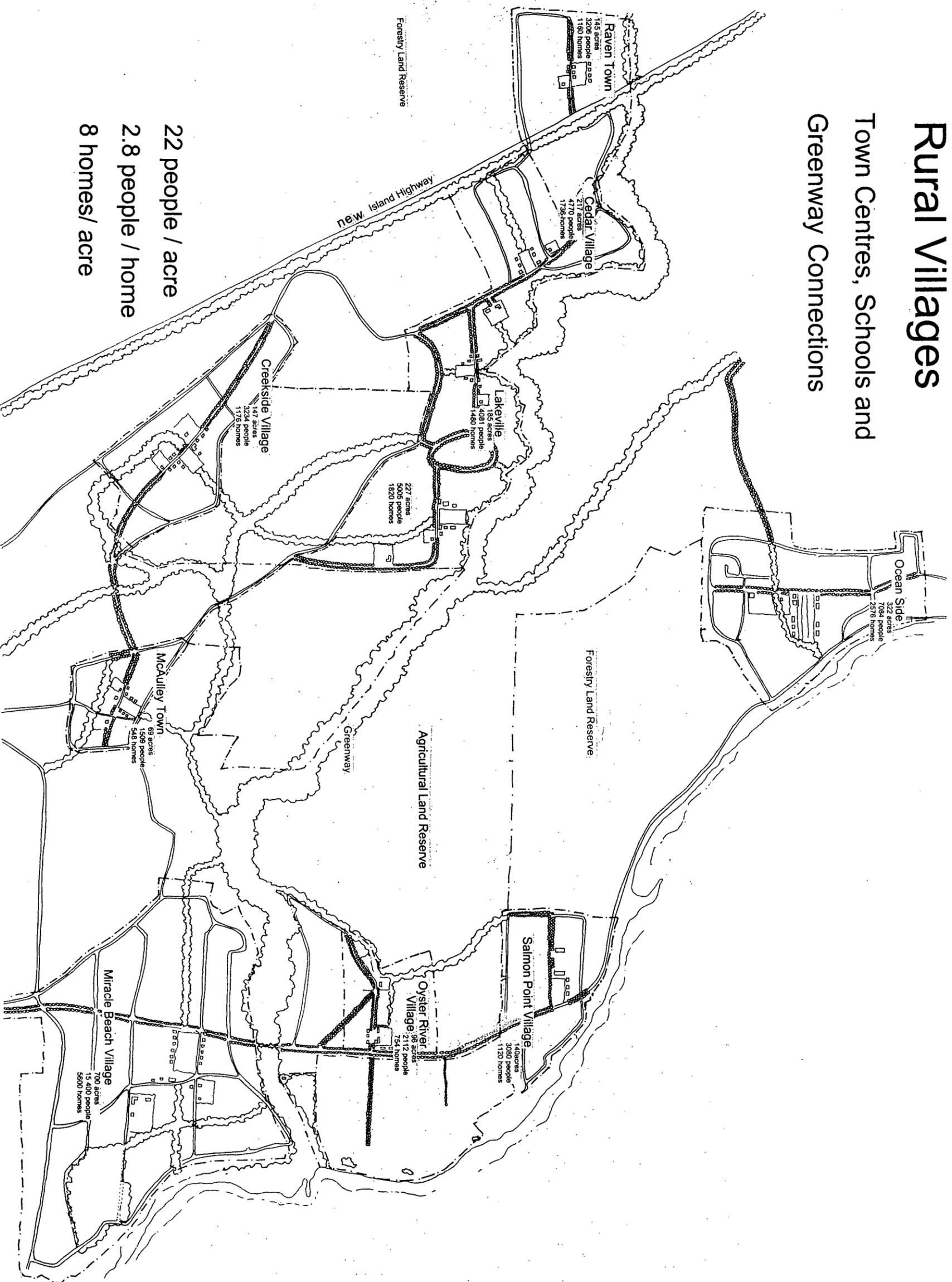


tree & permeable parking



Rural Villages

Town Centres, Schools and Greenway Connections



22 people / acre
2.8 people / home
8 homes / acre



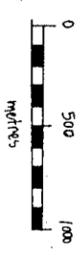
Scale

Prepared by:

Sara Muir
(BScAg)

OYSTER RIVER
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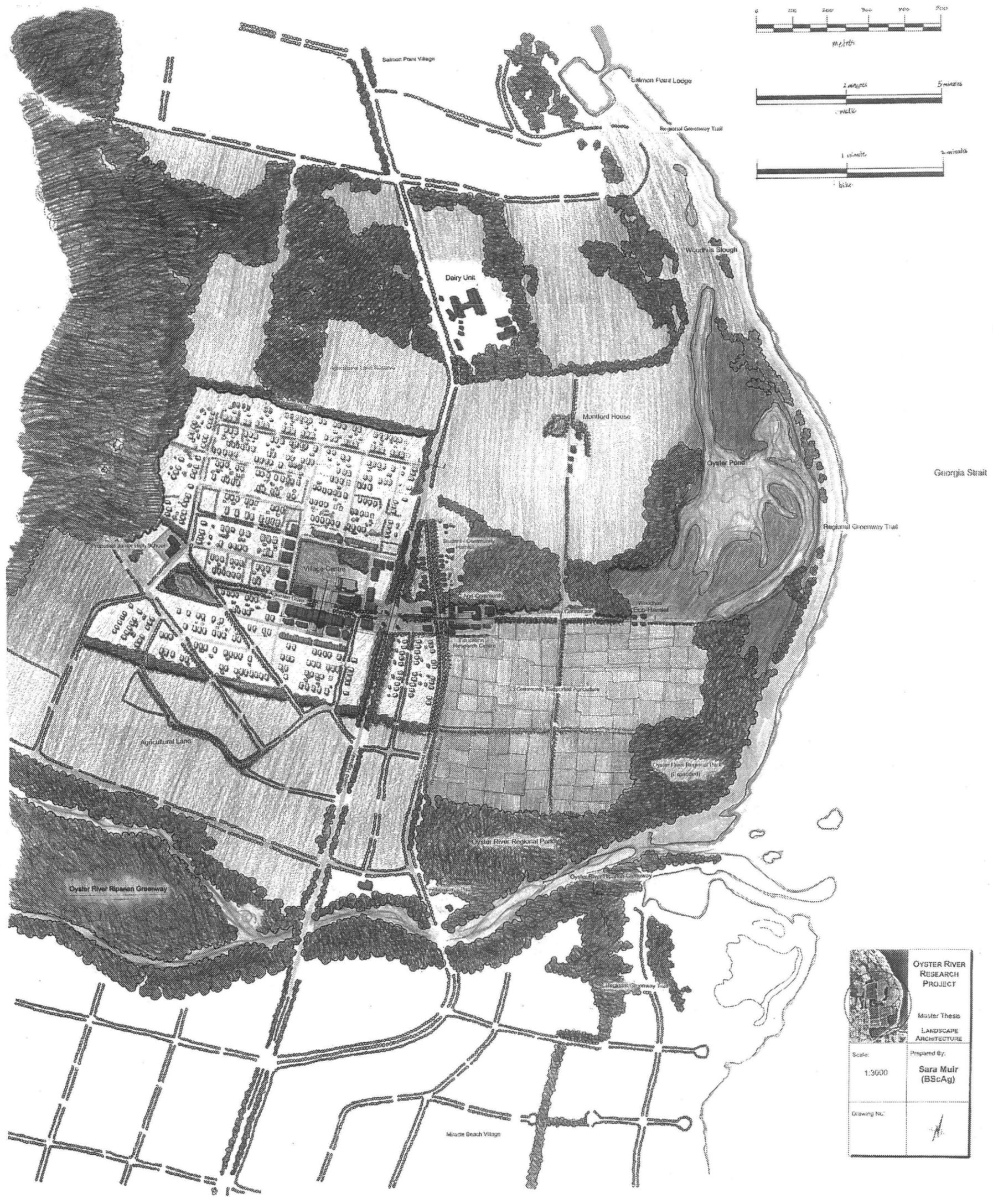
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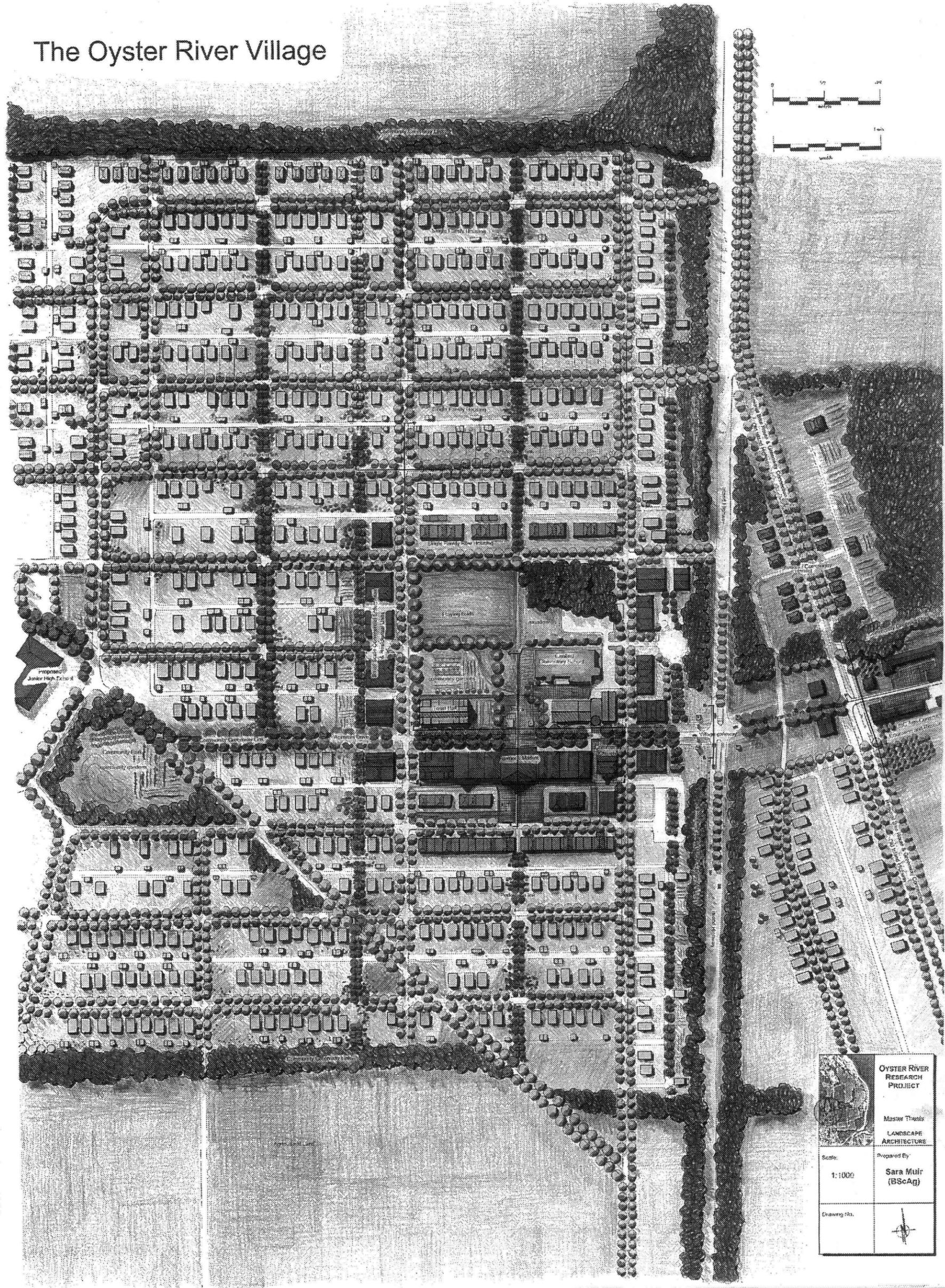


UBC Research Farm & Oyster River Village



	OYSTER RIVER RESEARCH PROJECT
	Master Thesis LANDSCAPE ARCHITECTURE
Scale: 1:3000	Prepared By: Sara Muir (BScAg)
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The Oyster River Village

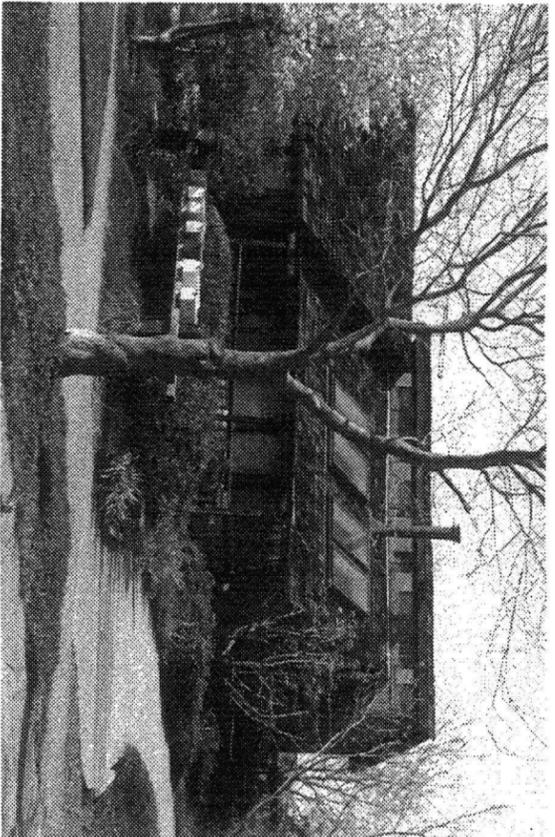


 OYSTER RIVER RESEARCH PROJECT	
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Drawing No.	

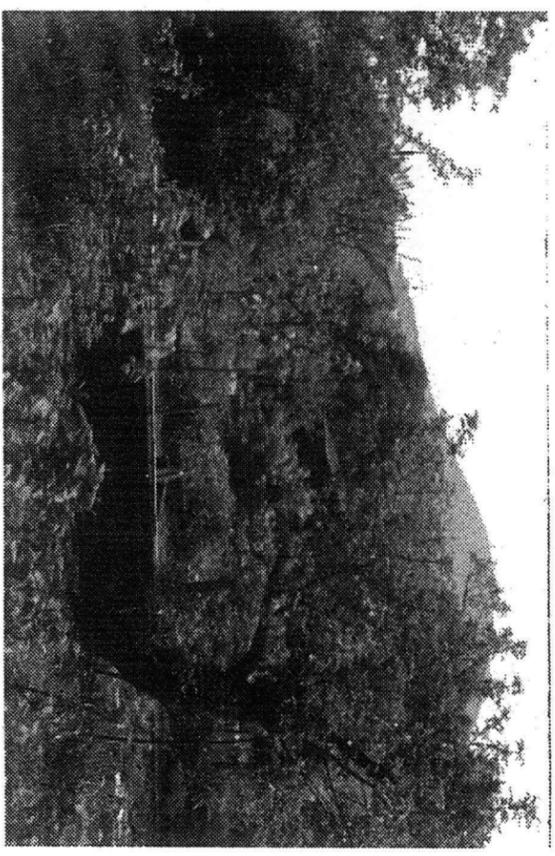
Options for Oyster River Village



a narrowed highway



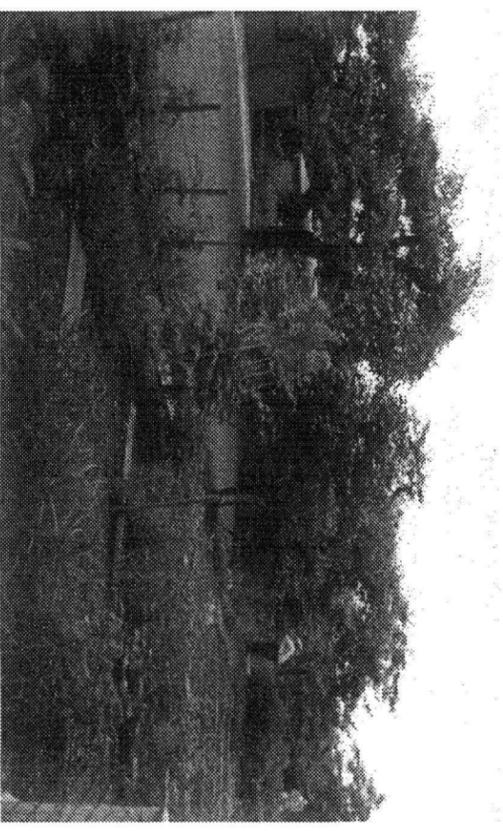
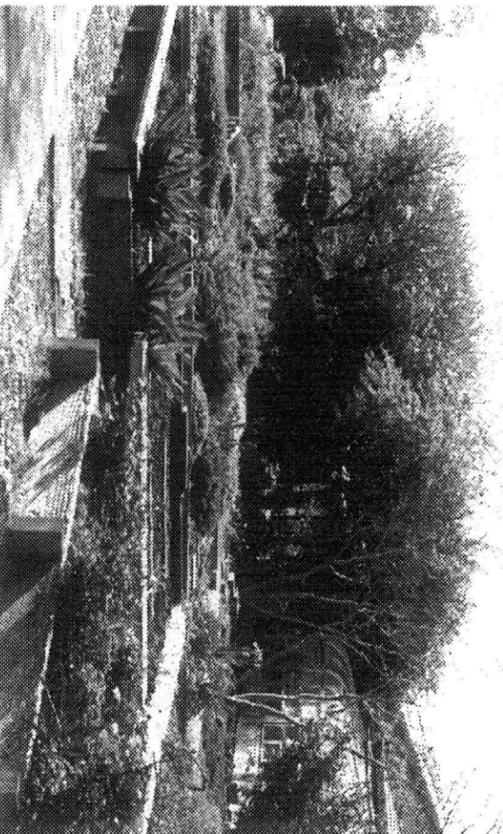
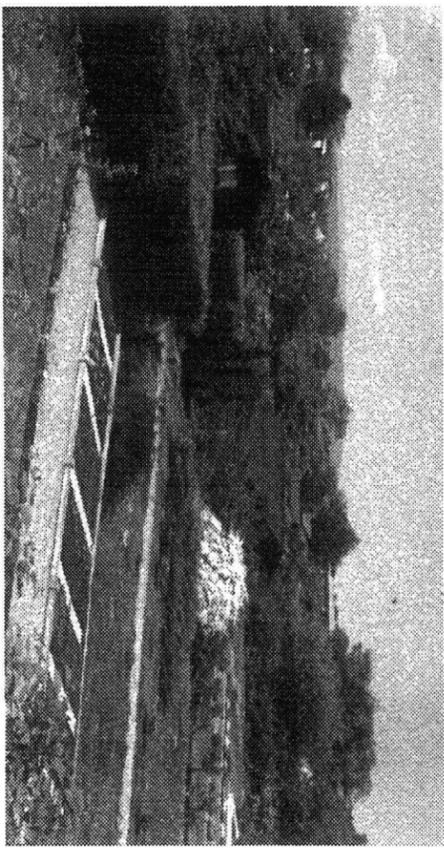
solar energy and alternative waste systems



ecologically rich yards

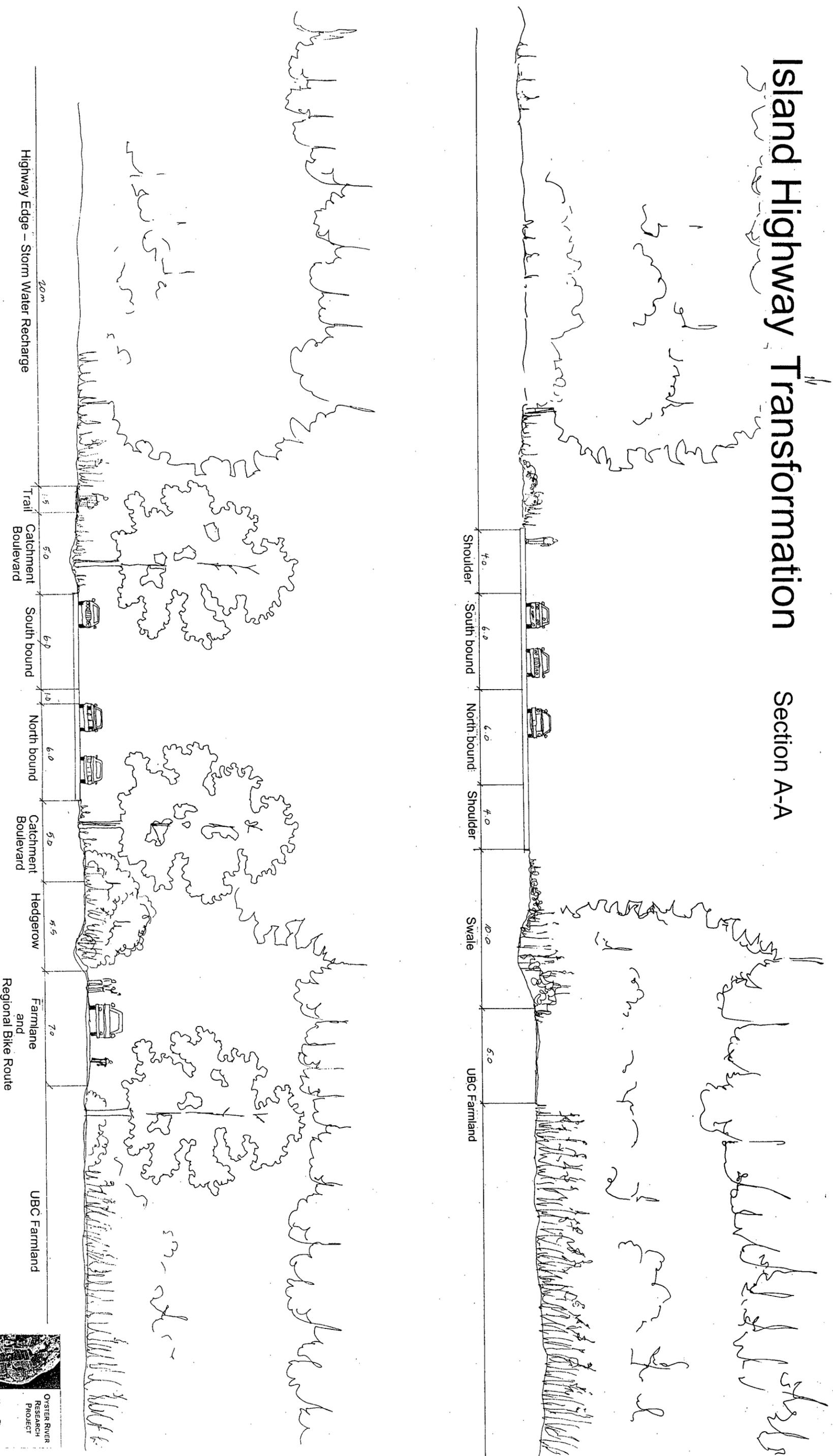


allotment and community gardens



Island Highway Transformation

Section A-A



Oyster River
RESEARCH
PROJECT

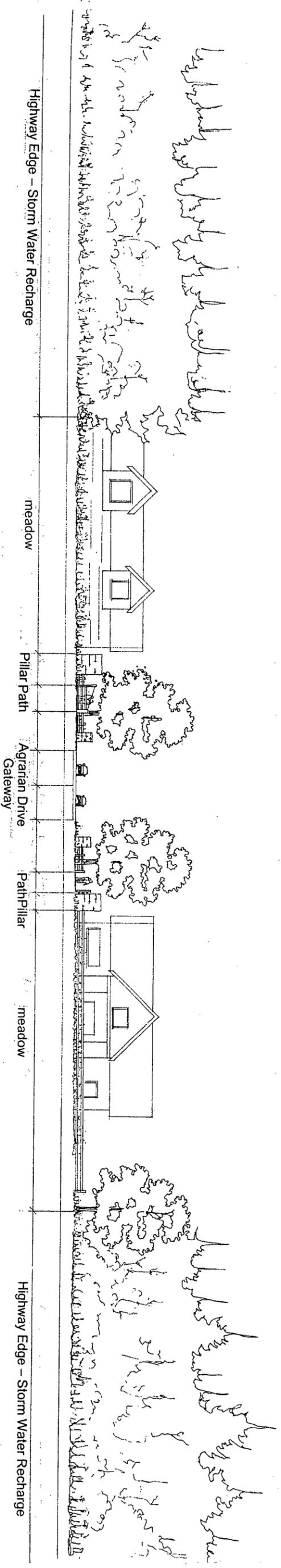
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ARCHITECTURE

Prepare By:
Sara Muir
(BScA9)

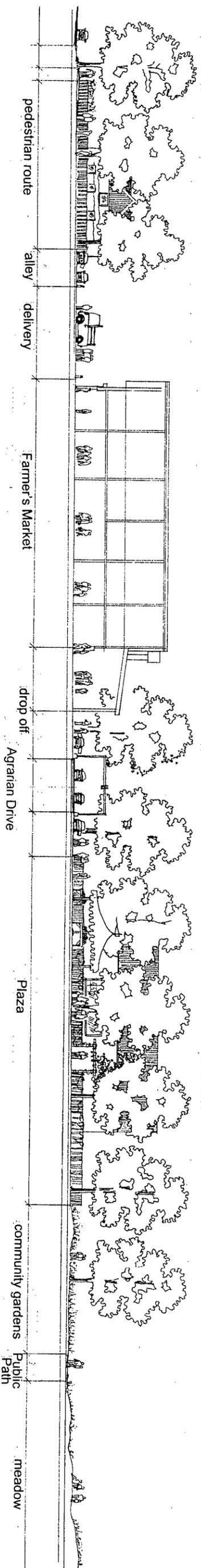
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Gateway to Oyster River Village Section B-B



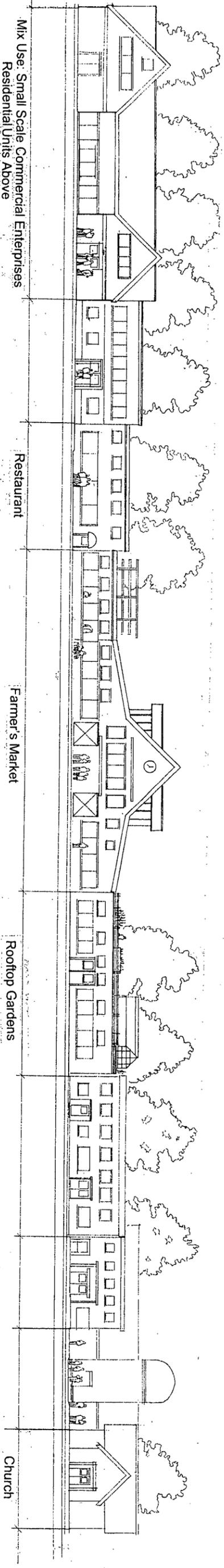
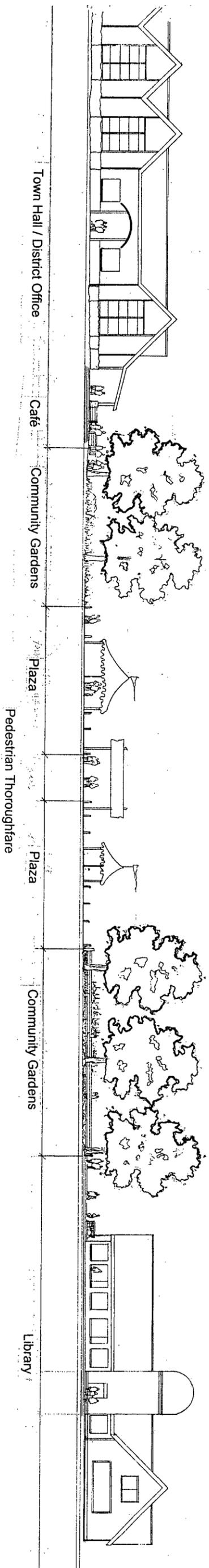
Village Centre / Agrarian Drive Section C-C



	OYSTER RIVER RESEARCH PROJECT
	Master Thesis LANDSCAPE ARCHITECTURE
Prepared By: Sara Muir (BScAg)	Scale: 1:200
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Village Centre

Section D-D



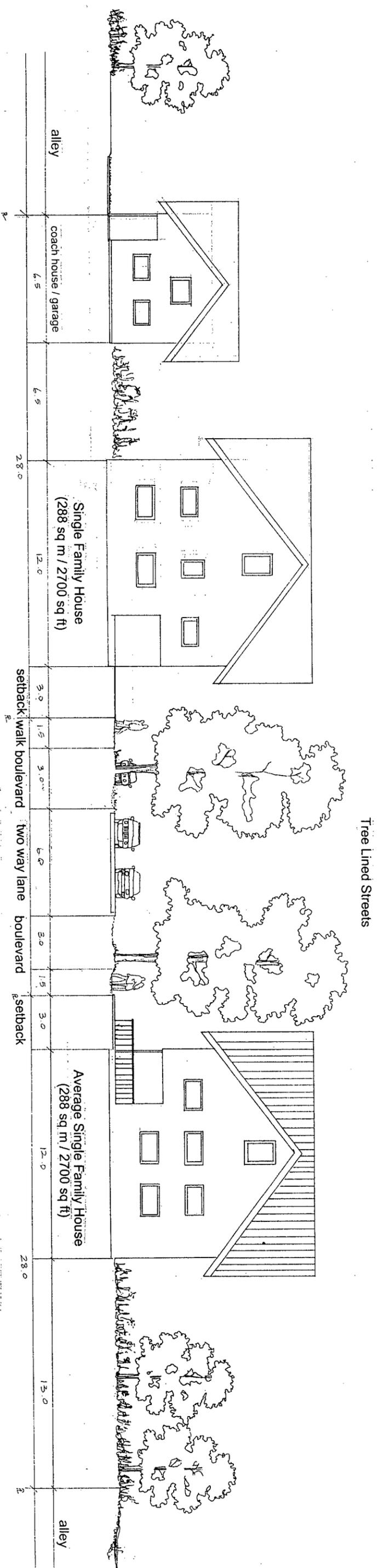
Farmer's Market

Section E-E

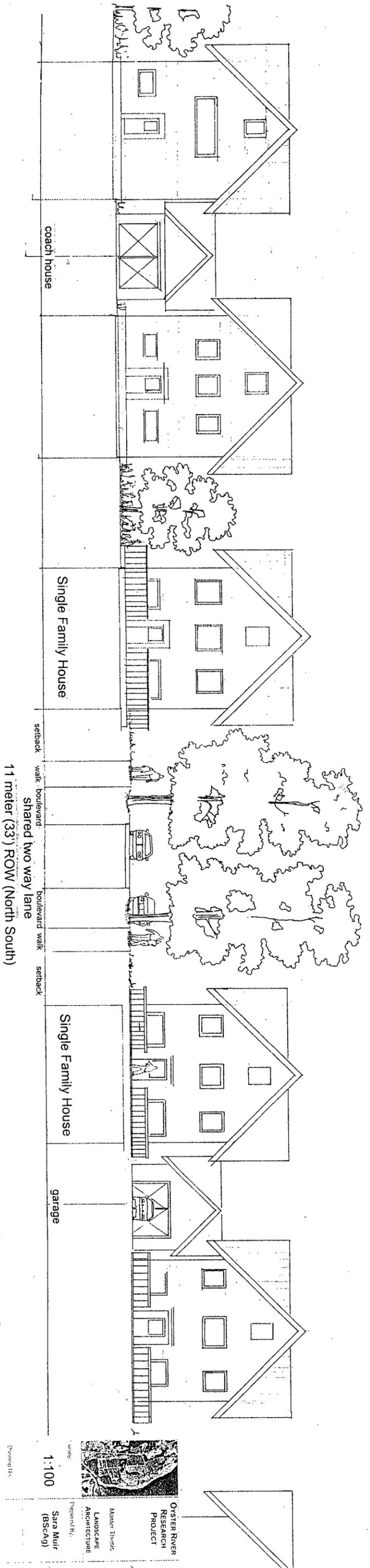


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<p>Scale: 1:200</p>	<p>Prepared By: Sara Muir (BScAg)</p>
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Village Streets & Homes Section F-F



Section G-G



Average Lot Size
(392 sq m / 3700 sq ft - 100 sq m (100 sq ft) garden potential!!!)



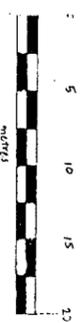
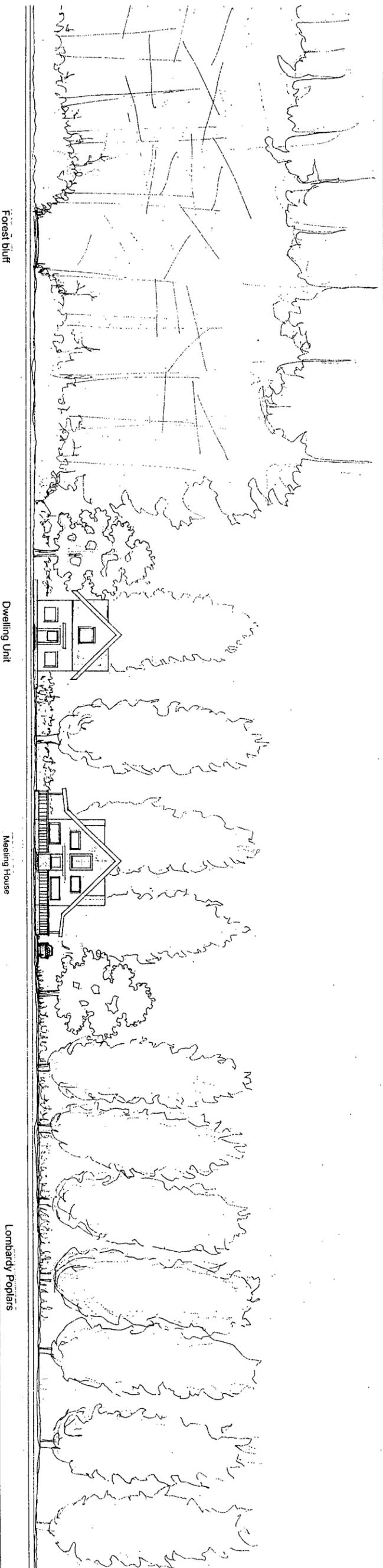
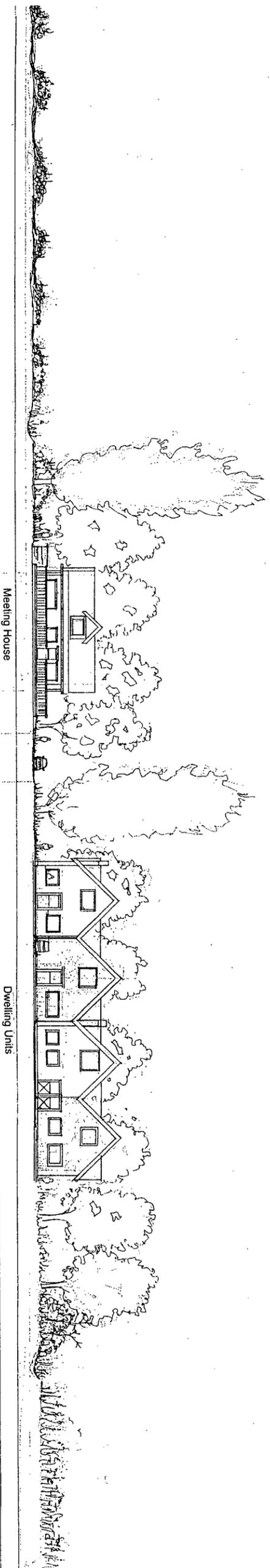
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ENGINEERED BY:
Sara Muir
(BSCoA)

MARKER THINGS
LANDSCAPE
ARCHITECTURE

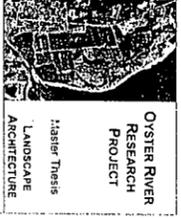
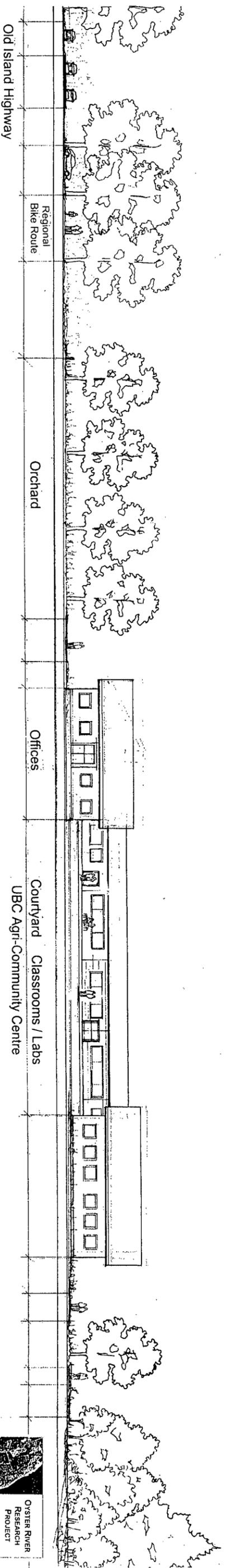
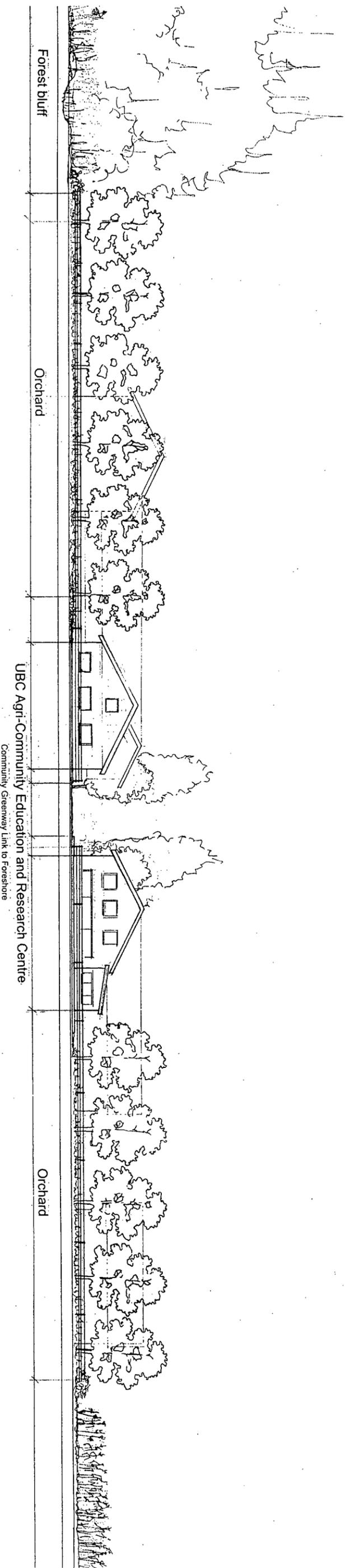
OYSTER RIVER
RESEARCH
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Woodhus Eco-Hamlet Section H-H



	
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<p>Drawn by: Sara Muir (BScAg)</p>	<p>Project: LANDSCAPE ARCHITECTURE</p>
<p>Year: 2013</p>	<p>Project: LANDSCAPE ARCHITECTURE</p>

UBC Agri-Community Centre



OYSTER RIVER
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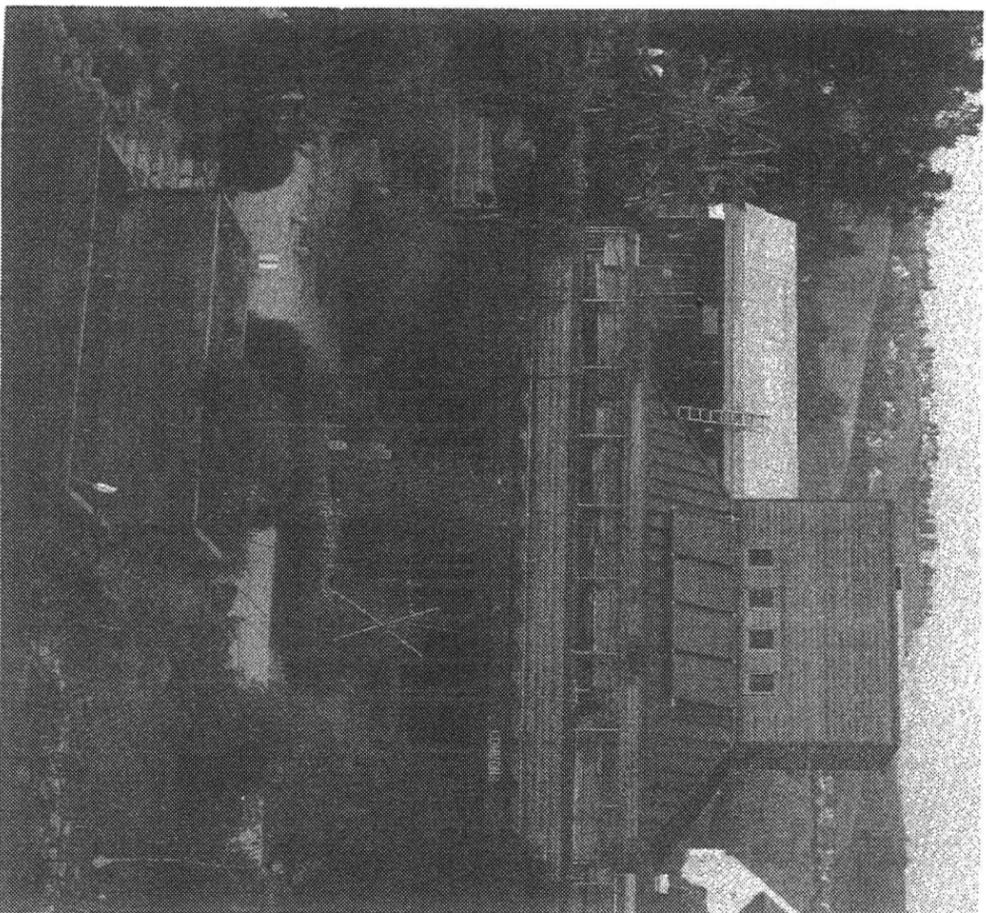
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Prepared By:
Sara Muir
(BScAg)

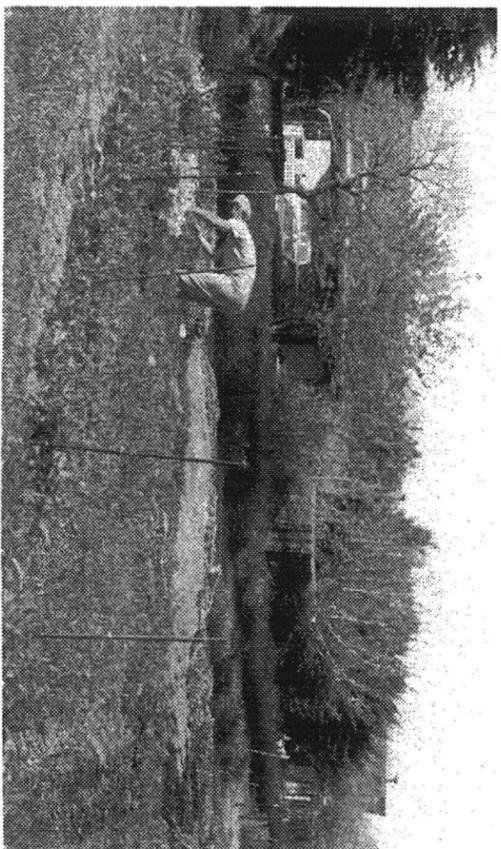
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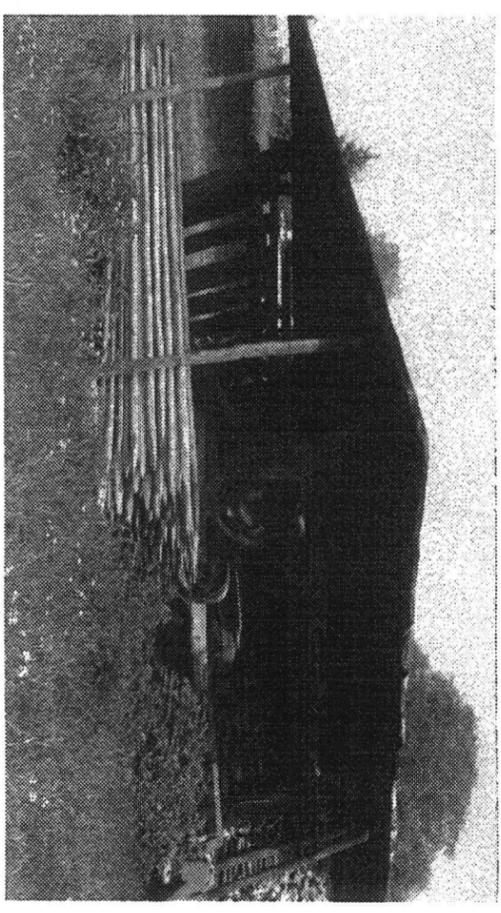
UBC Agri- Community Research and Education



agro-ecology research and education



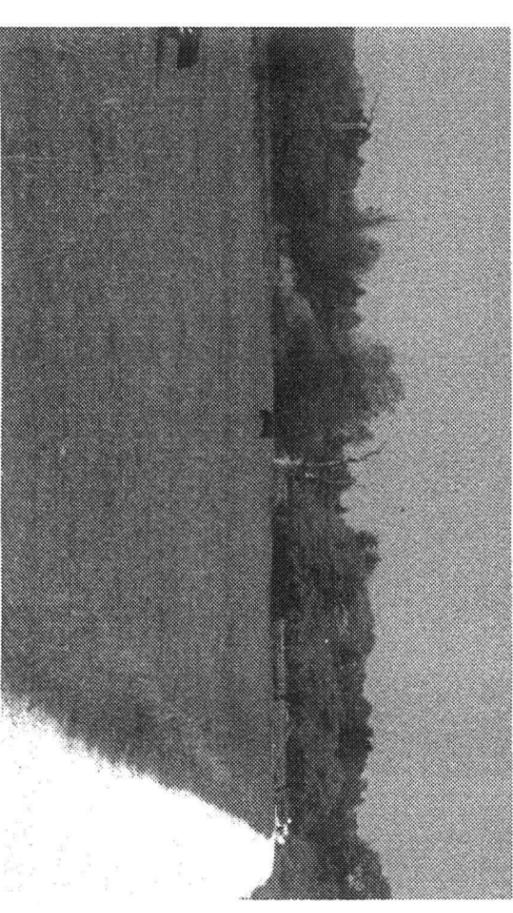
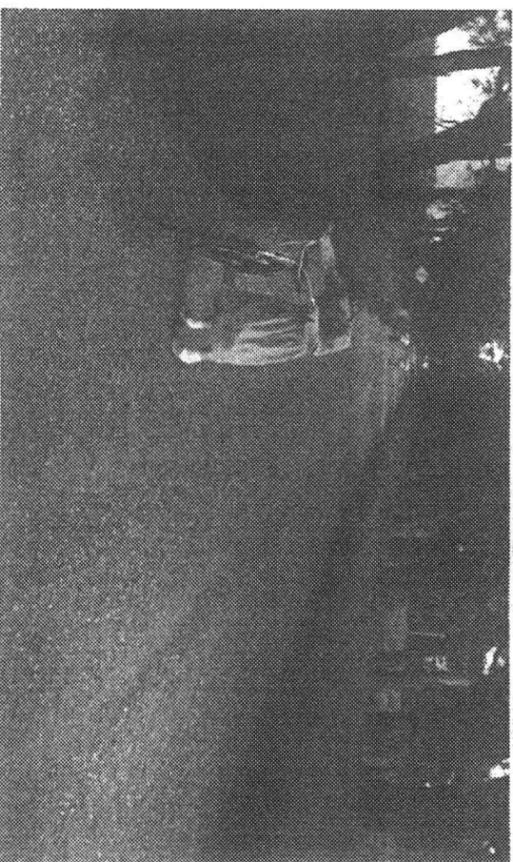
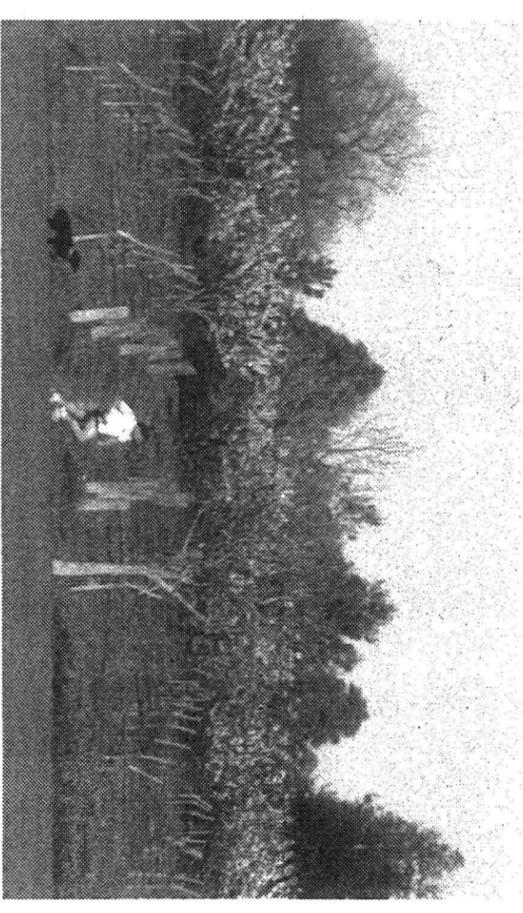
local food production



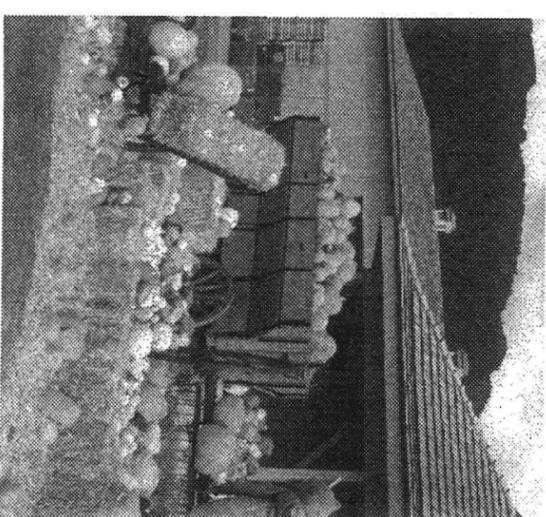
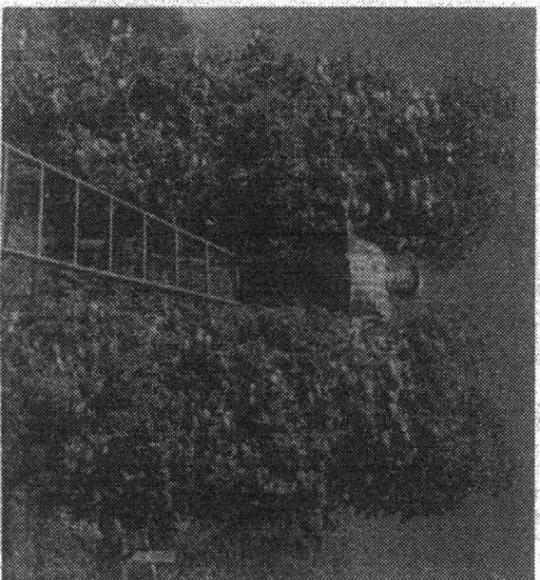
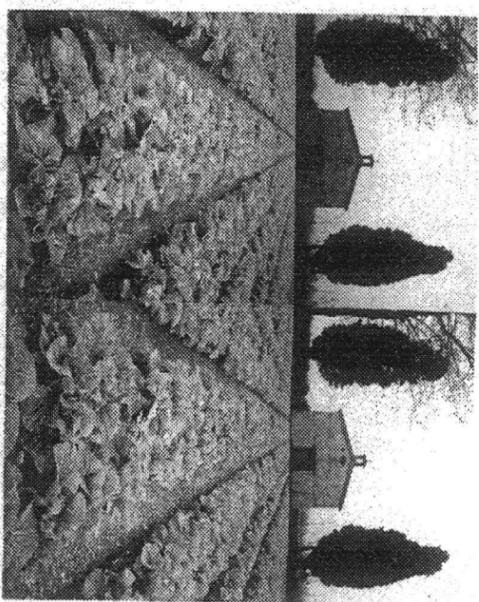
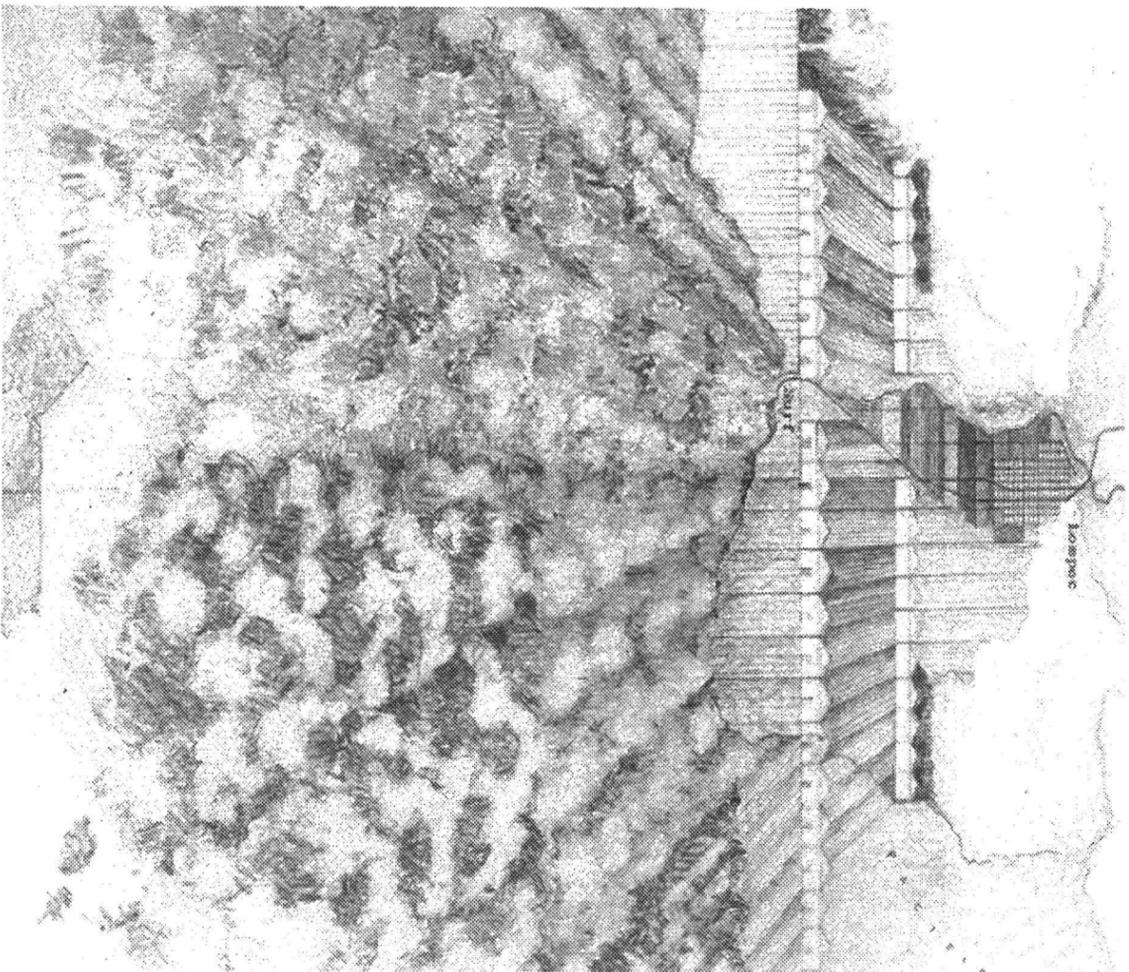
community forestry



regional bike route & pedestrian paths



Celebrating *Agriculture*



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Niels Holbeck. 1998. Manger of UBC Research Farm. Oyster River, BC.

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Lanarc Consultants Ltd. Nanaimo, BC.

Donna Rodman, School of Landscape Architecture, UBC. Vancouver, BC.

Professor Douglas Paterson, School of Landscape Architecture, UBC,
Vancouver BC.

Appendix One:

A Model of the Agricultural Issues Facing British Columbia (as outlined by Agricultural Students of the AgSc 410 Class)

Public Perception

- There is ever increasing rural / urban conflict, as urban centres grow and sprawl and rural communities shrink and diminish.
- The fundamental importance of food production and its relationship to health and nutrition is poorly recognized, and the role of "Agricultural Industry" is poorly perceived.
- There is a general lack of awareness of agriculture and agricultural issues.
- Even amongst local communities which neighbour farms, there still remains a low regard for agriculture production and practice.

Agricultural Education

- There is a lack of Agricultural Education in primary, secondary and the post secondary education system.
- A lack of education leads to poor perception and poor understanding of the importance of Agriculture.
- There is a poor educational link to community - lack of Agricultural outreach programs geared towards the community in the form of Agricultural Education
- There is not enough integration of public education programs with the existing Farm / Farmland Conservation Programs .
- There is a lack of general public education within the community at large; need more programs like DFWT.

Future Generations

- Who wants to farm in the future?
- Land assessment of \$\$\$ value makes cost of start-up too expensive for newcomers.
- Who has and will have the knowledge/education to farm for/in the future?
- The average farm age is close to retirement - who will replace them?
- Family farms have been, and continue to decrease at an extensive rate - what type of farm culture will replace them now and in the future?

Community Issues

- There is a lack of integration of food production with the larger community.
-
- Agricultural open space is appreciated, but generally unrecognized and undervalued as a working landscape. There is still an overall lack of respect for farmland and farming practice.
- There is grand underestimation of the opportunities of linking with community activities- i.e. tourism, demonstration farms of production & processing, etc. as well as integration of schools and community organizations to produce food.
- The linking of food production with unique community enterprises, specialty restaurants, care facilities, food banks, etc is generally lacking in initiatives and creativity as well as support and policy infrastructure.

ALR

- The status of ALR is fragile.
- The "Provincial Interest" of ALR is poorly defined, or not understood, or ultimately disregarded when short term profit is a consideration and opportunity for other land use.
- The physical boundaries of ALR are poorly recognized.
- The meaning and the purpose of the ALR is not understood among the general public.
- The layout or planning of the ALR and/or, the layout of urban development is causing urban encroachment on Agricultural land and issues / conflict related to farm functions (i.e. manure management, farm transportation, spraying, etc.) for farmers and neighbouring local residents.

Land Use

- Urban encroachment is a significant threat to agricultural land use.
- The significant of particular locales of the larger community need to be further identified and fully understood:
- Wetland Habitat
- Oyster River
- First Nations Areas for land claim areas of reservation
- Industrial & Commercial Development
- Residential Development
- The role, potential, and specific land use requirements in terms of planning and design need to be identified for each particular locale, and the compatibility/conflict that these areas (and associated activities) have with Agriculture need be understood.

Land Ownership

- The majority of the present lease tenures in B.C. (1 to 5 year lease agreements) is far too short to promote and sustain a viable agricultural operation.
- The implications of government versus private ownership, in terms of promoting Agriculture, need be understood and researched further.
- Generally, there is a high proportion of foreign ownership of ALR land. This would appear to inflate the speculation of development and thus land prices of ALR and does not harbour an incentive for long term Agricultural practice on the land.
- Should farmers be expected to retain owned land when, currently, profit from land sales for development purposes far exceeds any income they would receive from farming?
- There is high real estate speculation for ALR land in British Columbia. The speculation drives up land value, and thus causes farming to be viewed as a highly insignificant (and labour intensive and toiling) means of obtaining monetary benefit from the land.
- The development of large "mansions" by owners who have bought smaller portions (10 -20 acres) of ALR land, but have no intention of farming it, drives up the land value of ALR land.
- The land assessment authority assesses the land, and places taxes on the land, that by no means benefit nor recognize working farmland reasonably. i.e. the higher education tax farmers pay out
- conservation values farmland plays in the larger community.

Soil

- Presently, soils are prone to leaching, aeration problems, compaction, salinization and effects of run-off.
- Lack of extension services to educate and offer viable solutions to soil issues.
- Manure management.

Wildlife

- Lack of research and support groups to find viable agriculture / wildlife connections, compatibility and benefits.
- Urban encroachment effects not only farmland but also the available land for wildlife habitat.
- Habitat provision is 'nobodies' responsibility - as such it is easy to disregard. As stewards of land, should farmers receive conservation benefits to encourage them to consider wildlife concerns.
- Is there a means of maintaining and enhancing tourism value of wildlife hunting and viewing activities. Can farmers benefit from these activities?

Water

- Is the water quality for drinking and irrigation sufficient? More information regarding this issue is required.
- Is fertilization and chemical 'protectants' a problem regarding the quality of drinking water?
- Do farms rely on private water sources i.e. wells, or do they receive their drinking water from watersheds? Again more regarding water source is required.

Farmer

- "Preserve the farmers, they will preserve the farms." - Surveyed Farmer Delta Agricultural Study (Klohn Leonoff Ltd, et al, 1992)
- Guaranteed economic rewards for farmers are not present.
- The capital or start up fee for farming is too high.
- The investment into quotas for particular farming activities (i.e. Dairy and Poultry) is restrictive.
- The uncertainty the majority of farmer's face in land tenures does not foster a stable foreseeable future for farmers.
- There is a lack of incentive to enter into farming; i.e. poor public perception of farming, little to no public education in agriculture, little (perceived?) economic value/reward associated with farming.
- Labour costs are higher than the economic viability of farming.
- Farmers have poor marketing power.
- There is little to no advertising to the public regarding local, as is 'grown in this community', or 'the farm next door' produce / products.
- Poor organization (presently no) of co-operatives to share some of the capital costs of farming.
- No education to public (especially youngsters) regarding agriculture.

Processing

- Inefficient processing, as individual farmers are responsible for the processing of their own produce.
- Again, there may be a greater opportunity in co-operative processing.
- There is no private investment in processing companies.

Production

- There is weak government assistance for farmers in terms of loans, subsidies etc.; and/or poor distribution of information regarding programs available to benefit farm production.
- Communication and connection to Agriculture Canada - programs and extension services need improving.
- Are farmer's receiving the information / education needed to farm efficiently?
Are farmer's receiving the information / education required to employ sustainable practices in production?

Government / Policy

- The changing nature of government makes long term planning a challenge.
- Agriculture is not a priority, nor is it recognized as one of the provinces truly "renewable resources."
- There are not enough monetary tax incentives to stay in or begin farming. Nor a significant enough tax bracket on viable unfarmed land to avoid foreign ownership and real estate speculation.
- An overlap in government bureaucracy often creates conflict among political initiatives - i.e. local, provincial, federal strategies may conflict; environmental, land assessment, and other policies may conflict with agricultural policy and practice.
- There is a lack of government support for the marketing of B.C. products, locally grown, community products.
- There needs to be a stronger initiative to ensure an adequate variety and amount of product to supply demand, and enough local demand to consume local products - more effective marketing (more marketing boards or quotas - or are there other ways to improve local / community marketability?)
- There is not enough agricultural education in schools.
- There is no such thing as "Free Trade" and there appears to be no benefits for small scale, local farming enterprise from NAFTA.
- Government is short sighted with regards to policy and trade agreements, and ultimately jeopardizes the livelihood of all communities by failing to anticipate future crisis. (i.e. natural disasters, global warming and other phenomena that may result in California's or another areas inability to provide us with food.)
- Government is not attempting to offset any of the ill effects associated with globalization. Government policy and programs appear to decrease self-sufficiency of a region, and increase a region's "ecological footprint."
- "There has been little if any specialized technical guidance on how to plan for agriculture in the face of settlement pressures. (ALC web site document <http://www.landcommission.gov.bc.c>)"
- "Despite local governments having a strong role to play in dealing with land use issues, agriculture has commonly not commanded a prominent position in policy development at the local level." (ALC 1998 web site)
- "Regional Districts and municipalities, with strong local knowledge, are well positioned to make positive contributions to agriculture's future." (ALC 1998 web site)

- An enhancement of local and provincial partnerships will achieve considerable benefits to ensure agriculture's long term health." (ALC 1998 web site)
- Agricultural issues must be brought to the forefront of planning and policy of local land use development. This would most successfully be achieved through a partnership approach among provincial, federal, local municipalities, regional districts and local groups from the community.
- Local government involvement ensures that the concerns of each community are better addressed as agricultural opportunities and issues vary greatly throughout the Province.

Appendix Two: Quotes and Notes – Words of Wisdom which Greatly Influenced this Project.

It is the essence of the economic market that it espouses no particular set of values, no particular social or political normative vision of life, no particular set of societal goals to constrain the opportunistic exploitation of change. The market as a whole does whatever the aggregate of its individuals finds advantageous to do, no more. From the market point of view the future remains completely open. This is in striking contrast to traditional societies which have very powerful concepts of what is acceptable socially and culturally. (Hooker, 1994: p25)

“Soils and arable land is considered to be a form of productive capital with only limited potential for technological substitution. Its unique properties and immeasurable value as an essential component of our global life support system justify the exclusion of adequate stocks of agricultural land from competing land markets. In short a range of consideration and values beyond short-term efficiency bear on critical land use decisions. This is more likely to ensure food security in a world of rapid ecological change and political uncertainty. As a bonus, we may succeed in preserving important elements of rural life and landscape, a significant part of our natural heritage.” Bill Rees

“we won't be able to protect ALR if we can't control urban growth”

-Hugh Kellas

Public needs to be educated about its “romantic notion about farming.”

UBC need to provide research but also must exhibit moral contribution to the community

Issue of making farmland more ecologically responsible

Agriculture can expand its views and the way it treats itself - create valid business opportunities

Issues of relationship of Farm and Communities - Notions of CSA:

Consent

Support

Agriculture

Integration : Farm Folk City Folk

Problems faced are economic:

*How does one make enough to continue to farm when zoning only keeps him poor?
(See Feb issue of Planning Newsletter - APA - Saving Foothills of Denver)*

Question becomes one whole broad issue:

What one can and cannot do on Ag land?

Barn complexes - industrial; greenhouses on soil; Industrialization; Globalization - entire collapse of 4000 acres - since NAFTA larger competitive issue; All these tend to leave farmer poor and land neglected

- Douglas Paterson

"East Coast of Vancouver Island, where population is growing explosively and the resulting urban expansion is conflicting with Agricultural Uses." (Georgia Strait, 1997)

"the only thing that will help is...make farming economically viable." Art Bomke

The exploiter typically serves an institution or organization; the nurturer serves land, household, community, place. The exploiter thinks in terms of character, condition, quality, kind. (Berry, 1977: 7-8 from Hooker 1994: p.12).

For Berry, the roots of this condition are spiritual and cultural, not merely economic. (Hooker 1994: p13)

Berry's idea of a whole, healthy community is, as himself makes clear, derived from Jeffersonian notions of democracy, the idea of robust, independent individuals who from their own farming-based autonomy intelligently and morally cooperate to form an enlightened, caring, democratic community. (Hooker 1994: p14)

Future

What we need is a more sophisticated, but not less penetrating and holistic conception of a viable post-20th century life which provides an appropriate sustainable role for our relationship to our land. The point of discussing Berry is precisely to support this claim because his study shows that, no matter how distant the "country" seems to feel from the city, agriculture and culture are intimately connected. (Hooker, 1994: p17)

Sustainability

A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise. (Leopold, 1968)

Sustainability is a notion connected to the idea of rightness. An extended definition of sustainability taken from *Awakening Earth* by D. Elgin (p.13):

To be sustainable, a civilization must maintain the integrity of the physical, social, and spiritual foundations upon which it is established. To seek only to survive - to do no more than simply exist - is not a sufficient foundation for long-term sustainability. An insight from Simone de Beauvoir clarifies our challenge, "If we do no more than work for a sustainable future, then we are in danger of creating a world in which living is little more than only not dying." To engage our enthusiasm for evolution, we must look beyond sheer survival - we need a compelling sense of purpose and potential for living together as a world civilization.

If industrial societies are to turn away from materialism and commercialism as organizing values, then other values and purposes are needed that are at least as compelling. The survival and integrity of our biosphere, the quality of life for our children

and friends, and the co-evolution of culture and consciousness - these are life purposes that offer a powerful alternative to those of the industrial era.

Sustainable Agriculture

Conventional approach to agriculture is in the macho tradition of Francis Bacon which justifies an emphasis on knowledge and science to deliver a command over nature. As shown in the current state of agriculture world wide this notion, exercised over the last 350 years, has been destructive. A recognition for a kinder, gentler, more nurturing approach is slowly being recognized. The salvation of agriculture, as of all human pursuits, is the relinquishment of power and control in favour of participation, fitting agriculture to the ecological realities of the world and seeking a partnership with nature as between men and women. (Rowe, 1990 pp.182,183)

"If we are to have an accurate picture of the world, even in its present diseased condition, we must interpose between the unused landscape and the misused landscape a landscape that humans have used well. (Berry, 1995 p.72)

Real life consists of the tensions produced by the incompatibility of opposites, each of which is needed, and just as life would be meaningless without death, so agriculture would be meaningless without industry. It remains true, however, that agriculture is primary, whereas industry is secondary, which means that human life can continue without industry, whereas it cannot continue without agriculture. Human life at the level of civilization, however, demands the balance of the two principles, and this balance is ineluctably destroyed when people fail to appreciate the essential difference between agriculture and industry - a difference as great as that between life and death - and attempt to treat agriculture as just another industry. (Schumacher, 1973 p.103,104)

We can say that man's management of the land must be primarily orientated towards three goals - health, beauty and permanence. The fourth goal - the only one accepted by the experts - productivity, will then be attained almost as a by-product. The crude materialist view sees agriculture as 'essentially directed towards food-production'. A wider view sees agriculture as having to fulfill at least three tasks:

1. to keep man in touch with living nature, of which he is and remains a highly vulnerable part;
2. to humanize and ennoble man's wider habitat; and
3. to bring forth the foodstuffs and other materials which are needed for a becoming life." (Schumacher, 1973 p.105)

To those who try to keep the culture in agriculture, to maintain the cultus or care in the people-land relationship, farming is a valued way of life and not just a business. (Rowe, 1990 p. 166)

This of Agri-culture touches on the same notions, Berry, Jeffersonian ideals etc.,

Food Security

By definition it is a system that produces and distributes healthy, nutritious, safe, affordable food in sufficient quantities for the region that it supports. The production and distribution of this food should contribute in a meaningful way to the regional economy.

The extent that a food system is secure depends on the extent that it is sustainable - that is ecologically, socio-culturally and economically sustainable.

Agricultural production technologies have also amplified processes of soil and habitat loss, of rural community transformation and much more. It must be the design of the entire system that now concerns us if we are to have intelligent technologies, agricultural and institutional technologies among them. (Hooker, 1994: p28)

Evolution of new social structure and awareness of produce / consume at local level

Well structured Ag landscape in lower Mainland: Health Serene Beautiful

Equality of Life Essential

Environment very valuable

When population exceeds 1.5 million there exists an entirely new set of problems

Farming has a relationship, positive, to the quality of life

Maybe incorporate a basic tax to protect investment of Ag land to help the farming community

Broad Framework - discuss some of the issues above

If current world population trends, global warming effects, the decline in energy resources such as fossil fuels continues, and the precarious state of our environment and greater ecology remains, the production of food will become an ever increasingly difficult venture. Indeed, the degradation of land due to urbanization, soil erosion, chemicalization will only escalate with current trends. Ultimately, today's economic, social and ecological conflict of current agricultural practice will seem insignificant indeed, to the economic, social and ecological crisis that may haunt us tomorrow.

Those who choose to farm in the future will inherit a less biologically resilient and productive land base, and an unpredictable socio-cultural and natural environment. Global warming and other natural stresses have the potential to alter the arable and base considerably; political capriciousness, an increase in national debt and trade deficits, and a precedent in political decline in issues such as agriculture are the realities future farmers face. Along, of course, with a growing urban population (with a generally ill recognition and awareness of food production) who expect cheap and abundant food as a societal right. (Orr 1992: pp 178-179)

The cost of this corporate totalitarianism in energy, land, and social disruption will be enormous. It will lead to the exhaustion of farmland and farm culture. Husbandry will become an extractive industry; because maintenance will entirely give way to production, the fertility of the soil will become a limited, nonrenewable resource like coal or oil. (Berry, 1977: 10 in Hooker p.12)

Like the current oil glut despite the declining world reserves, this paradoxical coincidence only testifies to the well-known deficiencies of the market, for example, its short-term, unecological or commodity-fragmented outlook. (Hooker 1994: p.13)

The net result is the steady industrialization of agriculture with all of its attendant consequences. (Only in western Europe have these industrialization trends been partially resisted, and only there at the enormous expense of billions of dollars in farm subsidies and international "war" in subsidized farm products.) (Hooker 1994: p13)

To treat every field, or every part of every field with the same consideration is not farming but industry. As knowledge (hence use) is generalized, essential values are destroyed. As the householder evolves into a consumer, the farm evolves into a factory - with results that are potentially calamitous for both (Berry, 1977: 30-31 from Hooker, 1994: p16)

Berry himself advocates, as might be expected, a rejection of this process of industrialization of agriculture. He wants a return to more "organic" farming methods planned on a sustainable basis. In this he can be recognized as an ally of the contemporary Green movements. In the same spirit he is a clear advocate of the "small is beautiful" philosophy and argues for a return to the small farming communities with their intimate knowledge of their land and care for one another. (Hooker, 1994: p16)

The transformation of our current cultural situation to the type of communities as outlined by Berry would require reversing a migration from countryside to city which has been going on for more than a century and has still more complex causes than even Berry considers (e.g., wealth creation, variety and anonymity of cities). Reversing this process is not, perhaps, impossible, but it would not be easy - it would require modifying a core dynamic of economic markets (see action) with wholesale urban and agricultural redesign - and would come at a substantial cost (as is demonstrated by the current size of the European Economic Community agricultural subsidy for merely delaying the process). Moreover, people may often value family farms more as romantic cultural idealizations than for their agricultural reality; they often have not been the idyllic, environmentally-enlightened places urban folk would like to imagine. (Hooker, 1994: p16)

In short, if we are to properly understand the role of values in relation to agriculture then two things must happen: (1) We must see agriculture as a manifestation in microcosm of the values which drive design of the whole of our lives, agriculture as culture. (2) Since values are manifest as systems designs, we must develop an adequate systems conception of agriculture so as to understand its values as the designs of that system. (Hooker, 1994: p23)

Berry senses the depth of the change process in our cultural design but cannot conceptualize it any more deeply than some kind of moral failing. But change is buried far more deeply in the systems design of western societies than that. Any analysis which does not understand this will not be able to meet the challenge of the agricultural agenda which Berry himself promotes. (Hooker, 1994: p29)

There are two other lessons of this kind which I believe it is important to understand as the proper context for focusing on our current professional and policy challenges. The

first of these concerns the transformation of the planet's dynamic systems which we are currently undergoing and the challenges this poses. The second lesson - more subtle and less obvious - concerns the profound transformation in our relationship to the future, and hence in our policy making and professional tasks. (Hooker, 1994: p29)

What is unique in our time is the planetary scale, the rapid time scale, and most importantly, the organizational depth of the changes involved. (Hooker, 1994: p31)

With these new technological and institutional capacities, we are transforming and often eliminating, human cultures planet-wide at an unprecedented rate. (Hooker, 1994: p32)

the objection I note explicitly here is that this conception of science is made obsolete by our own scientific and economic development, it belongs to a condition of little access to energy and information when our basic option was to attempt to observe and predict a nature that ran its course independently of us - this no longer is the case today. (Hooker, 1994: p34)

and indeed, if the public agenda has little recognition of the complexity involved in receiving nutritional requirements now,

Quotes: form Georgia Strait Article

"we need an apprenticeship program" Lach

"need for "intergenerational stewardship of farmland" "we need an apprenticeship program. There's work that needs to be done there." Zinhelt MoAF

abstract : *All living creatures and communities are species of partially self organizing complex adaptive systems. This is increasingly recognized for agricultural systems. In these systems values are expressed as design features which are factors in their dynamics and outputs. The whole planet is currently being transformed in its systems design and dynamics, including agriculture; at the same time room to manoeuvre, while preserving resiliency, is declining in important respects. This paper offers a characterization of the role of values in the systems characterization of agriculture, against a background analysis of character implications of the systems redesign process now in train, especially including knowledge and policy making processes and concepts such as conservation and sustainability. It concludes by proposing dynamic system values, professional responsibilities and ethics, and of agricultural policy.*

(Hooker 1994: p1)

An agricultural system is human artifact, that is, art-in-fact. It is the realization of human value judgments in the design facts of the agricultural system. Like the transport system, the design of our agricultural has arisen from a myriad of human values, including various cultural and economic values of foodstuffs; the various ethical and economic values of animal lives, including quality of life; social and cultural values

attached to natural and artificial ecosystems, and to various rural lifestyles... (Hooker 1994: p.5)

Hooker (1994:p.11) indicates that agriculture is a subsystem of a larger whole. And, that the design of the Agricultural system must not only reflect the "full plenum of societal values" but also interact successfully, effectively with the design of the larger system of which Agriculture is a part of so that the importance of its design value is ramified throughout society.

Understanding the "larger whole" of our society and the "full plenum of societal values" leads us to further explore the meaning of culture. In *Notes Towards the Definition of ...once we do so we understand that the manifestation of values in factual agricultural systems designs is the very root and foundation of understanding agricultural systems.* (Hooker 1994: p.5)

Agricultural professionals are the designing supporters of designed artifacts, of art-in-facts. Those designs are nothing less than the cradle of human civilization. The values realized in those designs are at the foundation of everything that we hold valuable in civilized human life. And those designs must be systems designs. (Hooker 1994: p.6)

We are enjoined to think through the entire structure of a meaningful life in all its dimensions and within that structure to find a proper and penetrating place for our relationship with natural ecosystems, a place that recognizes the roots of our culture in our agriculture taken to its broadest sense. (Hooker, 1994: p17)

And Hill argues that only when the redesign of agriculture is seen as an integral part of thorough psycho-social healing process for humanity as a whole, a redesign of self with system. Will we be able to envision the required alternative holistic "deep ecology" designs. (Hooker, 1994: p21)

The future can no longer be regarded as a natural object, a fact already there or objectively determined by present trends. Rather, it must be chosen. Artifacts are the realization of human value judgements in facts, in the concrete design of our world. Artifacts are experiments first with what is possible and then with what is preferable. They are designs, chosen from among possible designs, because of the values they realize in the designs. (Hooker, 1994: p34)

The whole world is shifting form reacting to what has happened, to designing what will happen, using knowledge and technology to design, and using knowledge and to design the knowledge designing processes. For the first time in human history we are designing the designers. (Hooker, 1994: p35)

All these transformations point, I suggest to the primacy of design. As our cognitive understandings of our selves and our environment increases in intensity, scale, and complexity, it becomes increasingly urgent that we understand the designs of the complex systems which we are and which we live, so that our actions may be appropriately related to the dynamics of those systems. (Hooker, 1994: p35) Hooker

But once we have a theoretical representation of the possibilities, then the problem of the future becomes: which one of these possibilities shall we make actual? In other words, the future must be designed. We anticipate the future and shape it by design. (Hooker, 1994: p37) Hooker

Everywhere the future belongs to those who have been able to grasp the shift from the past (observation, reaction) to the future (possibility and design). (Hooker, 1994: p37) Hooker

“...the best farming requires a farmer - a husbandman, a nurturer - not a technician or businessman. A technician or a businessman, given the necessary abilities and ambitions, can be made in a little while, by training. A good farmer, on the other hand, is a cultural product; he is made by a sort of training, certainly, in what his time imposes or demands, but he is also made by generations of experience. This essential experience can only be accumulated, tested, preserved, handed down in settled households, friendships, and communities that are deliberately and carefully native to their own ground, in which the past has prepared the present and the present safeguards the future.” P.45 Berry, 1977

The concentration of agriculture into larger and larger holdings and fewer and fewer hands...is thus a matter of complex significance, and its significance cannot be disentangled from its cultural significance.” P.45 Berry, 197?

“The people and their work and their country are members of each other and of the culture. If a culture is to hope for any conceivable longevity. Then the relationships within it must, in recognition of their interdependence, be predominantly cooperative rather than competitive. A people cannot live long at each other's expense or at the expense to their cultural birthright - just as an agriculture cannot live long at the expense of its soil or its workforce, and just as in a natural system the competitions among species must be limited if all are to survive.” P.47 Berry, 197?

“In any of these systems, cultural or agricultural or natural, when a species or group exceeds the principle of usufruct (literally, the “use of the fruit”), it puts itself in danger. Then, to use an economic metaphor. It is living off the principal rather than the interest. It has broken out of the system of nurture and has become exploitive; it is destroying what it depends upon to live. In all of these systems a fundamental principle must be the protection of the source: the seed, the food species, the soil, the breeding stock. The old and the wise, the keepers of memories, the records.” Berry, 197

“And just as competition must be strictly curbed within these systems, it must be strictly curbed among them. An agriculture cannot survive only at the expense of the mutual systems that support it and that provide it with models. A culture cannot survive long at the expense either of its agricultural or of its natural sources. To live at the expense of the source of life is obviously suicidal. Though we have no choice but to live at the expense of other life, it is necessary to recognize the limits and dangers involved: past a certain point in a unified system, “other life” is our own.” P.47 Berry, 197

“The definitive relationships in the universe are this not competitive but interdependent. And from a human point of view they are analogical. We can build one system only

within another. We can have agriculture only within nature, and culture only within agriculture. At certain critical points these systems have to conform with one another or destroy one another." P.47 (Berry, 197)

"To talk about the future is useful only if it leads to action now." (Schumacher, 19)
"...we must begin to see the possibility of evolving a new lifestyle, with new methods of production and new patterns of consumption: a lifestyle designed for permanence. To give only three preliminary examples: in agriculture and horticulture we can interest ourselves in the perfection of production methods which are biologically sound, build up soil fertility, and produce health beauty and permanence..." p.21 (Schumacher, 19)

"While many theoreticians are still engaging in the idolatry of the large size with practical people in the actual world there is a tremendous longing and striving to profit, if at all possible, from the convenience, humanity and manageability of smallness."
(Schumacher, 197 ; p.65)

"There is no such thing as a viability of states or of nations, there is only a problem of viability of people: you do not make non-viable people viable by putting large numbers of them into one huge community, and you do not make viable people non viable by splitting a large community up into a number of smaller, more intimate, more coherent and more manageable groups." (Schumacher, 1973 ;p.72)

"A most important problem of the second half of the twentieth century is the geographical distribution of population, the question of "regionalism." But, regionalism, not in the sense of combining a lot of states into free-trade systems, but in the opposite sense of developing all the regions within each country." (Schumacher, 1973;p. 73)

"The decline in the capacity for aesthetic appreciation is [another] factor working against ecological literacy.. We have become comfortably with all kinds of ugliness and seem incapable effective protest against its purveyors; urban developers, business men, government officials, television objectives, timber and mining companies, utilities, and advertisers. Rene Dubois one stated that our greatest disservice to our children was to give them the belief that ugliness was somehow normal. But disordered landscapes are not just an aesthetic problem. Ugliness signifies a more fundamental disharmony between people and the land. Ugliness is I think the surest sign of disease, or what is know being called "unsustainability." Show me hamburger stands, neon, tacky tacky strips leading toward every city in America, and the shopping malls, and I'll show you devastated rain forests, a decaying countryside, a politically dependant population, and toxic waste dumps. It is all of a fabric."

(Orr, 1990; p)

*"In a very real sense, therefore, we can say that education is the most vital of all resources." (Schumacher, 1973; p.79)

Wendell Berry *The Unsettling of America* - 1977 Chapters 1-4

*What these meant were praising - what such men have been praising for so long that the praise can be uttered without thought - is a disaster that is both agricultural and cultural: the generalization between people and the land. That one American farmer can now feed himself and fifty six other people may be within a narrow view of the specialist a triumph of technology; by no stretch of reason can it be considered a triumph of agriculture or of culture. It has been made possible by the substitution of energy for knowledge, of methodology for care, of technology for morality. This "accomplishment" is not primarily the work of farmer's - who have been by and large its victims - but of a collaboration of corporations, university specialists, and government agencies. It is therefore an agricultural development not motivated by agricultural aims or disciplines, but by the ambitions of merchants, industrialists, bureaucrats, and academic careerists." (Berry, 1977; p. 33)

*Mine:

The focus on business has forced small-scale farms to either "get big or get out." And praise lately had been given to the current agri-business farmers. They are as acute in business sense as are bankers. Yet, what has come of their agri-cultural sense - their land ethic and their knowledge of farming? Are such qualities considered, as of late, important or significant in the overall practice of industrial-agriculture? Such attitude towards the business side of agriculture has developed to the demise of the land ecologically, and the cultural significance of the practice of farming.

*Agricultural success must be measured not by "agri-dollars" but by the fertility and health of the soil, and the health, wisdom, thrift, and stewardship of the farming community. (Berry, 1977; p.34)

*"[America] applauds the most degrading, dangerous, costly, and socially disruptive 'achievements' of [American] agriculture: (1) economies of size; which means the gathering of farmland into fewer and fewer people - not farmer's necessarily but agri-business elite - and the consequent dispossession of millions of small farmers and farm families; (2) the specialization which means the abandonment of the ancient, proven principle of agricultural diversity - agricultural stability through diversity - with its attendant principles of mixed husbandry of plants and animals and crop rotation. It is now, for the first time, deemed provident and wise to put all the eggs in one basket." (Berry, 1977; p36)

"Natural Capital assists in the understanding of sustainability. Natural capital consists of three kinds of renewable resources:

1. Non-renewable resources
2. The finite capacity of natural systems to produce renewable resource (one example being food crops) and
3. The capacity of natural systems to absorb pollutants arising from human actions without side effects which imply heavy costs passed on to future."

Currently the "money economy" is the current gauge of success. Yet, Professor Bill Rees argues the agricultural land must be considered from an ecological economic perspective. In the current economic agenda, Rees states that "In the minds of many, economic rationality would permit our best agricultural land to be converted to almost any more productive use until food scarcity makes farming more productive." In order to reconsider and re-evaluate the true value of agriculture and resources, a form of

"natural capital" investment must be considered. Natural capital would provide a better means of assessing the "real" value of biophysical necessities and life support systems essential in maintaining our physical social and ecological environment, rather than providing a dollar value to essential resources in order to support a futile economic market system.

Appendix : Vegetation Survey of Research 'Lower' Farm, Oyster River
(from School of Landscape Architecture, 1997)

Appendix : Bird Habitat Data
(from School of Landscape Architecture, 1997)

Appendix : List of Maps

1. **Aerial Photograph** - Lower and Upper portions of the UBC Oyster River Research Farm in context (1975).
2. **Aerial Photograph** - Lower Portion of the Farm. Note: campgrounds and marinas both North and South of the Farm; the Oyster River Regional Park at the southern edge of the Farm; the old island Highway and nearby residential community west of the farm.
3. **Aerial Photo** - Upper Farm, south of the Oyster. The Upper Farm is predominantly forested with some areas used for grazing and corn silage production.
4. **Flood Plain Data** - the majority of the Lower Farms lies within the Flood Plain (both 20 year and 200 year flood) of the Oyster River.
5. **Flood Plain Data** - the Upper Farm
6. **Legal Map** - showing legal lots of Lower and Upper Farm
7. Map showing **UBC Farmland**, the large scale private land holdings of the **Forest Company, Raven Forest Products**, and the surrounding areas of **ALR land**.

Appendix Three:
Community Supported Agriculture: What is CSA and How Does it Work

Information from UMass Extension:

What is Community Supported Agriculture and How Does It Work?

Food is a basic human need. Yet for most of us in the U.S., it is merely an inexpensive commodity that we take for granted. Issues surrounding how, where, or by whom it is grown are not generally the topic of conversation around the dinner table. Considering the current situation in agriculture, perhaps they should be. Food in the U.S. travels an average of 1,300 miles from the farm to the market shelf. Almost every state in the U.S. buys 85-90% of its food from some place else. In Massachusetts, for example, this food import imbalance translates to a \$4 billion leak in the state economy on an annual basis. UMass studies have determined that Massachusetts could produce closer to 35% of its food supply. This 20% increase would contribute \$1 billion annually to the Commonwealth.



Increased local food production would add considerable food dollars to the economy of many other states. Meanwhile, the nation's best farm land is being lost to commercial and residential development at an accelerating rate. At the same time, the retirement of older farmers, increasing land and production costs, low food prices, competing land uses, the lack of incentive for young people to enter farming, and the fundamental restructuring of the national and global economy all combine to make farming and local food production in the U.S. an increasingly difficult task. Community Supported Agriculture represents a viable alternative to the prevailing situation and the long-distance relationship most of us have with the food we eat.

What Is Community Supported Agriculture (CSA)?

CSA reflects an innovative and resourceful strategy to connect local farmers with local consumers; develop a regional food supply and strong local economy; maintain a sense of community; encourage land stewardship; and honor the knowledge and experience of growers and producers working with small to medium farms. CSA is a unique model of local agriculture whose roots reach back 30 years to Japan where a group of women concerned about the increase in food imports and the corresponding decrease in the farming population initiated a direct growing and purchasing relationship between their group and local farms. This arrangement, called "teikei" in Japanese, translates to "putting the farmers' face on food." This concept traveled to Europe and was adapted to the U.S. and given the name "Community Supported Agriculture" at Indian Line Farm, Massachusetts, in 1985. There are nearly 600 CSA in the U.S. and Canada as of Summer 1996.

CSA is a partnership of mutual commitment between a farm and a community of supporters which provides a direct link between the production and consumption of food. Supporters cover a farm's yearly operating budget by purchasing a share of the season's harvest. CSA members make a commitment to support the farm throughout the season, and assume the costs, risks and bounty of growing food along with the farmer or grower. Members help pay for seeds, fertilizer, water, equipment maintenance, labor, etc. In return, the farm provides, to the best of its ability, a healthy

supply of seasonal fresh produce throughout the growing season. Becoming a member creates a responsible relationship between people and the food they eat, the land on which it is grown and those who grow it.

This mutually supportive relationship between local farmers, growers and community members helps create an economically stable farm operation in which members are assured the highest quality produce, often at below retail prices. In return, farmers and growers are guaranteed a reliable market for a diverse selection of crops.

How Does CSA Work?

Money, Members and Management

A farmer or grower, often with the assistance of a *core group*, draws up a budget reflecting the production costs for the year. This includes all salaries, distribution costs, investments for seeds and tools, land payments, machinery maintenance, etc. The budget is then divided by the number of people for which the farm will provide and this determines the cost of each *share* of the harvest. One share is usually designed to provide the weekly vegetable needs for a family of four. Flowers, fruit, meat, honey, eggs and dairy products are also available through some CSA.

Community members sign up and purchase their shares, either in one lump sum before the seeds are sown in early spring, or in several installments through-out the growing season. Production expenses are thereby guaranteed and the farmer or grower starts receiving income as soon as work begins.

In return for their investment, CSA members receive a bag of fresh, locally-grown, typically organic produce once a week from late spring through early fall, and occasionally throughout the winter in northern climates and year-round in milder zones. Members prefer a wide variety of vegetables and herbs, which encourages integrated cropping and companion planting. These practices help reduce risk factors and give multiple benefits to the soil. Crops are planted in succession in order to provide a continuous weekly supply of mixed vegetables. As crops rotate throughout the season, weekly shares vary by size and types of produce, reflecting local growing seasons and conditions.

- CSA vary considerably as they are based on farm or garden location, agricultural practices, and specific farm and community goals and needs. Memberships are known to include a variety of community members including low-income families, homeless people, senior citizens, and differently-abled individuals. If provided, an extra fee typically is charged for home delivery. Most CSA invite members to visit the farm and welcome volunteer assistance. *Working shares* are an option in some cases, whereby a member commits to three or four hours a week to help the farm in exchange for a discount on membership cost.
- Apprenticeships are growing in popularity on many CSA. For some farms they are an integral component of a successful operation. Apprenticeships offer valuable hands-on education.
- Property arrangements tend to be quite flexible. Beyond private ownership, there is leasing of land with lease fees factored in as a regular budget item. CSA is also an excellent opportunity for holding land in some form of trust arrangement.
- Every CSA strives over time for a truly sustainable operation, both economically and environmentally. Many try to develop to their highest potential by expanding to provide additional food items such as honey, fruit, meats, eggs, etc. Networks of CSA have been

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forming to develop associative economies by growing and providing a greater range of products in a cooperative fashion.

- Some CSA provide produce for local restaurants, roadside stands or farmers' markets while building farm membership, or in many cases, in addition to it.

Distribution and Decision-Making

Distribution styles also vary. Once the day's produce is harvested, the entire amount is weighed and the number of pounds or items (e.g. heads of lettuce, ears of corn) to be received by each share is determined. Some CSA have members come to the farm and weigh out their own share, leave members behind any items they don't want at a surplus table and possibly find something there they could use. Other farms have a distribution crew to weigh items and pack shares to be picked up by members at the farm or at distribution points.

Several advantages to the direct marketing approach of CSA, in addition to shared risk and pre-payment of farm costs, are the minimal loss and waste of harvested farm produce, little or reduced need for long-term storage, and a willingness by members to accept produce with natural cosmetic imperfections.

A *core group* made up of the farmers or growers, distributors and other key administrators, and several CSA members are often the decision-making body for CSA that determines short and long-range goals, prepares the budget, conducts publicity and outreach, organizes events, etc. Annual meetings, a member newsletter, and occasional surveys are some basic means of communication between the farm and its members.

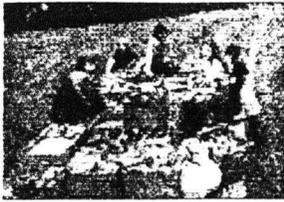
Why Is Community Supported Agriculture Important?

- CSA's direct marketing gives farmers and growers the fairest return on their products.
- CSA keeps food dollars in the local community and contributes to the maintenance and establishment of regional food production.
- CSA encourages communication and cooperation among farmers.
- With a "guaranteed market" for their produce, farmers can invest their time in doing the best job they can rather than looking for buyers.
- CSA supports the biodiversity of a given area and the diversity of agriculture through the preservation of small farms producing a wide variety of crops.
- CSA creates opportunity for dialogue between farmers and consumers.
- CSA creates a sense of social responsibility and stewardship of local land.
- CSA puts "the farmers' face on food" and increases understanding of how, where, and by whom our food is grown.

Special thanks to the contributors to this description of CSA: Robyn Van En, CSA of North America

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(CSANA); Liz Manes, Colorado State University Cooperative Extension, and Cathy Roth, UMass Extension Agroecology Program.



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