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# **the edge: a floating neighborhood**

**an exploration into the phenomena of float home living**

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August 1998

**DEPARTMENT OF LANDSCAPE ARCHITECTURE**

**UNIVERSITY OF MANITOBA  
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THE EDGE: A FLOATING NEIGHBOURHOOD

BY

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A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University

of Manitoba in partial fulfillment of the requirements of the degree

of

MASTER OF LANDSCAPE ARCHITECTURE

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## **abstract**

The following study is an exploration into the nature of float home living as a cultural phenomena which is regaining popularity on the west coast of British Columbia, Canada. The main objective of this study is to identify the environmental and cultural attractions that inspire people to choose float home living. The study is based on original research in the form of a resident questionnaire, as well as published literature on the subject of floating lifestyles and preferences. The study of a floating neighborhood presents an opportunity to explore a specialized segment of the population and its unique combination of landscape/seascape adaptation in a non traditional residential dwelling type.

The study reveals a complex social and cultural system that is closely linked to its geographic location and natural setting. Place theory is researched and presented as it contributes to a better understanding of the interrelated aspects of identity, community attachment, culture, history and natural landscape. The findings of this study are used to inform a design for a floating neighborhood that is better linked with the surrounding community, than is evident thus far. The upland constitutes an important link for the floating neighborhood as well as for the preservation of the shoreline ecology. The author is optimistic that with proper planning and design consideration, negative stereotypes that surround floating communities would begin to break down. The design intent seeks to demonstrate the potential integration of diverse social and cultural views within an existing community. In addition, the design hopes to encourage sustainable land practice by demonstrating the value of the ecotone and harmonious water/land development along the shoreline.

Based on the findings of this research, a design concept and program was developed. These are discussed in the body of the practicum and presented in graphic form.

## **acknowledgments**

I would like to express my sincere appreciation to my committee members, Professor Ted McLachlan, Professor Alfred Simon, and Adjunct Professor Bob Newbury for their encouragement and guidance.

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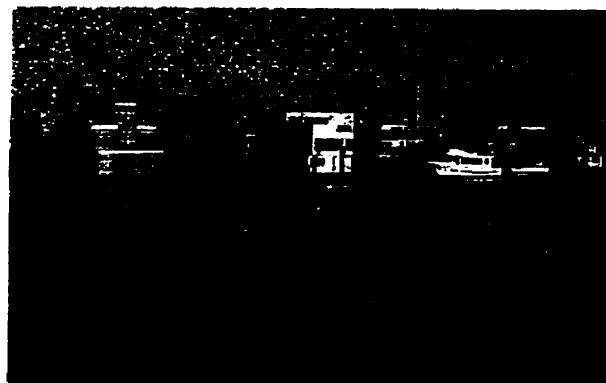
I wish to thank all the numerous people who have helped me throughout this research, including John Francis and Michael Roper of the Pacific Floating Home Association for their help with the survey, the Coastal Missions group for their inspiration, and architect Sally Grainger of Victoria, B.C., for her information and support.

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postcard from  
Canoe Pass Village  
Ladner, B.C.



**one: basics**

**the edge- a floating neighborhood  
the opportunity**

Increased land development pressures, combined with the desire for quality lifestyles in an escalating real estate market, have sparked a renewed interest in float home living on the west coast of British Columbia. This trend, although gaining popularity, has not been well received by mainstream society. Competition for waterfront property is fierce, demanding that everyone pay their fair share. Floating residential people are at risk to losing their lifestyle and being displaced. Municipalities are beginning to address the issues surrounding these residential communities, although guidelines are not yet standardized. Authority over development in various marinas, is spread over several levels of government and involves private developers, environmental groups and special interest groups.

There is a need to address planning, and development issues from all levels. Landscape architects can contribute a holistic approach to the design and development of floating residential marinas, that may demonstrate better integration with their existing host communities, and ecological context.



Uplands of Highwater Bay Marina  
East Richmond, B.C.

## **the edge- a floating neighborhood scope & objectives**

The scope of this study is to explore the concept of float home living in order to gain an understanding of this unique phenomena. The study will include an examination of place theory as it pertains to place making and as it supports float home lifestyles.

The primary objective is to consider the components of place as they contribute to the long term sustainability of a culture. Ecology and geographical aspects of the proposed location will be included in the exploration, as they are important to sustainability and place making. Particular attention will be paid to the consideration of water as a cultural element, and how it may contribute to float home living.

The study includes a brief summary of the evolution of float home living as a North American phenomena as well as from an anthropological perspective.

The design will be driven by floating residents' wishes, based on information gathered through literature of published American surveys and through an original survey of the Pacific Floating Home Association membership, on the B.C. Coast. Uplands will be considered the key link in the design and development of a floating home community and its integration with an existing host community. The design will consider the layout and spatial integration of the floating residential units in conjunction with upland facilities and access. Actual design of the residential units will not be included in this study.



Finn Slough, Heritage wetland  
Richmond, B.C.

## the edge- a floating neighborhood methodology

The following study and design adopts a typical approach for the study and design of any small scale housing development. The process used in this study included a literature review of the concept of float home living. Information on this topic was limited or outdated, which prompted the initiation of a questionnaire, intended to gather specific and general information on float home living specifically from a Canadian, west coast perspective. Findings of the research are presented in this document.

An extensive literature review was undertaken to examine background information on the cultural significance of water as a landscape element, and specifically, as it plays a role in the attraction to float home living. Further research is needed to determine the extent of cultural influence in the decision to live on the water. Other influences not explored in this study are the affects of economics of this type of residential condition and the specific social and cultural behaviors of float home dwellers as a distinct group outside of normative society.

The study considers the issues of float home living from several levels, from a municipal level to the local ecology of the area. Concerns of residents within and outside of the floating community are taken into account and the design is respectful of these. These concerns were expressed formally through a questionnaire, and through informal conversations with members of the Steveston community. The site analysis includes input from Moodie Consultants who are studying the B.C. Packers site as a whole. Information communicated through their preliminary public meetings have indicated that members of the existing community of Steveston are not in favor of a floating residential development in this area. The reasons for this response were not provided. All issues are discussed more fully in chapter five: *design*.

Several floating communities were observed and documented, and are presented throughout. This provided a basis for comparison and a starting point for the design. Only a few private docks were accessible by the public and therefore only a small number of residents were available for comment. Other background material collected includes an examination of the history of the site and town, adjacent land uses, town green space, trail links, and other amenities.

The research and site analysis were then synthesized and implemented through the redesign of the historic Phoenix Cannery site. This is presented in chapter five: design.

## **limitations**

Although the municipality of Richmond which governs the Steveston area is considering proposals for the redevelopment of the B.C. Packers site, a floating residential development is not currently being considered for this location. A municipal study of the waterfront area is underway, with a long term planning strategy expected to emerge shortly.

Since this is valuable fish habitat, a full environmental impact assessment is recommended, in order to fully understand the impact of this proposed development on the local ecology and hydrology of the river. Further information is required on actual shoreline profiles, and water salinity in the area in order to better reconstruct the shoreline habitat. Information is required on the location of underground service lines such as sewer and water, telephone. These are not currently documented by the municipality. The general condition of the major buildings on site vary from very poor (Cannery ruins) to good (warehouses). With the exception of the Phoenix cannery ruins, all major buildings are considered for reuse, although this may not actually be economically feasible. An actual building condition assessment is required.

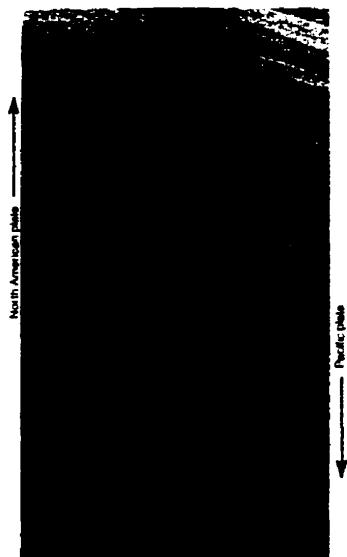
Literature on the current social and cultural uniqueness of floating home dwellers is presently unavailable. Some literature has been published on North American 'Houseboat and River Bottom People' from the depression era in the 1930's and up to the bohemian era of the 1960's and 1970's. This however presents an outdated and limited viewpoint, since the demographics and trends of the 1990's do not purely reflect either of these profiles. Literature on outgroups such as 'hippies' and 'gypsies' may offer some insight into floating home culture, however the social and economic conditions differ from the current environment and therefore parallels cannot be drawn.

Finn Slough,  
Heritage  
wetland  
Richmond, B.C.



**two: background**

Geographically, the zone of contact between two or more different regions are places of significant interest. As points of separation, edges may demonstrate the tension between contrasting elements. These are referred to as binary opposites, which reinforce our understanding of each element individually, as well as in opposition to each other. Dualisms are powerful because they can polarize whole concepts such as, for example, concrete versus abstract or local versus global, such that when discussed in parallel to one another, are able to clarify and simplify one another. In the physical realm where the land meets the sea, edges can be abrupt as in a rocky cliff, or may take on more subtle transitions, as in a beach. Each offers psychological contrasts and individual experiences. Boundaries and edges are fundamental in contributing to our understanding of the world by demonstrating through form, behavior, experience, and other various aspects, what something is; by what it is not.



San Andreas Fault  
Photo: the U. S. Geological Survey  
*Geosystems*, p. 339.

Edges and boundaries offer the greatest potential for energy exchange through spatial interaction and dynamic processes. Take for instance, the tectonic energy released between the North American Continental plate and the Pacific Oceanic plate in the creation of the San Andreas fault, or as in the scouring potential of waves acting upon a shoreline. These are visible processes, however energy exchanges also occur at an invisible scale as in the case of plant and wildlife nutrient cycling. These invisible processes are often taken for granted, however they provide a link between terrestrial and aquatic ecosystems that is extremely important to the survival of both.

One can extend the concept of edge to the human realm; between an urban centre and the countryside for instance, or between the downtown core and outer suburbs. Wherever boundaries and edges exist, a change in attitudes, experiences, forms and behaviors are likely to occur. By considering the environmental influences on boundary dwellers and their relationship to other settled areas, one may discover unique adaptations to particular environmental, economic, cultural and social conditions. Two San Francisco area examples demonstrate the dynamics between two ethnic groups and their urban districts whose edges present exchange forums such as local restaurants, craft shops, and parks among others, that

created a unique tourist attraction immersed in local traditions. In addition, these boundary zones contributed to the evolution of the counterculture, made up of bohemians, followed by beatniks and hippies. (Kolars & Nystuen, 1974) Whether we are speaking of a physical, ecological, or human phenomena, boundaries and edges are a special class of place in and of themselves, with distinctive characteristics and cultures.



marine terraces along the Pacific coast  
*Geosystems*, p. 460.

The boundary where the sea and the land meet, that constitutes the "edge", has a richness and quality of environment that is easy to appreciate from a multitude of levels. Boundaries between two places frequently act as transitional zones; embodying a unique blend of characteristics from both , often contrasting environments. The sea edge is a dynamic zone, where the energy of the water is continuously being released upon the land, leaving it in a constant state of flux. It is a shallow margin, referred to as the 'littoral' zone or commonly as 'the beach', which includes the shore and nearshore areas. The littoral zone changes according to the tides, revealing at times more or less land or it can be completely occupied by water. This is a kind of no man's land, consisting of both land and sea, but not wholly belonging to either. These margins offer opportunities for wildlife, plant life, and human life, who cannot endure the homogeneous environments of either land or sea, but rather thrive on the best of what each has to offer. An edge or boundary zone is often richer in species diversity, as in the case of ecotones, where, for example, plant and animal species from grassland and forest communities integrate to occupy a unique habitat.

These ecological principles can be paralleled with human behavior, and the phenomena of float home living. Here, people have chosen to situate their dwellings on the water, and yet remain firmly moored to the land. Their dwellings take on the characteristics of typical land structures, however, have been uniquely adapted to their aquatic environment.



black brant on a migratory stopover  
*Explore the Fraser Estuary*, Peggy Ward,  
Environment Canada Brochure, 1980, p.52



a unique floating home  
Houseboat

The needs of these boundary dwellers are not satisfied entirely by either the land or the sea, and so are satisfied, by living in a somewhat liminal position that straddles both. A liminal period, which is discussed in the anthropological essays of Victor Turner and Edmund R. Leach is presented in rituals, and is used to indicate a transition towards a sacred time from the secular or to mark a transition in some rites of passage in the life cycle. This is a position where one is 'betwixt and between' and therefore the rules of neither the sacred nor the profane govern behavior. It is also considered to be a dangerous position, full of contradiction, vulnerability, superstition and mystery. Ritual enactment during this period draws on symbols of death and isolation and rebirth, and is often demonstrated by transformations of appearance, or masquerade, role reversal and formality. These views on liminality can be paralleled somewhat with float home dwellers, who are often negatively stereotyped. Often, people who live on float homes on the 'edge' are viewed as being 'different' or non conforming and therefore undesirable. As with the Gypsy culture, their lifestyles are often misunderstood by the majority of society who are often suspicious of their behavior.

The boundary between the water and the land, is an attractive environment; physically rugged and natural, it is one that offers vast expansive vistas of the ocean and yet may afford close proximity to urban conveniences. From this locale, the people who live in floating homes are physically separated from the noise and stresses of everyday city life, and are able to mentally escape into quiet serenity along the shoreline. In today's real estate market, a good location and the amenities it can offer, especially within an urban center, are of prime consideration. Even though real freedom and mobility are limited, in the romantic sense, freedom of spirit and escape from the harsh realities of the city are real and can be achieved on a float home. Today, the wealthy working class have re-discovered the benefits of floating lifestyles.

Since the beginning of our ancient civilizations, 'landlubbers' have always found the sea irresistibly romantic and mysterious. For the past six hundred years, an annual regatta which marks the wedding ceremony between the Venetians and the sea, has used symbolism and ritual to reinforce their connection to the lagoon. Even with today's scientific understanding, changes in the tides evoke a sense of mystery and reverence in the sea and its celestial connection. The ebb and flow of the tides that continuously reshape the sea edge, remind us of the cycles of day and night, changing seasons, and eternal presence of the water cycle.

Literature has captured the complex relationship between humans and their mysterious attraction to the water. Writers have used the notion of the seascape as a metaphor for ones state of mind. In Landscapes of the Mind, Malcolm Lowry's novels are described as a direct metaphor for his life; journeying across real landscapes and those within his imaginations. Most of Lowry's life and stories take place in seascapes, indicating his love affair with the water, upon which he was a lonely wanderer for most of his life. He is not any happier living inland and seeks the compromise of living on the beach on the North shore of the Burrard Inlet in Vancouver. It is in these littoral places between land and sea, in that he finds himself most content. (Porteous, 1990) In Alongshore, 1994, John Stilgoe offers some insight into an outsiders' perspective of those who live on the shore, by describing them as somehow 'magical' and 'the true monarchs of the beach'. Because of their intimate connection with the sea, and their ease in the wilderness, beachcombers are sometimes seen to have a secret knowledge or understanding of the mysterious spell of the sea, and therefore hold the ability to cause storms. To dwell at or near the water's edge has always been a valued existence, however those who dwell in the littoral zone are somehow viewed as 'different'.



Venice lagoon, 1996



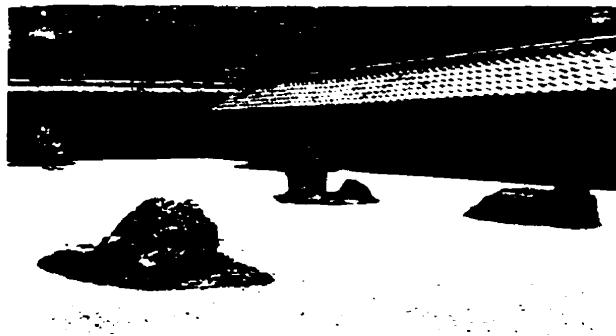
Highwater Marina  
Richmond, B.C.

Society's long lost reliance on the oceans of ancient times and respect for the sanctity of water are all called to mind when one lives in close proximity to water. Cultural symbolism found in myths and rituals from every part of the world drive home the importance of water, and reinforce our physical need for it. For most, however this is another level of consciousness that is not often apparent or articulated by those who are asked about why they are attracted to water. The attraction is a complex phenomena which includes a combination of physical, emotional, psychological, and cultural factors. To be sure, people who choose to live on the 'edge' share a romantic appreciation for the spirit of this 'in between' place. This is where the rich beauty of nature combines with the human spirit of adventure in a comfortable, and convenient setting. This is a unique living arrangement made up of the practicality of urban living and the spirit of freedom.

Physically, it is a hybrid of terrestrial and marine dwellings, and therefore it should follow that it should be governed by atypical attitudes, behaviors, experiences and values. Float homes reflect the unique character of their owners. The 'edge' where the land meets the sea holds an eternal human attraction which deserves special consideration and development. For some it is just a nice place to visit, and to send a postcard from, but for others, the 'edge' is a way of life and a state of mind worth preserving. There is something mysterious about this place, which affects people as strongly as the moon affects the tides.

Often by force during hard economic times, as well as by choice, a portion of the population has always existed on floating homes. This practicum examines the various cultural meanings associated with water in an attempt to reveal the attraction to float home living. An exploration into North American, and other water settlements is included in the discussion. This practicum explores the Place of North American marine living in the present time and in an urban setting as an alternative residential neighborhood.

Throughout the ages, water had been a strong influence in the location of settlements. Ancient cities in Greece, Egypt and China and the Roman Empire have long depended on a river source for their survival. The nearest river supplied drinking water, removed wastes, and irrigated their crops. In addition to the basic survival and well being of its inhabitants, the river also provided power for industry, and served as transportation routes which became essential for trade and commerce. In Central America, for instance, pre-Colombian cultures used watercraft as the principal means of transportation. Water served as a key advantage as a defense for settlements such as Venice, against various foreign invasions and contributed to its long term survival as an important Roman port.



Ryōan-ji, Kyoto, c. 1488-1499  
The Landscape of Man, p. 96

Some cultures such as the Italian and Japanese, also have a highly developed aesthetic appreciation of the water environment with such celebrated examples as Villa D'Este and Ryoan-ji. In the city of Tenochtitlan, of the central American Aztec Empire, the people have incorporated a maze of waterways and stone causeways that elegantly link them to the mainland (Wilson, 1986). A similar landscape design is still used today on the outskirts of Mexico City. It was the water transportation networks in all settlements, that facilitated the exchange of ideas, and trade, which bolstered cities to become social, cultural and economic concentrations and caused them to grow into typical modern metropoli.

The following chapter explores the meaning of water within different cultural contexts in order to achieve some insight into the factors which may attract individuals to living on the water. For cultures who view water as an essential part of their landscape, their connection is necessary, physical and immediate. However, there are often rituals and cultural metaphors which serve to animate and celebrate this physical importance beyond its basic function. Oceans and rivers hold a special attraction for residential dwelling; for reasons that vary from one culture to another and from one time period to another.

Water has a magnetic attraction in the landscape that exceeds any other element or material. Covering two thirds of the earth's surface, water plays a supreme role in the day to day functioning of our earth and all that is inhabited on it. Water has inherent properties which allow it to be malleable, and transmutable. Whether it be solid as in ice or gaseous as in mist, water is afforded a highly complex but special significance by humans. Its behavior causes a complex reaction in the senses which registers as an emotion or value. It has the capacity to ameliorate climate near adjacent land masses, to cool, or energize and produce sounds that soothe or hypnotize. It has the capacity to cleanse, to bring life and to destroy life. Its mysterious behavior and seemingly magical properties give it a potency and power unlike any other element. With all its capabilities, water has the greatest capacity for cultural symbolism and meaning. It has the ability to point to something else beyond itself, bridging reality with surrealism. A small amount of water in the landscape has the power to evoke the sense of an infinite ocean.

Since the beginning of time, civilizations have established cultural identities which celebrated metaphysical, utilitarian, aesthetic and therapeutic relationships with the river or the sea. The use of water permeated all aspects of Greek and Roman lifestyles which included the Thermae, or therapeutic baths, intended to purify and preserve youthfulness and health. Annual rituals, such as the one that occurs in Venice, continue to celebrate that community's intimate connection with the sea. This ritual takes the form of a 'wedding ceremony' that acknowledges and celebrates the infinite and powerful exchange between the lagoon and Venetian life. Eastern philosophies, which are sensitive to ecology have revealed through their landscapes, the cosmological perspective of Chinese Taoism. The Japanese tradition of landscape design maintains the use of a mystical process of site evaluation called Geomancy. Cosmic energy, referred to as Ch'i, is personified in the natural forces of wind and water that run through the body of the landscape. These forces had to be analyzed and balanced by the geomancer before anything could be planted or built. Traditionally this was undertaken with respect for the natural world as well as aesthetics. Eastern and Western cultural ties to water respectively, continue to be reinforced through myth and ritual celebration as well as throughout daily life, and the built environment. Through these mediums, the value of the water source and its cultural meaning is passed on to the present modern world.



Neptune  
Campodoglio, Rome

Frosted Nudibranch, *Dirona albolineata*  
Exploring The Seashore, p. 26



A semi microscopic green alga, *Derbesia marina*  
Seashore Life of the Northern Pacific Coast, plate 31

Typically, every civilization throughout time has attributed a cultural affinity with rivers and oceans. The occurrence of water, in association with creation myths and metaphysical philosophies as the giver and sustainer of life, indicates its ultimate importance. The Mesopotamians of the ancient east, believed that the goddess TIAMAT (the saltwater of the seas) and the god OPSU (fresh waters underground) gave birth to all the gods from whom the human order has proceeded (Grolier Inc., 1995). Water in abundance indicates fertility, such as in the annual flooding of the Nile River, where sedimentary deposits left by the receding waters invigorate the land's ability to support agriculture. The sea is also celebrated as a fertile medium for the Norse characters Frey and Freya whose riches, fertility, and fecundity are symbolically provided by the earth and sea. The water cycle suggests a potency for life through death and rebirth beginning and ending in the sea. In ancient Rome, the Aqua Virgo or aqueduct implemented by Sextius Frontinus provided a creation myth which suggested immortal connections. The important position of principle deity was reserved by the Myceneans for Poseidon, god of the sea and earthquakes. For the Romans who followed in that tradition, they continued to worship him as Neptune. For ancient civilizations, these myths guided their social behavior and ordered their world.

Water is both a sign of life and alive in itself. In the oceans, rivers and streams, living organisms are born into and are supported by water. Modern scientific theory on the evolution of humans suggests that life on this planet emerged in the warm, shallow primordial oceans of the world. There are a number of important elements in addition to Sodium and Chloride, that form the basis for life in the oceans. The waters of the rivers and oceans support marine life that provides an important food source. Coastal margins afford a certain natural richness which creates a unique habitat that attracts animal life such as sea birds, seals and sea lions, mollusks, crabs and sea worms as well as human life. The changing tides reveal microscopic plankton, which is one of the planet's greatest protein sources and plays a key role in the aquatic food web. (Keller, 1996) Seaweed and marine plant life flourish at the water's edge, and people are attracted to its sandy beach as a source of recreation. Because of our dependency on water as necessary for life and survival, its source will continue to remain sacred and important.

Water has always had mysterious healing powers. For centuries, people have flocked to the seashore for restoration of health and for rejuvenation of the body. One of the reasons that the sea has such healing powers, is due to the sodium content within the water. Minor cuts and skin blemishes are cleaned and can be sterilized by sea water, which causes them to heal quickly. It has been said, that injured joints and torn ligaments, if bathed in the sea and exposed to the heat therapy of the sun, can heal in amazing ways (Keller, 1996) The sea and the shoreline contain elements that not only have the ability to heal physically, but also provide the setting in which to soothe the mind and the soul. The shoreline often projects an atmosphere where feelings of serenity, beauty and strength both invigorate and restore the human spirit. Cool ocean breezes provide an abundance of oxygen, moisture, and pungent freshness that stimulate the senses. Through its physical properties and unique surroundings, the ocean has demonstrated the potential to promote health and well-being.



The mystery & energy of the tides  
image from [Superstock images CD 1997](#)

It is evident that the water certainly holds potential as an energy source. Streams and rivers, cascades and currents, when harnessed, provide us with hydroelectric power, which is now of paramount importance for the daily functioning of our cities and homes. Modern ideals have come to depend on this power source almost blindly, trusting that by some supreme will, it will continue indefinitely. The ocean has the potential to reveal the earth's tremendous energy, through occasional storms such as oceanic earthquakes that cause Tsunami, or winds that manifest themselves in Hurricanes. Sheer volumes of water have the capacity to continually mix, allowing incredible absorption of heat energy that is released through evaporation. These enormous volumes hold within them, the potential for disaster in the form of floods which cause mud slides or other misfortune that brings death. A certain reverence and respect governs the relationship for those people who live closely with the water, and are aware of its potential for destruction as well as life. The continuous ebb and flow of the tides demonstrate the effects of lunar gravitational energy which provide the mysterious tension between earth and the heavens. For many cultures, the unexplainable association between tides and celestial phenomena provides a romantic or mysterious, supernatural existence.



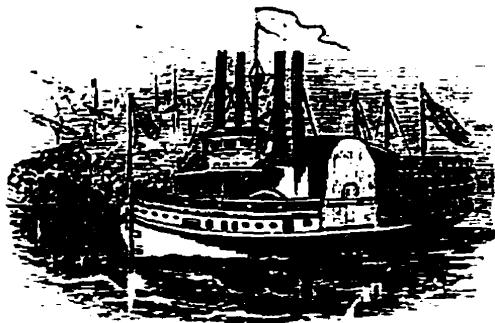
the edge is continuously reshaped by the tides & waves  
image stock, CD

Almost in every culture, the ocean, the rivers and underground springs echo spiritual metaphors for some aspect of the life cycle. Religious beliefs use water to symbolize chaste and purity, as evidenced by the baptismal cleansing rituals of Christian faith. In this ritual, water is used symbolically, to redeem and purify, to wash away the evil of immortal sin and prepare for a place for God. In Egyptian culture, ancient hieroglyphics depicting river symbols, guide travelers to the afterlife. Physical and spiritual isolation provide an emotional setting for meditation of the life experience in the garden of Ryonan-ji, Kyoto. The Zen garden abstracts the element of water through the use of sand, evoking the image of a limitless ocean. Raked into ripples and swirls of fast moving waters this garden abstracts the movement of water, while its simplicity and minimal elements magnifies the infinity of the ocean and the limits of the land. Placed within the sand are three large stones, which find cosmological meaning in the myth of the Isles of the Immortals. The stones are abstracted in accordance with the myth to represent the turtle, which is a symbol of longevity and the crane, (believed to have carried the immortals to each of the islands). The Japanese garden reinforces a cultural solidarity by expressing its ideological and cosmological beliefs through abstractions of nature. Cosmology, creation myths and legends of eternal afterlife almost universally, include water in some form.

The sea provides us with a metaphor for the eternal. With its vast volumes of water and broad horizons, it appears visually infinite. The ebb and flow of the tides that continuously reshape the sea edge, remind us of the cycles of day and night, changing seasons, and never-ending presence of the water cycle. The relentless "rope" of the ocean brought about by the pounding of the waves or the gentle lapping onshore hold hypnotic abilities, capable of calming and soothing the soul. Continuous motion and life reflect a tireless sea.

Literature has captured the complex relationship between humans and their mysterious attraction to the water. The power of the water to overwhelm as well as to fascinate is revealed poetically and romantically in the writings of Malcolm Lowry (who spent the greater part of his life on the sea), Mark Twain (The Charm of River Life), Philip Keller (The Sea Edge), and John Stilgoe (Alongshore) to name just a few.

These writings allow one to understand beyond the initial reflection of the 'real', physical landscape and to identify the relationship between these landscapes and human personality and culture. Malcolm Lowrey's love affair with the sea is described using the elements of his experience to echo his tormented mind and the realities of his life. In his novels, he eloquently describes the positive and negative aspects of living on the sea both as a romantic attraction and yet one of placelessness, loneliness and desperation. An example of his work is featured on page 89, by Douglas J. Porteous in his book entitled, Landscapes of the Mind.



steamboat from the turn of the century  
from The Charm Of River Life in Urban Waterfronts '87, p.82

*"From the landlubber's viewpoint, the unrestricted placelessness of the sea and the irresponsible adventure in short-stay ports seem enviably romantic.....but the tyro quickly discovers that life at sea is ultimately boring. The work is hard and the deck-hand is too tired to contemplate the beauties of sea and sky. Ultimately, sailors are happiest when they are going home, yet on land they are homeless and must compensate in alcoholic excess: drunk is the sailor home from the sea."*

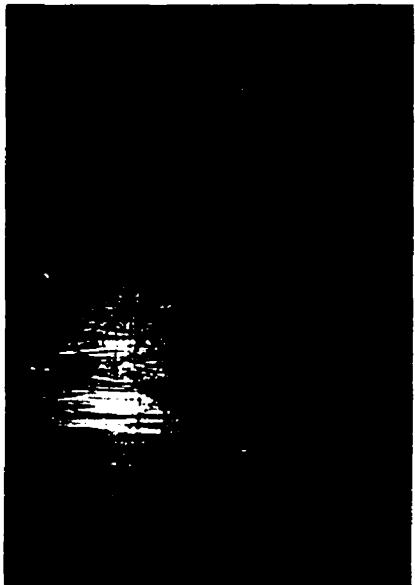
Malcolm Lowrey  
(taken from Ultramarine p. 145)

Lowrey's life was a journey both in reality and metaphor, across real landscapes and within his own mind (Porteous, 1990).

The writings of Mark Twain also describe an adventurous personality, but with a passion and romantic attraction to the lifestyle of living on the water. In his work describing the 'Charm of River Life', republished in Urban Waterfronts, 1987, he writes about this attraction for a lifestyle of adventure and mobility as simply being human nature. His description of river life is analogous to an independent, adventurous spirit in which each person courses his/her own direction and rules of life. He acknowledges that this may not be for everyone, but for Mark Twain and his characters, there can be no greater freedom than to make one's own choices and welcome adventure in the unknown. This sentiment is echoed by Scott Russell Sanders in his 1992 article 'Staying Put', where he infers that being mobile suggests a higher state of self awareness and intellectual pioneering. For those attracted to the mobility of living on the water, a commitment to lifestyle and ones own ideals may be stronger than traditional ties to a geographic community.



floating community wildlife  
Canoe Pass Village, Ladner, B.C.



float home living with nature  
image from superstock images, CD, 1997

Phillip Keller draws his spiritual inspiration from the natural beauty and unique setting of the sea edge where he finds peace and solitude, away from the stresses of everyday life. It is here that he finds the work of the supreme being revealed in the limitless of the ocean, and life of the shoreline. It is precisely through an intimate connection with nature that Keller is able to find spiritual freedom. Through his understanding of natural laws, and ecology, he creates a parallel of similar behavior in his life. This intimate connection to nature is repeated similarly in a story by Hannah Merker, in Gently With The Tides. She describes the experience of an injured loon while living on a houseboat in Long Island Sound as parallel to her own life experience in the harbor. Her story reveals a close connection with the sea where she is determined to stay, and a love for nature which has taught her life's lessons. According to an American survey conducted by the journal Living Aboard between 1975 and 1990, many people expressed positive reference towards nature and the environment when they were asked what they liked most about living on the water.

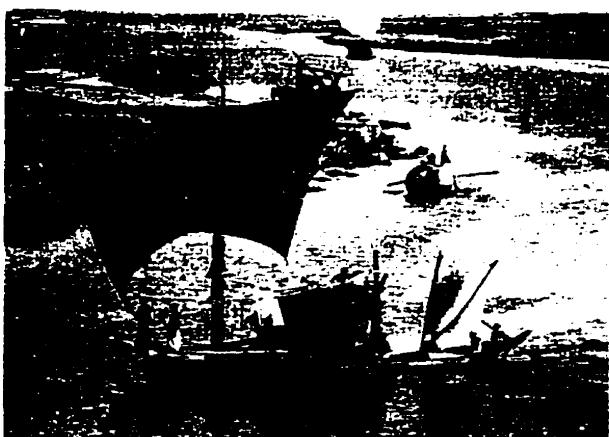
Living on the water is a relatively new phenomena in North America. Anthropological research has revealed that various communities have lived on the rivers and seas of southeast Asia for centuries prior to those found in North America. These people were primarily hunter-gatherers of the sea who once ranged freely through the many tiny islands spread across the eastern Andaman Sea. These groups of people referred to as "Sea Nomads" or "Sea Gypsies" inhabit an oceanic fringe extending from the seas off southern Burma, along the Malay Peninsula past Thailand to Malaysia.

As with the nomadic indigenous peoples of North America who have been either displaced or changed by western immigrants, a similar situation exists within these Asian communities. Contact with mainland peoples who moved out to the islands in escape of onshore epidemics has changed their culture from its traditional form. (Hockings, 1993) Today, varying degrees of nomadism is spread among the "Chaolay" as they call themselves; with some living in semi permanent dwellings on stilts, in addition to those who continue to move seasonally. They appear to be a culture who are struggling to preserve their identity and unique lifestyles in the face of a changing society.

Individuals who integrate with mainland communities, are no longer called Chaolay and no longer thought of as people of the sea. Cultural identity is mainly derived from their geographic condition, although their traditions may be somewhat related to those on the mainland. The sea nomads in the Sulu and South China seas are also related to those of the Andaman, and may be more closely related to each other, than to their respective mainland. They have similar practices and legends. They also raise their children in similar ways, seek their livelihood similarly, and speak similar dialects of Malay. (Hockings, 1993)

The Chaolay people express much contentment with their traditional lifestyle. They lead a responsible, stable, sustainable lifestyle, that respects nature's forces and reflects the adaptive nature of their culture. They practice a sharing of their communal property, knowledge, food and support. For one individual to hold more wealth than another, is completely contrary to their cultivated system of behavior and to their collective sense. Traditional sea nomads do not hoard food nor store material goods. They take from the sea just what they need for their daily livelihood. Their sociality upon which their way of living is based, is one that is not easy to reconcile with the practice of capitalism and private wealth. (Hockings, 1993) The Chaolay people are deeply attached culturally to the sea , and physically dependent to the life within it.

As with many other indigenous nomadic cultures, who were subjected to invasive social change, they lost their capacity for sustainability as well as their unique social and cultural systems. Capitalism, along with the restrictive enforcement of foreign laws, permanent land settlement, and the introduction of alcohol and disease when combined with negative social treatment, forced a collapse of the traditional sea nomad culture. It appears that a nomadic river/ocean lifestyles have been the object of negative social perception for quite some time. It also appears as though mainstream society, namely by western influence has rejected this lifestyle as legitimate by trying to 'reform' or 'eliminate' indigenous nomadic cultures.



Asian Sampan  
photo from calendar, author unknown



Finn Slough, Heritage Wetland Community  
Richmond, B.C.

In North America, those choosing to live on the water were in many ways subject to the same social transformations over time, as the Sea Nomads of Southeast Asia. Over the years, the demographics of float home and riverbottom people have changed, however different, they appear to share a common motivation that is in search of a better lifestyle. Beginning in the late 19th century, when North America was becoming more heavily populated, and urban centers were just beginning, some people such as those characters created by Mark Twain adopted pioneer lifestyles in hopes of discovering new places. Around the turn of the century, self propelled houseboats and steamboats became elaborate summer homes for the young, wealthy 'jet setters' of the day, appearing first on the west coast of the U.S.A. These lifestyles were not unlike the lifestyles in the 16th century, where the wealthy retreated from the tribulations of the city in favor of their private and spacious 'villas' in the countryside. During the Depression years, the number of people permanently living on float homes along the Mississippi as well as along the west coast, increased. At that time, living on a float home was substantially cheaper than living on land, and the abundance of fish provided a free source of food. This lifestyle provided a viable alternative for those who were economically depressed, by affording them a sense of control and community, in an unpredictable time. This condition is not typical of people who live on float homes. Even during the Depression, houseboaters were migratory people, however not necessarily without property, homes and family (Hiller, 1939). They resembled gypsies rather than hobos. Driven by economic means and non traditional lifestyles, entire logging communities of up to 200 people continue to float along the remote intracoastal waterways of the Vancouver and Queen Charlotte Islands. They carry along with them all the necessary conveniences to maintain their daily lives, including schools that rest on floats ( Rose, 1992). These communities represent a more self sustaining practice of float home living and experience a greater sense of community than most people in urban centers. Typically, people who lived on float homes came from all walks of life. From well to do, working class people such as lawyers, doctors, as well as fishermen and sailors, houseboaters generally appear to be attracted by the water and the rugged, natural environment.

After WWII, float home lifestyles attracted those with greater optimism about the future. Single dwellers became couples and soon an increased number of children became evident. The sixties and seventies saw the influx of the "discontented sons and daughters of America" (Dennis, 1977). Artists, environmentalists and others wishing to adopt a more bohemian lifestyle, took to float home living, as a deliberate rejection of the excessive, material consumerism and class distinctions that were becoming evident during that time.

Float home populations in Canada are few compared to the U.S.A. where it is estimated that in 1987, there were 3.2 million persons living in boats and recreational vehicles. (Frankel, 1993) Demographic and other information has been acquired through surveys conducted between 1975 and 1990 by the Homeafloat Association of the Eastern American Seaboard, and the Living Aboard Journal. Living on floating architecture, be it a boat or float home, is described as a unique lifestyle where 'living aboard' is characterized as a state of mind. However one is unable to generalize the makeup of a live aboard community in typical cultural and socioeconomic terms (Frankel, 1993) Generally, demographic results appear to reflect the range and variety of individuals found in the rest of society.



Houseboat on False Creek  
Vancouver, B.C.

It can be stated generally, that those who choose to live on floats or watercrafts, are drawn by the peaceful serenity of the water, the beauty of shorelines, the camaraderie of fellow boaters and the close communion with nature (Frankel, 1993) For many it is an escape from the pressures that city life brings, and an opportunity to be adventurous or rugged. In today's real estate market, a good location and the amenities it can offer, especially within an urban center, are of prime concern, often driving up housing market prices and leasing rates well beyond what is affordable by most. The people are generally strong willed and not easily discouraged by bad weather, social ostracism or legislative limitations. They are usually responsible, co-operative, and law abiding citizens, gregarious and friendly (Frankel, 1993) Many were brought up living on boats on the water, yet others are choosing this sort of residence at later stages in the life cycle, such as retirement.. On the coastal waters of greater Vancouver, floating homes are evident in a range of sizes and physical conditions. From the boarded shanty on Finn Slough, to the upper end 2000+ sq. ft. new homes in Ladner's Canoe Pass Village, float homes display the character and personality of their owners.

Research has found (Frankel, 1993) that in spite of the diversity of the live aboard lifestyle, there is a great deal of consistency in their view on occupations, pets, fears, beaurocratic hassles, boats, and nature. Many express their lifestyles as independent, quiet, free, tranquil, mobile, as having choices, relaxing and being one with nature. Those who live on houseboats experience many of the same benefits as described generally by those who live aboard other watercraft, however their sense of freedom and mobility is slightly more restricted. This sense of freedom and mobility is most frequently misunderstood by the rest of society, and on which negative criticism is often based.

Even though houseboat dwellers are usually permanent members of a community, society generally perceives them to be temporary residents. Even Census Canada has not kept up to the trends of the last 30 or so years, by not recognizing float homes as a permanent dwelling type. In actuality, float homes are not as easily moved when they are hooked up to sewer, water and telephone lines, and certainly no more easily transportable than mobile homes, which are afforded their own heading with census Canada. Those who are permanently moored on floating homes have done so for a variety of reasons. Some may have found an attachment to a particular location or scenic environment and have chosen to stay. Others are not financially independent and therefore become moored near urban environments due to job commitments. Still others may have started out as liveabards on watercraft and later moved to float homes in order to be closer to a group of people or community who share similar lifestyles, or with whom they have developed relationships. Economically, float homes have always represented non traditional architecture with no land ownership, and therefore have typically been a more affordable alternative to traditional residential communities. This however is changing in light of land pressures and the amenities offered by the coastline. Today, residential marinas are raising the cost of moorage such that it may not be an affordable alternative for much longer.



Queensborough bridge  
Highwater Marina  
East Richmond, B.C.

Erroneous negative perceptions based on a nomadic lifestyle, have led to stereotypical discriminations. Houseboaters are perceived to be drunkards, vagabonds, law breaking, tax-evading hippies, who are irresponsible and who are freeloading on the backs of tax paying citizens.

Although mobility is more possible for those who live on float homes, they are far from nomadic or gypsy like. willing to forego many of the material aspects of modern living, often in favor of the intangible benefits. Due to the fact that many houseboats occupy prime waterfront, issues of regulation , sewage services and slip lease/ or mooring rates are forever in the foreground. This is a highly sensitive issue with those who are seeking to permanently reside in a harbor community. Often float homes and other liveabards are severely restricted as to where they can moor, primarily because they are negatively viewed. They are seen to restrict public waterfront access, pollute the water, clutter up natural vistas, or pay no local taxes. Simply because they are 'different' from most folks they are viewed therefore as undesirable (Frankel, 1993) In general, the people who live in float homes are similar to those of their adjacent land based society, on which they commonly depend. They are attracted to good communities, scenic surroundings and other amenities, however they are willing to forego many of the material aspects of modern living, often in favor of the intangible benefits.

Today, the wealthy working class have re-discovered the benefits of float home lifestyles. Our ancient reliance on the rivers and oceans of ancient times and respect for the sanctity of water are all called to mind when one lives in close proximity to water. Cultural symbolism found in myths and rituals from every part of the world drive home the importance of water, and reinforce our physical need for it. For most, however this is another level of consciousness that is not often apparent or articulated by those who are asked about why they are attracted to water. The mystical properties of the sea that have the secret ability to restore mental health and physical well-being, hold a magnetic attraction for those who have the choice to live there. For today's float home individuals, the natural setting, expansive views and peacefulness of the shoreline are perhaps the most attractive amenities one could find in an urban environment where this type of setting is rarely found. With increased land pressures on coastline developments, and escalating land prices, developers are seeking a bigger return on their investment, often choosing higher density residential developments such as townhouses or apartments. Residential marinas may not remain affordable for much longer. Even though real freedom and mobility are limited, in the romantic sense, freedom of spirit and escape from the harsh realities of the city, often only a dream for most people, are a reality and can be achieved on a float home.



Cnace Pass Village  
Ladner, B.C.

The concept of place has been studied and written about from several different perspectives, some of which support one another, and others which are contradictory. In the last 20 or so years regarding the theory of human geography, humanistic theory has challenged traditional behaviouralists, and positivists. The academic integrity of theories such as phenomenology, structuralism and empiricism are still under scrutiny. By their very nature, such theories are often subjective and difficult to measure quantitatively. In any case, humanistic writers, such as Relph, Entrikin and Johnston to mention a few, continue to present valid points regarding our understanding of the concept of place. Recent post modernist theory has also challenged traditional notions of place and have contributed much to the discussion of the future of place making. I believe we all have an intuitive understanding of what place means to us on a personal level, since we likely have formed attachments somewhere throughout our lives, however it is often difficult to articulate the particularities of a place and our experiences within it. It is important to have an understanding of the significance and complexity of place as it is closely woven into our lives and environments. This is especially important for environmental designers but also to further an understanding of who we are and our relationship within the world.



False Creek, Granville Island  
Vancouver, B.C.

The concept of place begs examination from both its physical and conceptual components, as well as from the perspective of psychological attachment and its social implications. The various components of place include a physical dimension such as geographic location, landscape and built forms as well as the cultural and social processes that have influenced and been shaped by the physical environment. It has been described as a "multifaceted phenomenon of experience" (Relph, 1976) "that incorporates several aspects of people/place bonding" (Altman & Low, 1992). There is also general agreement that it has a relationship with the built and natural environments which cannot be separated or ignored (Jackson, 1984). Entrikin elaborates in his 1991 book The Betweenness of Place, that place is a condition of human experience within a cultural context.

Perhaps the most complete definition of place has been put forward by Johnston, 1991 in A Question of Place, where he describes place as a milieu of diversity or a complex organization of physical, social, cultural, political, and economic factors that are driven by individual and group behaviors, that are continuously influenced by and affect its physical environment; some with clearly defined boundaries and others without. Place seems to be more of a conceptual realm, or a state of attachment, fluctuating along a continuum between physical and sociocultural elements.

According to the work of Edward Relph in Place and Placelessness, the spirit of a place lies in its landscape. However, not all place experiences are necessarily landscape experiences. This implies that in order to define what place is, we must look to the landscape. This is just the beginning of a deeper understanding of a particular place. What is more important, is what social and cultural processes have occurred in that locale as a direct result of its physical environment and geographic location. It is the interaction between culture and physical location that can provide a place identity, which is able to withstand the passage of time and whose meaning can be shared among a collective population. Even though the built landscape will undergo changes over time, the character of place is persistent and is related to a continuum of memory and history, that can never be dissolved completely. The physical landscape therefore only assists in the identity and recognizeability of a place. Once registered by the senses, place departs from the objective and is imbued with a subjective cultural and social language. This adds to the richness of a place and may reveal attachments and perceptions of individual and collective experience. A landscape provides the physical origins and is able to reflect the true spirit of a place through built forms and cultural and social climate.



Residential canal  
Venice, Italy

The distinction of place has been associated with the unique experiences that have occurred there, and the meanings we associate with these experiences. It is difficult to disassociate oneself from the experience of a place. The observer and the observed are connected in a ways that cannot be drawn apart. It is impossible to give a description of the world which is completely external to the knowing subject (Entrikin, 1991) Entrikin goes on to define meaning as a set of mental facts, having objective references which are able to be mapped. Places can be neither totally material nor completely mental, but always a combination of both in each experience.

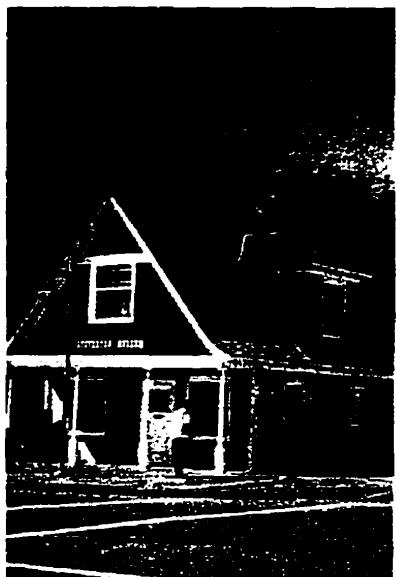
Research supports the argument that meaning is not inherent in space, rather it is a set of events, object, locales, and culture that combine holistically with people to give a place its meaning. Therefore, central to our concept of place is the importance of meaning, particularly as a collective or shared reference.

Several approaches to uncovering the meaning of a place have been put forward. Entrikin has suggested that the study of place must come from an "in between" position, as a holistic view. This is an interpretive position, somewhere between description and explanation. From here, the understanding of a place occurs within the context of actions and events. Another way of approaching the study of place is through "narrative" which describes the landscape from a particular view. This may be seen as too subjective and unique to have validity, and as a research method may prevent strict replication. However, by acknowledging the role of the interpreter, it may recognize that the interpretation of data can be, in effect, a dialogue with other places, and people within an intellectual and institutional context. According to Brian Stock, 1993, a place can be described as text, where there is an underlying narrative of some historical significance, which is generally known and embedded in the text. The landscape can therefore send cultural messages which may be a substitute for reading. Post modern culture, which embraces individualism and the unique, may have difficulty with universal meanings and values and therefore any attempt at a direct narrative through landscape form may fail in the communication of any particular, desired meaning. Visual representations of a place, such as seen on postcards, may offer some insight into what is psychologically, socially and culturally significant about them. It has been suggested that questions regarding the making of place should be answered through the design process, rather than through physical form, since its roots are closer to social and cultural factors rather than to the aesthetic (Canter, 1977). Engaging the community in the design of communal spaces has been an effective method of getting to the roots of place. The phrase "sense of place" has taken on many references, often used interchangeably with the word "place", although because of the word "sense", infers a perceptual realization within a physical locale, referring more to the subjective feeling of attachment to a place. Time has an effect on our concept of place attachment, in that it reinforces the continuity and preservation of memory and experience through a place.



Marine ecological station  
Cowichan Bay, Vancouver Island

Historic preservation contributes significantly to ones sense of place and attachment. However, the length of time spent in a particular place does not preclude an individual's attachment to it. Some have said that people can put down roots in a matter of forty eight hours (Tall, 1995) Mobility does not preclude an attachment to place, and some even argue that it is inherent to human behavior, and actually heightens an awareness of sense of place. Through public historic references visible throughout the landscape, one is reminded of the spirit of a place and collectively share in a common attachment that is able to transcend time. In addition, the cyclical nature of time is marked through ritual, which also reinforces our attachment to a particular place. "It is not the built forms that unify our attachment and belonging to a city, it is the sharing of time" (Jackson, 1994)



Steveston Museum  
Richmond, B.C.

Place demonstrates a two way affection; one of the influence of the built environment towards social processes, and that of the social power to influence what is there. Through socialization between one another and as a group towards another, we achieve an understanding of our individual identity and community identity. Each serves to reinforce one another through duality expressed as "in place", meaning belonging, and "out of place" which is external to a group. Through our shared ideologies, we form a community membership that in turn reinforces our sense of individual identity. Social identity is derived through processes of interaction which are reinforced through public place. For example, float home communities have challenged the dominant ideological belief system of normative society on the West coast of British Columbia. Their representation in the media, public reactions, and those by political figures have historically, influenced their internal social boundaries as well as their geographical boundaries. The language often used to describe their residential patterns, has created a collective stereotype which identifies float home dwellers as outside of the social norms and therefore 'out of place'. This has perhaps strengthened the internal identity of the individuals within this group and positively encouraged greater solidarity among its membership. Conversely, the establishment of float homes has uncovered a certain ideology among normative society that would perhaps have not been articulated since it is so embedded in daily life. Both group identities are reinforced through the practice of social ideologies and the transgression of place, which in this case, is that of the residential neighborhood.



Britannia Heritage Shipyard  
Steveston, Richmond, B.C.

We stand to learn much about a cultural group by studying the processes of their interactions. By extracting examples of such "deviant" behavior, as in the case of float home dwellers, we may see more clearly the limitations of socially accepted values. What may be socially external to a culture, may often be symbolically central to its ideologies and identity. "The concept of self then; that system of thoughts and experiences which enables each one of us to regard ourselves as unique and to distinguish ourselves from others, is an integral aspect of the psychology of place." (Canter, 1977)

Place attachment has been defined as a complex and multifaceted phenomenon that incorporates several aspects of people/place bonding (Altman & Low, 1992). This is an integrated concept, where the relationship between people and place is inseparable, and whereby emotion and feeling are central. Our greatest attachments are closely related to places that are private. Place attachment provides an ongoing sense of comfort, security, and predictability to the individual. A shared attachment to place is possible when place transcends the unique experience of individuals. Attachments are not made to the physical environment, only to socially constructed meanings and shared experiences provided through that environment. Social attachments take on much greater importance in place attachment than the connection to a particular locale.

Entrikin offers an argument for the seemingly diverse nature of today's culture. Research by Fred Kniffen has demonstrated that spatially, through aerial differentiation, superficial observation reveals that cultural segments are far more common than actually diverse. This implies that we may be naive to think that we live in a pluralist world. I believe that we must look to the subtleties of our cultures and sub cultures in order to differentiate between them. Place often provides the clues to those subtleties. We may be composed of many individuals and certainly the conflation of several cultures, however, in today's society, these are not always discernible. In the urban metropolis, we are all hidden by the universals of globalisation and technology. Cities contain segmented societies, in which individuals retreat into safe and comfortable districts which contain others similar to themselves. One view is that segmentation is a necessary solution for the problems of coping with an extremely complex society. This idea of retreat parallels the sense of place on a personal level where persistence of the private single family dwelling offers

security, predictability, comfort and stability. According to Tuan, 1982, segmentation fosters a critique of the world around us, where it becomes more difficult to accept society's values and partake in its affairs. This breeds indifference and intolerance, and consequently, society becomes less cohesive as a whole and less objective in their views.

One may be no closer to finding a recipe for placemaking, however, overall, we may be getting closer to understanding some of its parts. Place has been identified as having several components which are all interrelated; continuously exchanging thoughts and feelings through the medium of our given landscape. Geographic location and physical environment combined with local culture and individual attachment are key elements in placemaking. Perhaps we must return to the natural landscape, as the physical origins of place, in order to find a model of shared beliefs and values, even if only regionally. If the physical environment is the basis, then perhaps ecological sustainability should provide the guiding principles to place making. Perhaps the landscape can provide us with the spiritual unity and the appropriate cultural symbols so lacking in today's public spaces. Resource availability through the physical environment are one of the few things that are shared among a social, regional group. Since placemaking begins at the landscape level, destruction of the environment and its ecological systems threatens to jeopardize the very backbone of a regional culture. The physical environment plays a major role in the establishment of place, upon which human settlements and social processes are layered. It is of paramount importance to include issues of the natural ecology of the area and to continuously express these sustainably, throughout the built environment. This concept, combined with all the facets of place, should be kept in mind when place making.



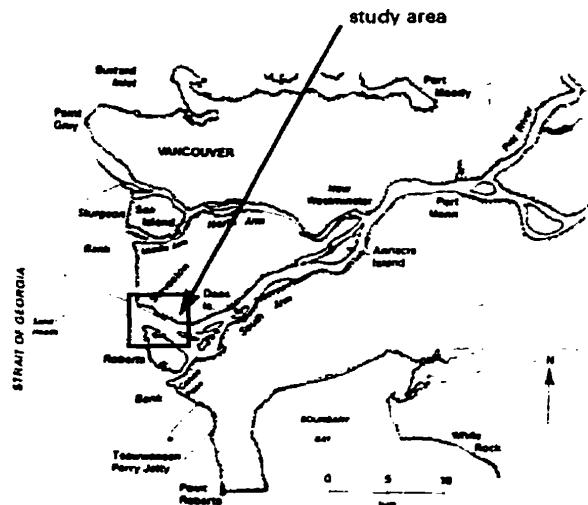
A floating residential neighborhood  
Lake Union, Seattle, Washington

the edge - a floating neighborhood  
**ecotone: Phoenix Cannery site and Phoenix Pond**

*"Ecotones: zones of transition between adjacent ecological systems, having a set of characteristics uniquely defined by space and time scales and by the strength of the interactions between adjacent ecological systems."*

(Holland 1988, Risser 1990)

The shoreline where the western most extent of the mainland meets the sea reveals a dynamic setting where energy exchange is continuous. Tectonic activity caused by the subduction of the Pacific plate in the Strait of Juan de Fuca with the lighter North American plate , and lateral movement along this strike slip fault continuously modify the processes between the land and sea. The water cycle; from evaporation in the ocean to precipitation on land and back to the ocean through rivers and streams, demonstrates an essential exchange. Sediment deposition laid down along the delta through alluvial processes is eroded and carried through waves and tidal activity. There is a constant give and take of nutrients, organic matter and sediment, that support the movement of fish and wildlife across this terrestrial/ marine boundary.



Map showing the Fraser River Delta  
Thomson, R. E.  
Oceanography of the British Columbia coast  
Can. Spec. Publ. Fish. Aquat. Sci. 56:291, 1981

Steveston is located along the main arm of the Fraser River within the protected manmade channel appropriately called "Cannery Channel". Nestled in the heart of the West Coast Temperate Rain forest, this site enjoys temperate summers(20° C), and mild winters, with temperatures that rarely dip below freezing (0 to 6° C). Annual precipitation is high, averaging 60-80 inches along the coast and increases inland as elevation increases. The bulk of the precipitation occurs during the winter months, from October to February. Snowfall is relatively rare, with < 2% of all annual precipitation falling in the form of snow. Winds are stronger during the winter months and generally blow on shore from the west. Summer winds are lighter, and are more affected by local sea/land breeze regimes. Summer storms are infrequent in this area, being diverted by a quasi stationary high pressure zone usually situated off the Coast. (Redmond & Taylor, in Schoonmaker & Bettina, 1997) Cloud cover along the coast is persistent, averaging 76% annually.

Surrounding the Steveston Cannery site are the coastal mountains which provide breathtaking views to the east while the Gulf of Georgia reveals vast, open waterscapes to the west. One can truly experience the feeling of being on the most westerly edge of the land as it meets the ocean.



Marbled Murrelet  
*Brachyramphus*  
*marmoratus*

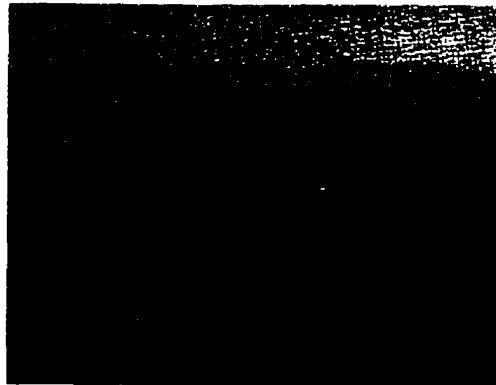
Exploring the Seashore p. 57

The Fraser River Estuary occurs where the freshwater of the Fraser River mixes with the salty sea water in the Strait of Georgia to create an incredibly rich and dynamic ecotone. This mixing zone is the key ecological link between terrestrial and marine ecosystems. The estuary consists of varying levels of salinity and temperature and water level gradients that may cover a large area, depending on tidal action and volume of river discharge. Estuaries and their Riparian forests are considered to provide the most diverse, species rich, and specialized habitats in the world. (Ward, 1980) The shoreline link is important in the regulation of nutrient cycles, contribution of woody debris, and in the structuring habitat for fish species. It also serves as an environmental filter to surface runoff that carry pollutants to the water. In addition, it provides habitat for animal species such as the Marbled Murrelets (*Brachyramphus marmoratus*) who breed and roost in coastal forest but are ocean foragers. Estuaries and estuarine marshes are extremely valuable in the habitat they provide for Anadromous fish species such as salmon and herring who require this transition zone as a part of their life cycle. This dynamic environment provides the key ecological transition between land and sea and from freshwater to saltwater.

Several influential processes are occurring simultaneously in the estuary, keeping this environment in a constant state of flux. Weather intensity and precipitation across an entire watershed will affect the volume of output into the ocean. This in turn affects turbidity and the amount of sediments carried with it. As the Fraser River slows down across the flood plain approaching the ocean, heavier sediments settle out first. As the river reaches the delta and confronts the large volume of ocean water, finer silts and clays are dropped. Sediments carry nutrients that provide a primary food source for microscopic organisms and algae that in turn, supply food for larger organisms. In addition, sediments deposited on shorelines create beaches, infills marshlands to promote the colonization of vegetation on mudflats. Sediments provide the land building material evident on the western most shores of Steveston (Sturgeon Banks) which is then modified by ocean tides and waves.

Turbidity caused by disturbance or large river outputs during spring melt can have negative consequences for vegetation and the organisms who depend on these primary producers for food and shelter. Turbidity reduces solar penetration and causes unstable soil conditions. Often the point of greatest turbidity (turbidity maxima) occurs at the innermost limit of saltwater penetration into the Estuary. Sediments play a key role in nutrient cycling. Low oxygen conditions below the sediment surface as well as bacteria and microbes regulate nutrient transformation. Sedimentation is valuable to zooplankton who play a key role in the estuary's overall food web. Other organisms are also able to exploit trapped particulate matter for food. Sediment deposition varies tremendously with the tides, and volumes of river output from place to place and season to season.

Due to the considerable gradients found along an estuary, it can be concluded that "an estuary is naturally the most fertile ecosystem in the world." (LMER Coordinating Committee, 1993 in Schoonmaker and Von Hagen, 1997) Rivers carry large amounts of nitrogen, that have been deposited through the atmosphere and precipitation, as well as through the leaching of fertilizers, and waste water discharge running through the watershed. Although nitrogen is essential for plant growth, excessive amounts can have a negative effects on an estuary's ecosystem. Algae and seaweed, who are the primary producers in the marine environment are sensitive to extremes in nitrogen levels. Accelerated growth of algae and seaweed beyond normal levels due to eutrophication, will reduce sunlight penetration through the water, eventually eliminating oxygen production, thereby choking out vegetation.



Tidal mudflats of the Sturgeon Banks on the western most extent of Steveston (Lulu Island)

[Explore The Fraser Estuary, p. 44](#)



Red Elderberry (*Sambucus racemosa*)  
*Plants of Coastal British Columbia*  
p. 70



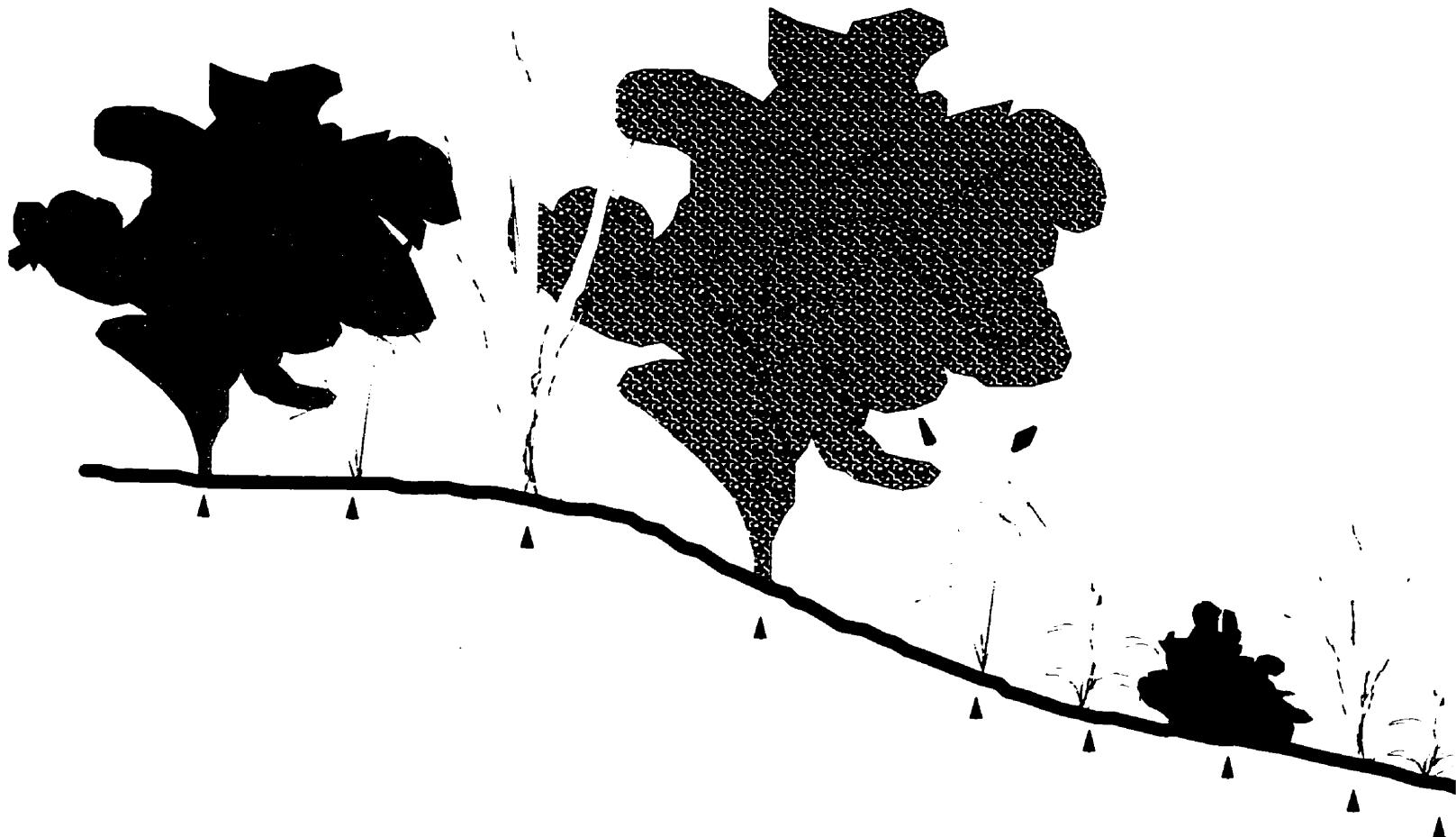
Sitka Spruce (*Picea sitchensis*)  
*Plants of Coastal British Columbia*  
p. 37



Riparian forests surrounding the Fraser River Estuary constitute a biologically productive ecosystem that increases in diversity and richness as one moves inland towards freshwater. Dominated by Western Hemlock (*Tsuga heterophylla*) and Douglas Fir (*Pseudotsuga menziesii*) and Sitka Spruce(*Picea sitchensis*), these riparian forests are key producers in terrestrial ecosystems and also play an important role in regulating aquatic systems as well. These forests play a key role in nutrient cycling, and acting as a filter for surface runoff. They contribute much of the organic and woody debris that travels down the river system and is used as food and habitat for smaller plants and organisms. Through their decay, they contribute nitrogen and other nutrients into the system. They can also cause negative destruction and disturbance when they drag across mudflats and marshes or batter against vulnerable coastal inter tidal zones. Shrub understory includes Vine Maple (*Acer circinatum*), Salmonberry (*Rubus spectabilis*), Himalayan Blackberry (*Rubus discolor*), Currants (*Ribes spp.*), Elderberry (*Sambucus racemosa* ssp. *pubens*) and Devils Club (*Oplopanax horridus*). Soils are generally silty clay and volcanic.

The most productive of maritime plant communities are found in tidal marshes such as the Phoenix pond. This pond is considered to be brackish (low salinity ) which typically are richer in species and more diverse than salt marshes. Soils found around brackish to moderately salty tidal marshes are generally nutrient rich, fine textured alluvial silts that will support lush meadow vegetation such as grasses and sedges. Dominant species includes Tufted hairgrass (*Deschampsia caespitosa*), and Lyngby's sedge (*Carex lyngbyei*). Other species include Pacific silverweed(*Potentilla anserina*), Spring bank clover (*Trifolium wormskoldii*), and Nootka lupine (*Lupinus nootkatensis*). Salt tolerant species includes Glasswort (*Salicornia virginica*), Sea arrow grass (*Triglochin maritimum*).

Salmonberry (*Rubus spectabilis*)  
*Plants of Coastal British Columbia*  
p. 76



Common Sweetgrass  
*Hierochloe odorata*

American Glasswort  
*Salicornia virginica*

Mud Di  
*Jaumea ci*

Few Flowered Shootingstar  
*Dodecatheon pulchellum*

Chaparral Broom  
*Baccharis consanguinea*

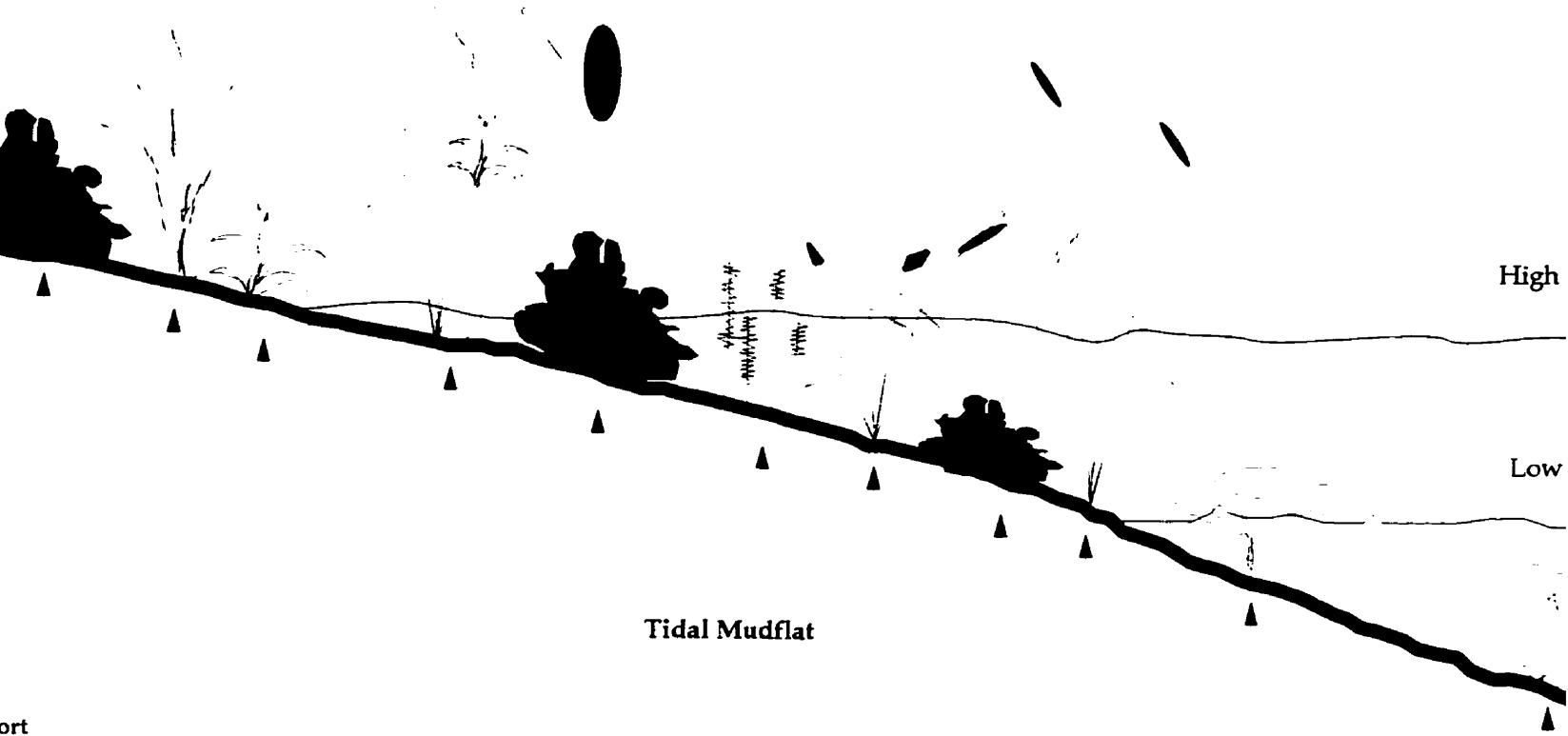
Meadow Barley  
*Hordeum brachyantherum*

Seashore Saltgras  
*Distichlis spicata*

Saltbush  
*Atriplex patula*

Gumplant  
*Gindelia integrifolia*





Mud Disk  
*Jaumea carnosa*

Seashore Saltgrass  
*Distichlis spicata*

plant  
*Selinia integrifolia*

Tules  
*Scirpus maritimus*

Canadian Sand Spurry  
*Spergularia canadensis*

Cord Grass  
*Spartina foliosa*

Common Mare's Tail  
*Hippuris vulgaris*

Pickleweed  
*Salicornia virginica*

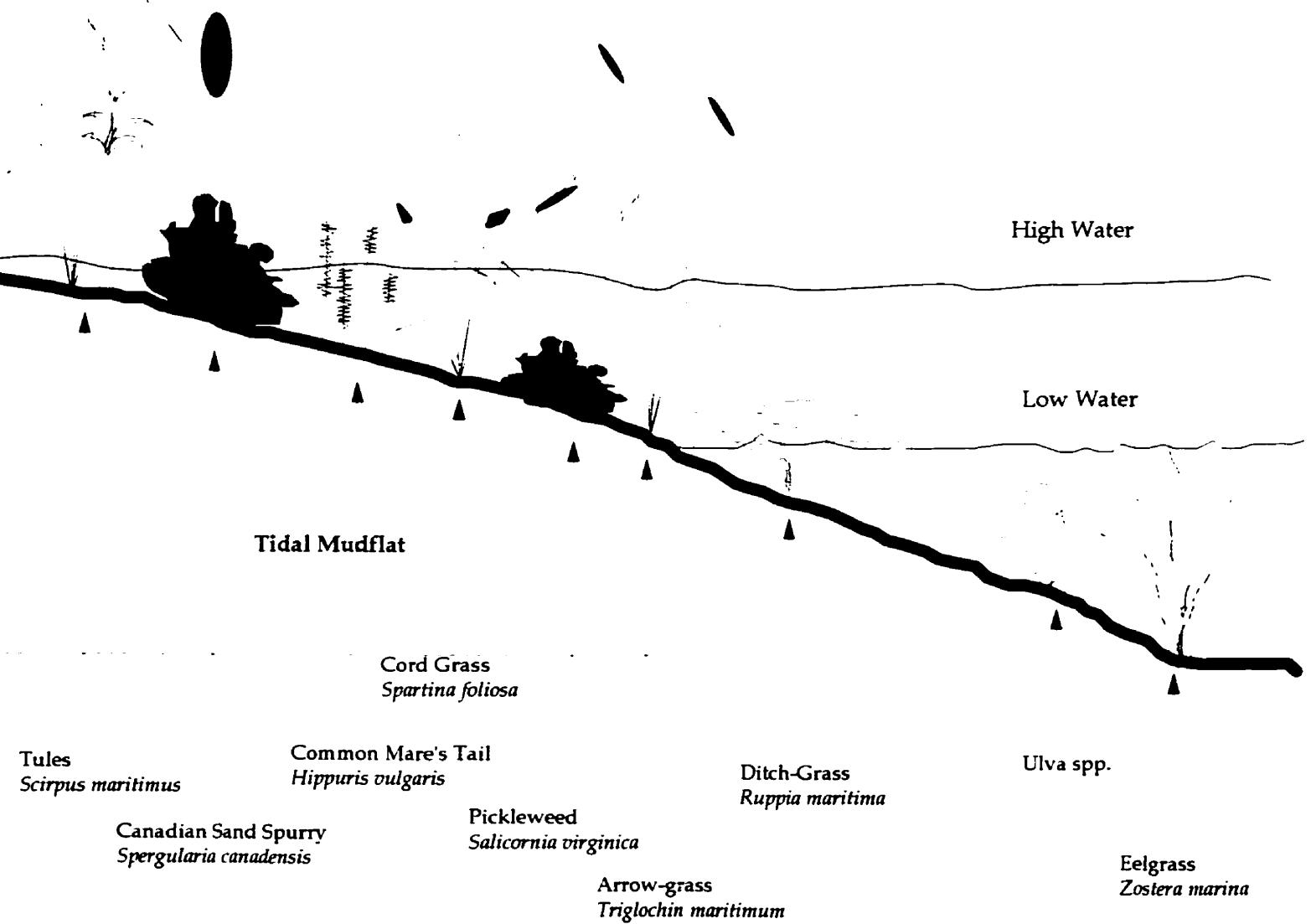
Arrow-grass  
*Triglochin maritimum*

Ulva

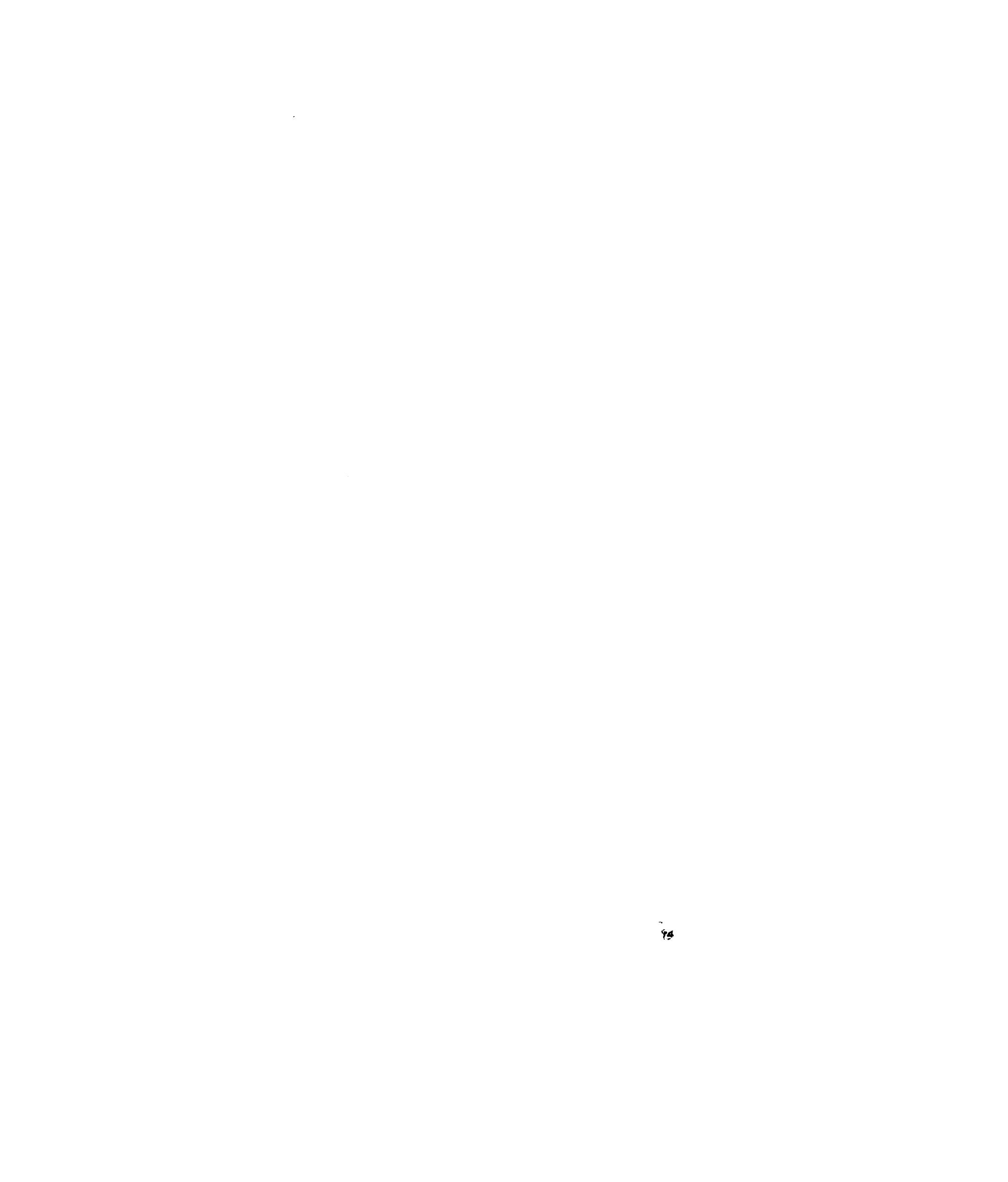
93

**TYPICAL BRACKISH**  
showing species associations and zona  
drawing not to scale





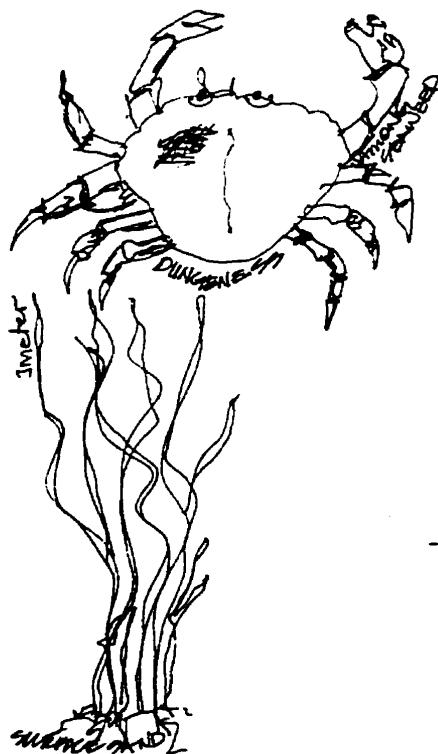
**TYPICAL BRACKISH MARSH**  
showing species associations and zonation  
drawing not to scale



Sea Arrowgrass  
(*Triglochin maritimum*)  
Seashore Life of  
the Northern Pacific Coast  
p.342



Snowy Plover  
(*Charadrius alexandrinus*)  
Exploring The Seashore,  
p.148

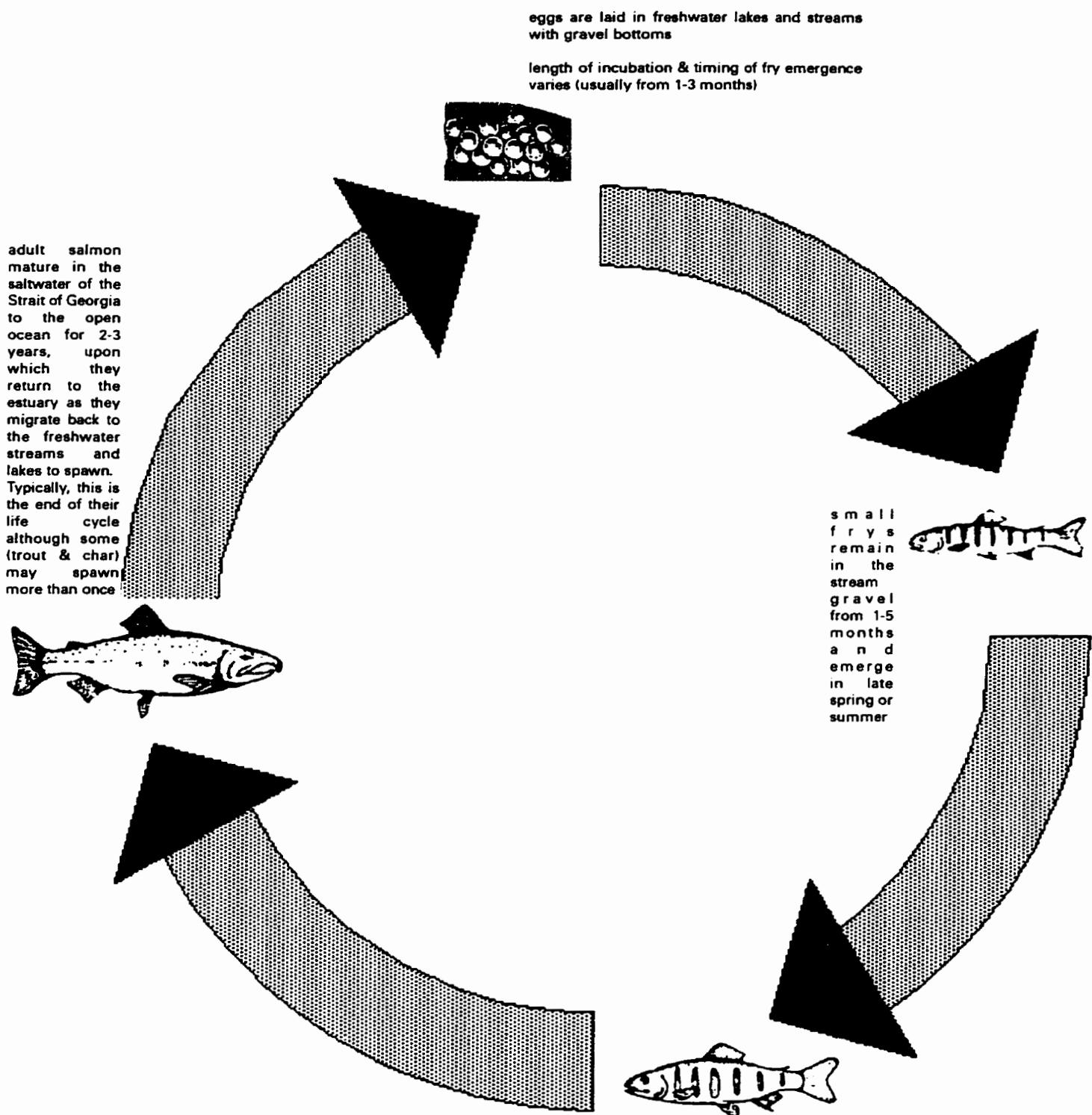


The presence or absence of aquatic vegetation is a good indication of the overall health of the marine ecosystem. Submerged meadows focus primarily on seagrass communities that include varieties of Sea Lettuce (*Ulva* spp.), Kelps such as Sargassum(*Sargassum muticum*), Sugar Kelp (*Laminaria saccharina*) and native Eelgrass (*Zostera maritima*). These species play key roles as primary producers, as well as in the protection, shelter and habitat of small Anadromous fish such as trout, char, herring and salmon species. They also provide food directly for diverse fauna and marine organisms. They stabilize the soil substrata, thereby improving water quality. Protection of plant communities at the shoreline , both above and below the low tide level is critical to maintaining the integrity of the two ecosystems.

These intertidal and subtidal zones are also important feeding grounds for dominant shorebirds such as Western sandpiper (*Calidris mauri*) and Dunlin (*Calidris alpina*) as well as several other species such as Terns (*Sterna* spp.), Great Blue Herons (*Ardea herodius*), Gulls ( *Larus* spp.), Cormorants *Phalacrocorax*, and Snowy Plovers (*Charadrius alexandrinus*). Tidal marshes and ponds provide habitat for overwintering and during migratory stopovers. Species such as the Black Brant (*Branta bernicla*) rely on eelgrass beds for overwintering, while Scoters ( *Melanitta* spp.) feed on mussels and barnacles found in the low tide zone.

Estuaries provide a unique, and extremely important habitat for Anadromous fishes that spawn in fresh water but migrate to salt water for a good part of their adult life. During a critical life stage, they must cross the ecotone, from freshwater streams to the ocean, where they must physically adapt to changes in salinity and grow in size in order to avoid being eaten as prey. These species depend on the protection and food source provided by tidal marshes and ponds . Salmon smolts, herring and green and white sturgeon along with crustaceans such as the Dungeness crab spend their juvenile stages lasting from 1 - 6 months in these nearshore habitats, often within a few hundred meters of the shore.

Eelgrass (*Zostera maritima*)  
A key species in saltmarsh communities  
supplies valuable habitat to dungeness crab



juvenile fish remain in freshwater lakes and streams for 1-2 years and begin migration to the ocean in spring or early summer.

Smolts will remain in the main distributary channels in the estuary for 1-6 months until such time as they have physically adapted to the salinity of the ocean and have become large enough to avoid becoming prey.

In the estuary, they feed on Pelagic (living in the open ocean) euphausiids, amphipods, decapod larvae, epibenthic amphipods, and shrimp varieties.

## LIFE HISTORY OF ANADROMOUS PACIFIC SALMONIDS

There are several gradient changes that occur along an estuary which support diverse biotic communities. Riverflow affects water temperature, pH and conductivity, changes as mixing in the estuary occurs. Physical gradients such as nutrient cycling and salinity are most influential in the specialization of species within the estuary, with some organisms becoming permanently established in stable and distinct part of the ecotone such as Sea Lettuce (*Ulva* spp.) However, all organisms in the estuary must be adaptable to fluctuating physical conditions and ranges of salinity. In mudflats, clams and worms burrow into the soil to minimize being washed away by sediment. By burrowing, they are also able to avoid extreme temperature fluctuations and abrupt salinity changes that occur at the mud surface. (Simenstad, Dethier, Levings, and Hay, 1997) Some species are transients, such as salmon, who use the ecotone as a transition zone where physical and behavioral adaptations must occur before they can survive in open ocean waters.



Sugar Kelp  
(*Laminaria saccharina*)  
Exploring The Seashore  
p. 102



Ghost Shrimp  
(*Callianassa californiensis*)  
Exploring The Seashore  
p. 188

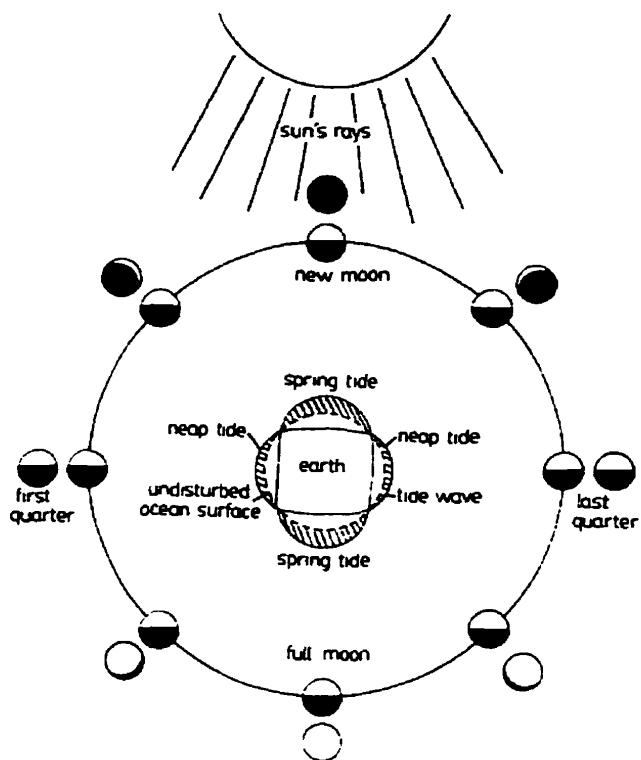


Heart Cockle  
(*Clinocardium nuttallii*)  
Exploring The Seashore  
p. 186



Mud Clam  
(*Mya arenaria*)  
Exploring The Seashore  
p. 187

Tides along the Steveston occur diurnally, with 2 cycles of high and low tides per day. Tide strengths are affected by the phases of the moon, with higher ranges of high and low occurring in the spring during full and new moons. Lower ranges between high and low tides, called neap tides, occur on half and quarter moons. Tidal patterns contribute to an abrupt ecotone along the shoreline. The back and forth movement of the water reveals period of full sun where drying may occur. These stresses on the shoreline are further complicated by irregular land features. Vegetation has difficulty establishing itself along this margin. In Steveston, the tides range from 4.9 m at the high water mark to .34 m. at its lowest point. This daily flux is spread over a 20 meter distance.

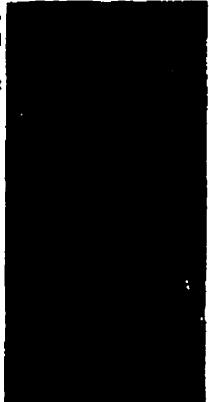


**tidal swings and lunar cycles**  
Caduto M. J. & ?*Keepers of the Earth*,  
Fifth House Publishers,  
Saskatoon, Sask. 1989 p. 114

The environment surrounding the Phoenix Cannery and Pond can be characterized as an agricultural flood plain with minimal riparian forest cover and brackish coastal tidal ponds, marshes and sloughs. Human disturbance has been the greatest influence on the ecological health of the area. The growth of the cannery industry along with recent population increases in the Vancouver area, have transformed the terrestrial landscape and modified the coastline considerably. Most of the riparian forest along the cannery channel in Steveston have been eliminated in favor of light industrial development. Many were harvested and used for fuel in the canneries as well as for heating and as building material during early settlement years.

Purple Loostrofie (*Lythrum salicaria*)  
A wetland weed

Plants of Coastal British Columbia p.318



FREMP



Oyster Drill (*Ocenebra japonica*)  
It uses its specialized radula to drill a hole through the shell of oysters & other shell fish

Exploring The Seashore, p.184

Japanese Oysters (*Crassostrea gigas*)  
oyster seed imported from Japan in  
the early 1900's brought with it, the  
oyster drill

Exploring The Seashore, p. 182



The surrounding diking system has eliminated much of the natural disturbance in the area, flooding is no longer considered a major problem, however there still exists a threat of major earthquake. The multiple roles that seagrass communities carry out are good reasons for restoring and improving them. Recent research by (McRoy and Helfferich, 1977) and (Fonseca, 1994) have successfully transplanted seagrass communities where they have been used to stabilize sediments after dredging and to reestablish damaged eelgrass beds. Exotic plants such as Purple Loostrofie and exotic marine life such as Japanese oysters continue to threaten native species however, steps are being taken to prevent further spreading. Steveston enjoys active community involvement in monitoring, cleaning up and restoring habitat with its Lower Fraser Estuary Stewardship Program. Steveston also boasts a non-profit Coastal Communities Conservation Society who are vigilant with regards to any new development along the coast. With several canneries moving their operations away from Steveston, opportunities arise to rehabilitate the natural environment. Residential development still poses a threat, however with careful planning and management, the resources that have inspired a human attachment to this place, such as the Pacific Coast Salmon and their habitat, can be protected from significant human impact.

Processes occur over time scales that are much greater than human time frames, making it difficult to fully understand the complex interaction of all influencing factors. Management of estuarine and coastal marsh habitats are difficult to monitor, since they are affected by so many variables. The best management techniques for estuaries and coastal marshes begin at the watershed level, where pollutants, including waste, should be reduced. Riparian buffers and inland marshes that serve as filters should be protected and enhanced. As well, the removal of exotic species, such as Loostrofie, throughout the watershed will go along way in promoting healthy ecosystems in the estuary. It is difficult to prevent any further development in the area, since pressures on available land in the Vancouver area are persistent. However, environmental protection groups, such as the Fraser River Estuary Management Program (FREMP) and other stewardship groups are actively monitoring any proposed development in this sensitive ecotone.

Wednesday, August 20, 1997 **News**

# **Blaze hurts Phoenix's chances of rising to former glory**

## *Cigarette blamed for Steveston fishery fire*

By J.L. Adams  
CONTRIBUTOR

W<sup>hat</sup> the heck! That's the question I asked myself after reading the following statement from a 1944 issue of the *Standard Oil Co. of New Jersey* magazine:

"There are  
several  
ways of  
marketing  
gasoline,  
etc., etc.  
Petroleum  
companies  
have  
the usual  
Company and  
Marketing  
Company for  
the production  
and marketing  
and sales  
and the  
"Big  
Boys"  
are  
in agreement  
as to what  
they have to do to make  
money."

The far-out theory  
of a "marketing committee"

that supports the building  
and maintaining of  
gasoline stations.

For the speeded up  
expansion of the building  
and sale of wells, com-  
panies have been  
using their own  
underground tanks,  
thus making  
only the trans-  
portation and  
distribution of  
gasoline available  
to gas stations.  
Gasoline sales  
have gone  
up 100% in  
the last  
four years  
because  
of the  
increased  
use of  
Petroleum  
products  
and/or  
engines.

Now, back to  
the year 22, 1944.  
Aldredge  
is of the opinion  
that the oil companies  
will be forced to  
market at 12.50 per  
gallon, unless  
they will compromise  
with the oil companies  
and the oil companies  
will give up their  
present 100% control  
of the oil market.

ONE WEEK AGO, the century-old Prairie Cemetery was the subject of a Saratoga community debate as to whether or not to raze it, as the cemetery is underdeveloped. Following Sunday afternoon's fire, which consumed part of the red brick arched gate, the building's chances are slim, *(photo courtesy City of Saratoga Springs)*

department and SC. Perkins helped the team move the vines helping the land work out from there without much.

Perkins has been documenting names of the vine

Several proposals have been submitted by various groups and firms on the site, ranging from removing the entire site to turning all the land buildings down.

The few people would

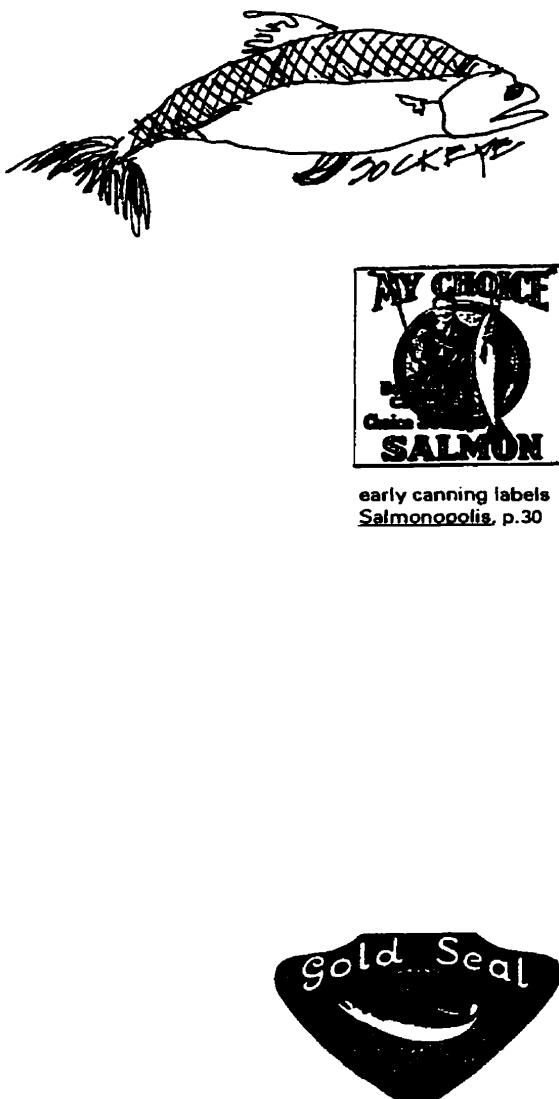
"I would like to have a lot of books at all. It would be expensive."

The pottery by Fenton  
is in regular use at  
the school because it  
is durable and  
attractive. That includes  
the pottery made by  
the students using  
clay and glazes.

"We're seeking new opportunities," he said. "We don't want to undermine any business dealings or other interests."

## **three: site analysis**

the edge - a floating neighborhood  
history of Steveston and cannery channel



The Steveston area boasts a rich heritage, owed primarily to the fishing and canning of Pacific Sockeye Salmon. Sockeye Salmon have a unique behavior which helped to shape the early development of the cannery industry along the shores of the Strait of Georgia at the mouth of the Fraser River. The town of Steveston, B.C., sprang up during the fishing boom years in the late 19th century, and had developed primarily from its unique geographical location. Early developers billed Steveston as the new "Coming Town of B.C."; as a place which has been "Designed by Nature". (Ross 1979) It was apparent even to early settlers that this was to be an interface between social and environmental processes. The proximity between the freshwater of the Fraser River and the deep water marine characteristics of the Strait of Georgia, has provided an estuarine environment, and the perfect conditions for supporting Red Sockeye Salmon, and other fish. It is precisely this unusual environment and geographical location that has inspired a "place" called Steveston, with a individual character unlike anywhere else in the world.

Sockeye migration is based on a four year cycle, made up of one dominant year, followed by a subdominant year and two "off" years. After hatching in stream beds or along lake shores, the young salmon spend one to three years in freshwater lakes before migrating to the ocean. They mature in their fourth or fifth year and migrate back to their origins in the streams and lakes along the Fraser where they spawn along the way. The migration period back to the Fraser River, begins in June and continues only until early August. Fishermen intensively harvest the Sockeye at the mouth of the Fraser during this brief period, as they begin their migration. This phenomena was predictable even though the number of fish returning to spawn varied.

The most productive years for the canneries were between 1885 and 1909, where 49 canneries operated along the Steveston waterfront, causing it to be renamed as the Cannery Channel. During this time, Steveston was the number one fishing and cannery port on the west coast. Since then, dwindling fish stocks, changes in technology, and the move away from shipping have forced the closure of the majority of the cannery operations, with the latest closure of the B.C. Packers Imperial Plant, occurring in the last few years.

The Phoenix Cannery was the first and one of the largest canneries to spring up along the Steveston waterfront. Built in 1892 by Marshall English, it burnt down in 1895 and was rebuilt in 1897 only to have burnt down a hundred years later in August, 1997. During its operation, it was a significant influence in the evolution of the social and geographical history of the town, sporting the second telephone in the community and being an important navigation point prior to the existence of the manmade, mile long breakwater called Shady Island. The Phoenix cannery was also the site of a riot in 1895 by the Chinese cannery workers , precipitated by racial prejudice.(Duncan, 1986)

Barbara Heeren recalls stories from her early days at the Britannia Shipyard.

*"I felt that there was a stigma to living here, I had to overcome it. Anybody that lived around the fish boats and the dike we were looked down upon by the people in Richmond that were farming people. I don't know what they thought, what kind of a life they thought we had, but it definitely wasn't good. It was hard. Anything to do with the fish canneries and the boats; you had to overcome that if you were going to get anywhere with the farm people."*

(Clayton et al., 1992, p.31)



Cannery workers housing  
Salmonopolis, p. 33

Father Manoah Steves was Steveston's first true European settler, changing the name from Lulu Island around 1887. His son Herbert Steves, who bought substantial property, laid out the town lots, opened an opera house and began the Steveston Enterprise newspaper which printed until 1894. A small village sprang up to support the seasonal population of cannery workers and fishermen. Included was a church, several saloons, fishing and netting supply stores, an opera house and retail shops. A thriving community emerged due to the success of the canneries. Farms were established about this same time, creating a more stable and larger population base.

Steveston continues to enjoy a rich cultural mosaic, retaining its original make up of Chinese, Japanese, Salish (Aboriginal), and English settlers. The Japanese immigrants made up the largest percentage of the population when the canneries were actively at their peak at the turn of the century. They primarily held positions as boat builders and fishermen. Aboriginal men fished while women of all nationalities worked in the canneries. Chinese men and women made up most of the cannery crews; working for lower wages than the English (white) workers. Racial discriminations were highly evident among the Chinese, Japanese and Aboriginal, and in fact, everyone who worked in the canneries were negatively viewed by the farmers in the same region. The outside prevailing image of Stevestoners was not very positive, they were referred to as "mudflatters" and knew that under those conditions, it was hard to get dressed up and stay clean.

Work was seasonal, and fit well with Salish lifestyles who followed and observed salmon cycles, however, they were not entirely reliable, opting to work for a daily wage so they could maintain their freedom to move about as necessary in order to sustain their tribe. Eventually, they were replaced with Chinese workers who were willing to work under a contract and were paid usually at the end of the season.

Annual flooding was prominent and expected in the early years of Steveston. Chines labor helped to build permanent dikes initiated by early residents and thereafter handled by the municipality. Boardwalks and plank roads, that were eight feet wide, helped improve conditions around flooded areas. Along with the accelerated growth of any new town, one could expect to find the infrastructure rather underdeveloped.

Annual flooding was prominent and expected in the early years of Steveston. Chines labor helped to build permanent dikes initiated by early residents and thereafter handled by the municipality. Boardwalks and plank roads, that were eight feet wide, helped improve conditions around flooded areas. Along with the accelerated growth of any new town, one could expect to find the infrastructure rather underdeveloped. Typically, higher levels of traffic, water and sewage that accompanied an influx of people were often the last things to be addressed. Steveston was no exception to this, experiencing shortages of fresh water supplies and health problems among non whites due to living conditions.



Steveston 1908  
Salmonopolis, p.32

By World War 1, the boom that had sparked the town, had dwindled, however a legacy of development had already been set. The canneries adjusted economically and technically to the reduced supplies of sockeye , becoming automated and reducing manual labor. Several canneries had closed down, and over 50% had been bought out or amalgamated into the B.C. Packers Imperial Plant.

The "Sockeye Express" interurban tram began 1902. As a secondary means for transporting salmon from Steveston to Vancouver, twice daily until 1958. Children took the train to school and Richmond residents used it to get back and forth to work. Popular on weekends to go to Vancouver theatres, and as well, Vancouverites came to the Steveston opera house. This had an impact on the development within Steveston, by shifting the focus for shipping and marketing to Vancouver. Plans to turn Steveston into a major shipping port failed with the onslaught of World War I .

*"...From its situation and shipping facilities Steveston will develop into a town of some importance...A large number of lots have been bought there on building conditions, and even now, owing to its being the headquarters of the fishing operations, it is a very busy and thriving little place. Many of the fishermen live in houseboats, which they move from place to place, but as most of the fishing is done at the mouth of the river, this is the most convenient place for them to live..."*

*(Williams British Columbia Directory, 1891, found in Salmonopolis, 1994, p. 39)*

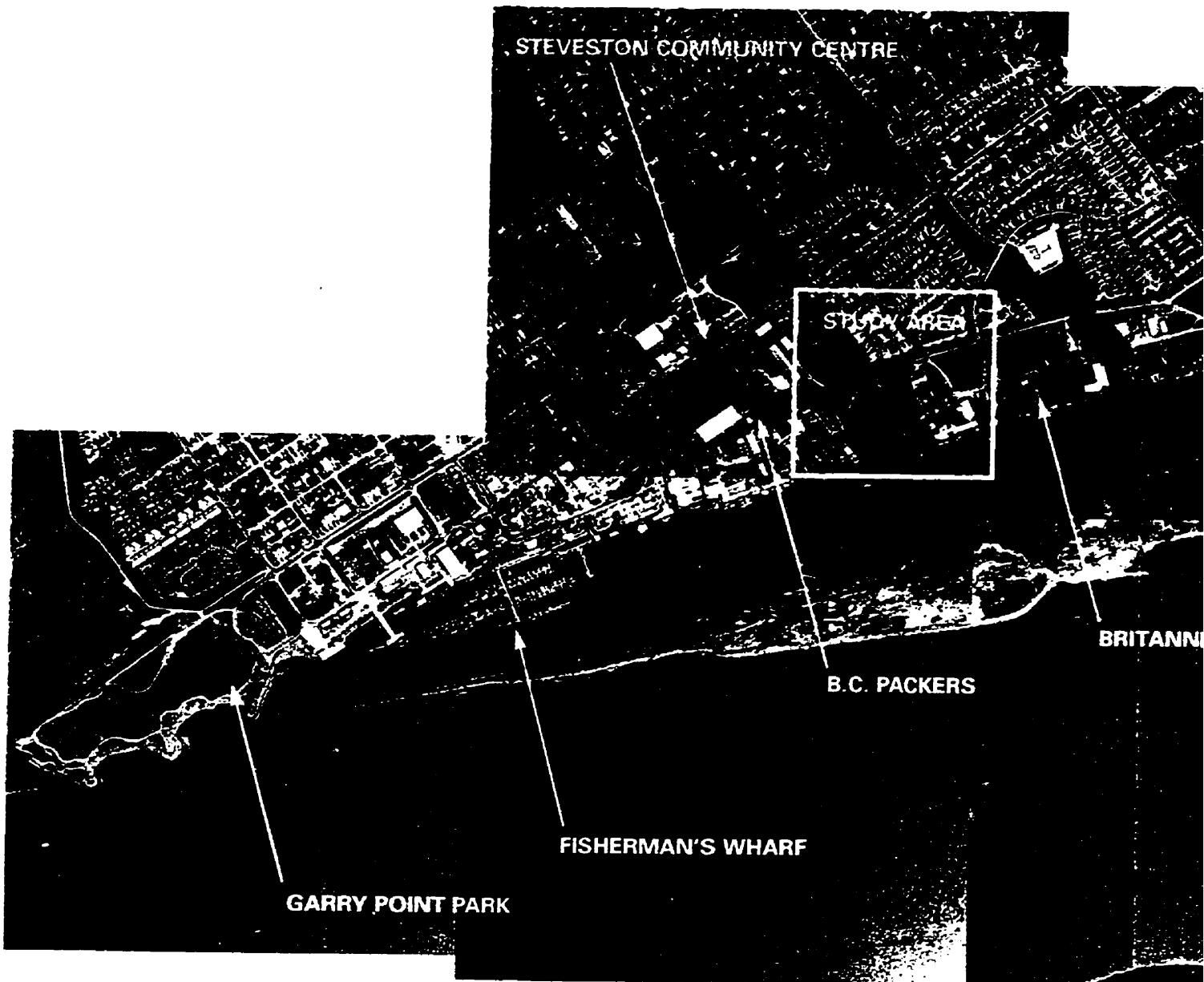
World War II revived the fishing industry with demands for oil products and canned salmon and herring. After World War II, Richmond grew substantially as a Vancouver suburb. New transportation links spurred intensive internal growth.

Those dedicated to the preservation of their unique community and heritage founded the Steveston Community Society in 1944. Since then, several community groups have been organized to preserve and enhance the unique regional quality of this town. These include a long list of environmental, historic, cultural and harbor authorities. Prior to the fire in 1997, the municipality was involved in a debate as to the fate of the old Phoenix Cannery site and outbuildings. As a part of the B.C. Packers real estate, many of the old buildings were in bad repair, requiring substantial amounts of money to bring them up to today's fire and safety standards. In a way, the fire that destroyed the Phoenix put an end to that debate. Today, it appears that the community and municipality have committed themselves to the preservation of the heritage of Steveston's Cannery Channel and are currently working on a study and long term plan for all future development.

The waterfront along the Cannery Channel has a rich heritage which should be preserved to enhance Steveston as a unique place. Its unusual geographic location on the edge between the Fraser River and the Pacific Ocean has provided a unique setting and rich resource for the development of a social community. The interaction between the environment and human processes have shaped a canning industry into a thriving community with a rich historic background. This constitutes the essence of place, and therefore one must be sensitive towards its redevelopment.

canneries along Steveston's waterfront c. 1913  
Salmonopolis, p.34







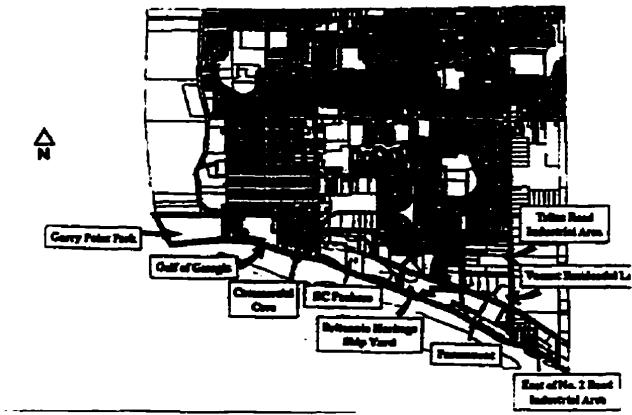


BRITANNIA HERITAGE SHIPYARD

## STEVESTON SHORELINE

the cannery channel and Steveston Island





Phoenix Cannery



Cannery boss' house



Netloft building



power lines through site

Located only 20 minutes from downtown Vancouver, on the waterfront in Steveston, this residential location could be desirable from several perspectives. The Phoenix Cannery site, on the B.C. Packers property, offers opportunity for redevelopment of the site that is both ecologically rehabilitating, as well as culturally, and historically 'fitting'. The site boasts a rich historic component that presents an opportunity to augment the design and promote a continuation of place in the Steveston area.

### Existing Buildings

Several large buildings belonging to the Phoenix Cannery complex were constructed at various times throughout the life of the cannery. The original cannery complex, currently in ruins is beyond repair. The two newer warehouses built in 1955 offer approximately 875 sq. meters of storage space that could effectively be reused in the floating home context. A smaller storage building located on site is in bad repair and holds no significant historic position within the cannery complex. The netloft building built after 1943 has historic significance to the cannery complex as a location for drying, mending and storage of fishing gillnets supplied by the cannery. The building is in fairly good repair, and could be restored and reused as a shared workshop and laundry facilities. The important cannery 'boss' house could take on a new position within the floating community as an administrative office and meeting centre, where residents share in the decisions that affect their neighborhood. The original character and charm of these old buildings could be restored as they take on adaptive roles within a new context.

### Infrastructure

A power line which enters the site at Westwater Dr. is visible. This once provided power to all but the netloft and a few minor outbuildings for cannery operations. Information on the location of underground utilities such as sewer and water is not documented by the municipality and would require further research if the project was to be taken beyond the conceptual level.

## Community Amenities



Fisherman's Wharf in downtown Steveston offers waterfront enjoyment for the local community and tourists.

It has been recommended that floating neighborhoods, in general, be located within close proximity to other residential areas and nearby services. A study of adjacent land uses reveals several nearby residential zones that include single family, one and two storey townhouses and high density, low rise apartments.

Since 1997, a group of consultants have been studying the adjacent B.C. Packers site for recommendation to the Richmond municipal planning office. A series of public meetings have been held and although a firm proposal has not been submitted, the proposed redevelopment appears to be favoring a medium density townhouse development which would further enhance the location of the floating neighborhood.

The site is located within 10 minutes walking distance of the commercial core. Additional amenities include the Britannia Heritage Shipyard, a popular tourist attraction, located immediately east of the site. Two schools are located just north east of the Britannia Heritage Shipyard, also within walking distance of the Phoenix site. A nearby community centre and recreational green space serves this location.

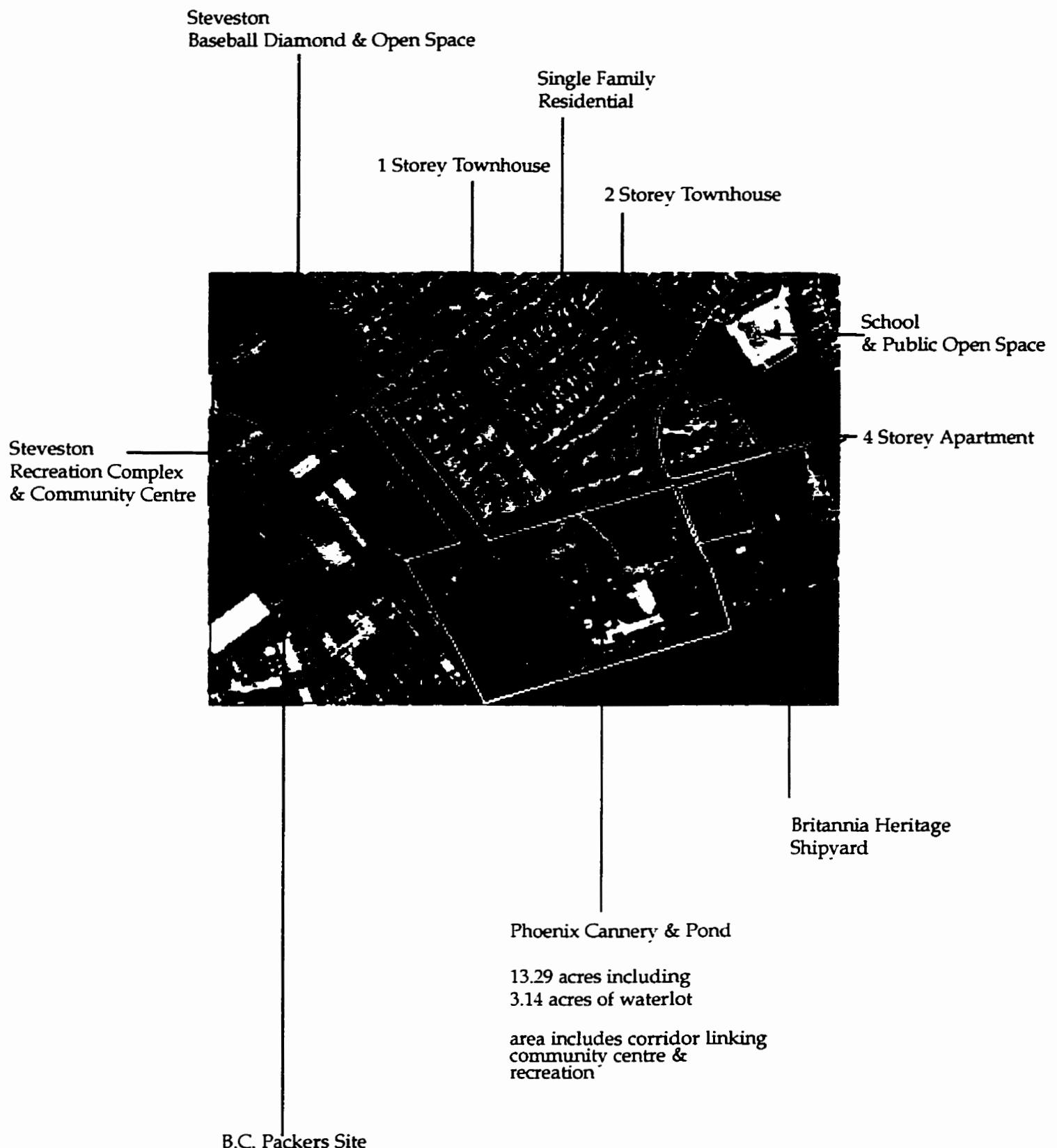


Bike/pedestrian trail adjacent to Westwater Dr. This trail is part of the Richmond Island trail network that continues northward to Moncton Ave.

Richmond has an extensive island (bicycle & pedestrian) trail system in place. There is an opportunity to create green corridor/bicycle and pedestrian links with these amenities through a re-alignment of a portion of the Richmond trail that follows the dike.

A vehicle access road is already in place off Railway Ave. at Westwater Dr. Public transportation is available on Moncton Ave. which is within a five minute walk from the Phoenix site. In general, the site is well situated within the community, and close to all services.

The Steveston waterfront, along Cannery Channel, is relatively cut off from public access with the exception of a few places. This is due in part to the industrial development there, which once served as the hub of the town. As these industries are relocated, re-development plans could open up the waterfront to greater public access.



## Site Analysis adjacent land uses

## Topography



nets drying on site in front of an old building in poor repair



Phoenix Pond  
view from Westwater Dr.



mouth of Phoenix Pond  
view from B.C. Packers property, note Phoenix cannery in the  
distance

Steveston is a part of the Fraser Lowlands, a delta consisting mostly of low lying, agricultural lands rich in sediments deposited by the Fraser River. The general topography of the site is flat and marginally above sea level. Drainage could be a concern, given the high levels of precipitation and high water table in this area. Westwater Dr. appears to be the highest point on the site .

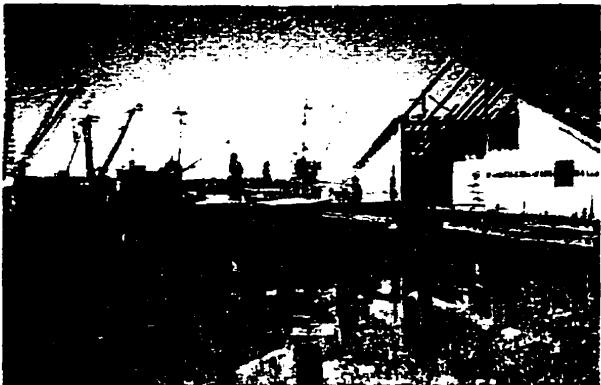
## Phoenix Pond

The Phoenix pond area is an ecological concern. Its importance as fish rearing habitat demands that particular sensitivity to nearby development be observed. The FREMP (Fraser River Estuary Management Program), has designated this pond habitat to be highly productive; coded red. Guidelines for development in red coded shoreline areas are strict and must demonstrate no habitat destruction.(see appendix 2 for complete code descriptions) In 1992, FREMP suggested cleaning up of the debris within the pond and conserving or enhancing the vegetation buffer which surrounds it. Vegetation is typical of brackish marsh/grass communities and appears healthy. The following page provides a typical cross section of a tidal wetland. An actual profile of the shore was not taken. Currently, the Phoenix pond is inaccessible except by boat, being surrounded by chain link fence and thick blackberry shrubs.

## Vegetation

The site contains very little coverage by natural vegetation. The vegetation surrounding the Phoenix Pond remains in tact since it has been protected by chainlink fence. The remainder of the site consists of asphalt and gravel paving with few clumps of deciduous trees and shrubs. Shrub vegetation consists mainly of Blackberry thicket. Typical grassland occupies a significant portion of the upland, consisting mainly of wet to wet/mesic communities Almost no riparian vegetation exists in front of the Phoenix cannery and Netloft buildings.

## Foreshore



Foreshore areas showing pilings from previous cannery buildings



southwest docking platform



view from the southwest side of the Phoenix Cannery



potential green corridor link to Moncton Ave. from the Phoenix Pond

A retaining wall remains in tact along the shoreline and several piles remain in the intertidal zone from previous buildings and wharves. These now provide habitat for seaweeds and invertebrates such as sponges, hydroids, sea anemones, tube dwelling polychaete annelids, barnacles mussels and ascidians. These also have heritage significance and add to the character of the site.

## Opportunities & Constraints

The Phoenix Cannery site and pond offer great potential for redevelopment into supporting uplands for a floating neighborhood. Its rich heritage and proximity to town services makes it ideal for residential redevelopment. There is an opportunity to link the floating neighborhood to the town through separate vehicular/pedestrian networks that support the town's existing system. The historic cannery buildings offer several possibilities for reuse in support of a floating residential neighborhood.

The Phoenix Pond demonstrates a healthy ecosystem that could be opened up to the public as an interpretive park, providing that minimum disturbance occur to the surrounding habitat. It represents an important amenity to the residents of the floating neighborhood as well as the community of Steveston as a whole. Shoreline habitat throughout the remainder of the site is in need of restoration in order to improve the overall health of the shoreline and positively impact the river system.

Although the site offers sufficient upland area to support the floating neighborhood, the corresponding waterlot is limited. This may pose a problem in achieving a high enough density of dwellings so as to be economically feasible. A lower density development however, is beneficial to the aquatic environment, as it would provide less water coverage and therefore allow greater sunlight penetration overall. A floating residential development is likely to slow the flow of the river through Cannery Channel and increase sedimentation, however, since the channel is manmade, it will require periodic dredging, over the long term.

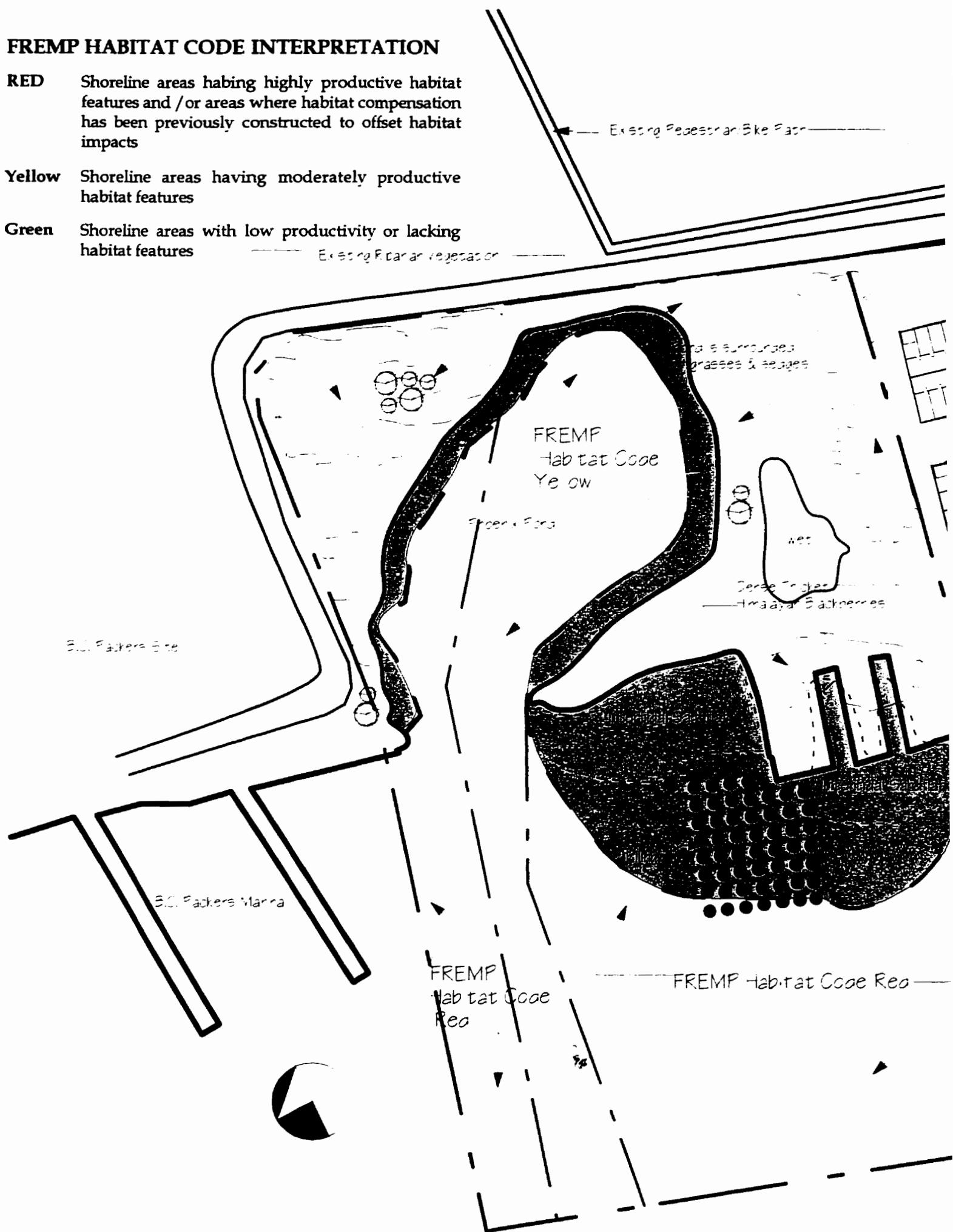
Overall, the site and adjacent community of Steveston, offers amenities and benefits that would be desirable in the consideration of a residential development.

## FREMP HABITAT CODE INTERPRETATION

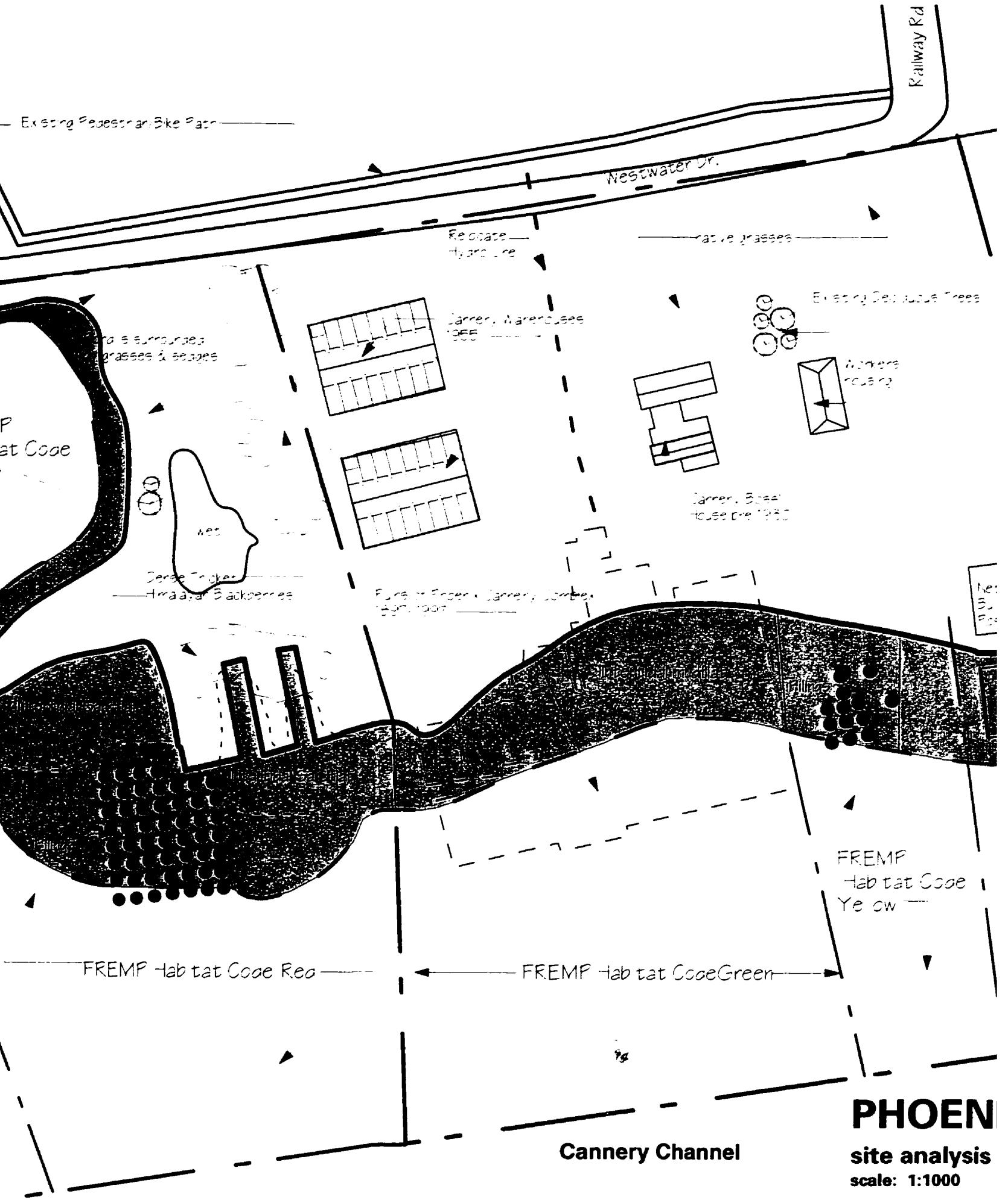
**RED** Shoreline areas having highly productive habitat features and / or areas where habitat compensation has been previously constructed to offset habitat impacts

**Yellow** Shoreline areas having moderately productive habitat features

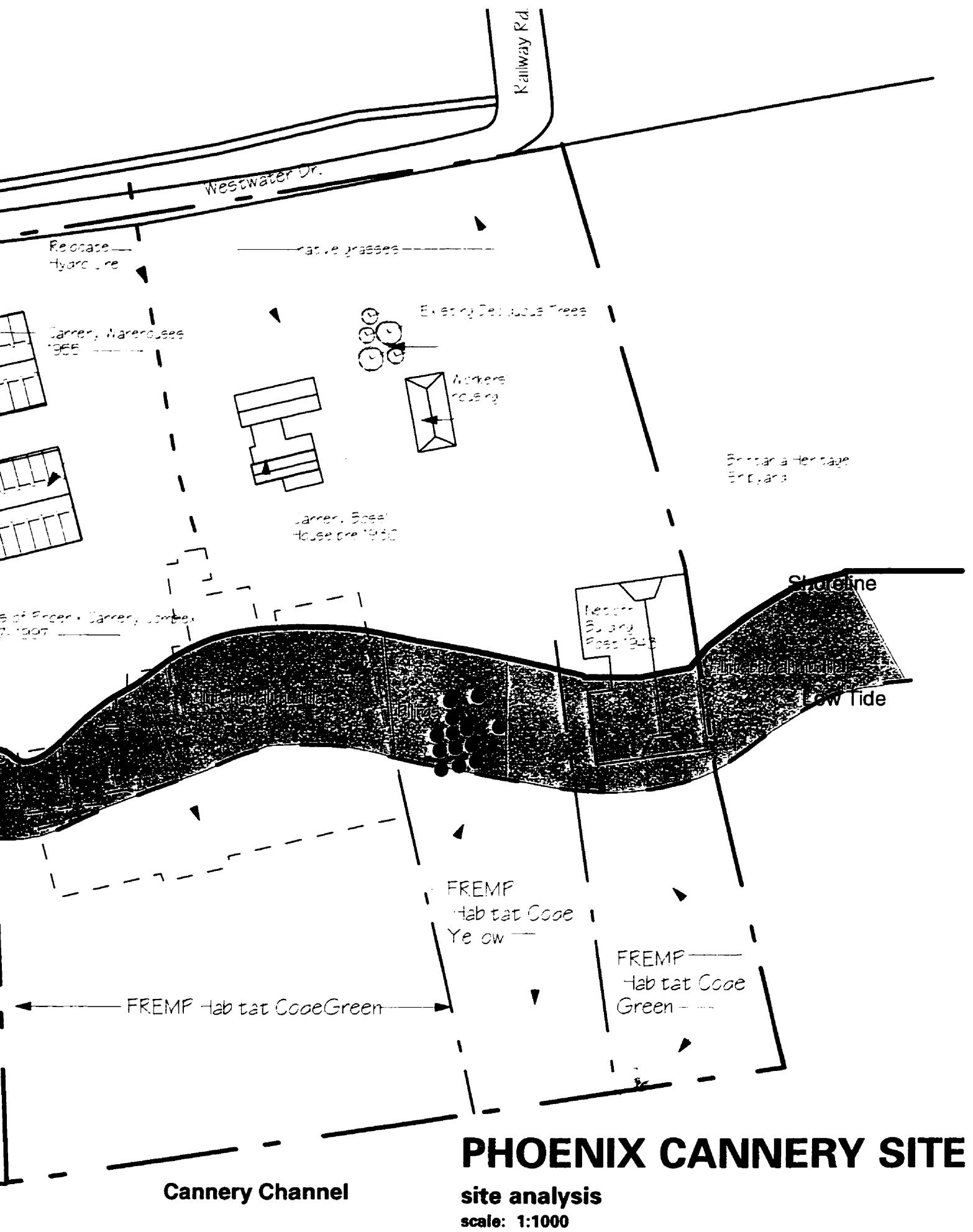
**Green** Shoreline areas with low productivity or lacking habitat features



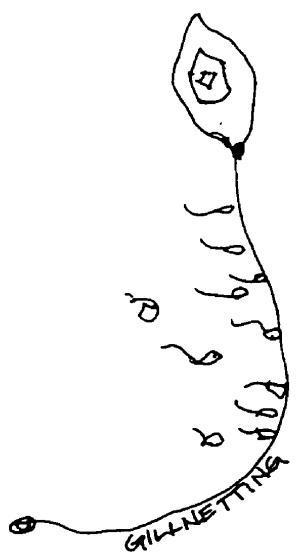












## four: survey

the edge - a floating neighborhood  
**float home demographics and survey results**

#### **Intent**

In response to the limited availability of current, local information regarding float home living, it was decided to conduct an original survey of Canadian west coast float home dwellers. This voluntary survey was intended to provide general and specific information regarding the demographics of float home dwellers, as well as their preferences on upland services and facilities which could be incorporated into a design for a new community. The survey also hopes to reveal aspects of residential permanency, and resident responsibility which appears to be grossly misunderstood by mainstream society. Questions were developed in order to obtain general information about which aspects of float home living are important and which are not, that would hopefully lead to a more informed design. Some questions are intended to solicit emotional responses which reveal the value of the setting and importance of community attachment.

#### **Methodology**

A small sample for this survey was randomly selected from those who would have reported living in "Other Moveable Dwellings" in B.C. According to Census Canada, an "other moveable dwelling" is defined as a "single dwelling; permanent place of residence; capable of being moved quickly; and is other than a mobile home". This includes tents, RV's, travel trailers, liveabards and float homes. Unfortunately we cannot estimate accurately how many float home dwellings exist in Canada, however we do know that 10, 550 other moveable dwellings were reported in B.C. This ranks third in Canada, with Nova Scotia being the highest with 13,930 other moveable dwellings and New Brunswick with 11,825. These statistics are high relative to their respective populations, and in relation to other Canadian land locked urban centers such as the Toronto Metro Municipality who reports only 115 other moveable dwellings. (Census Canada, 1991) Provinces with temperate environments such as Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, and British Columbia for example, accounted for 28,690 or 60% of the total 47,440 other moveable dwellings in Canada. (Census Canada, 1991) This suggests that liveabards and float homes could account for a large portion of the total other moveable dwellings reported in Canada.

According to the Pacific Floating Home Association, Vancouver, B.C., their membership consists of approx. 120 households in the greater Vancouver area. It was decided to limit the distribution of the survey to this area, where membership is concentrated. Although the association's range includes all of British Columbia, Vancouver Island is run by a separate branch. The association's membership includes liveaboards, and so the survey was limited only to those living on float homes. It was requested that only one survey be completed per household. It is important to note that not all people who live on float homes are members of the Pacific Floating Home Association.

Fifty surveys were randomly distributed through John Francis and the executive of the B.C. Float Home Association in April, 1998 at their Annual General Meeting. From this initial distribution, only 16 were returned indicating a 32% participation rate. The following is a compilation of that information. An additional 50 surveys were recently distributed through a mailing by the B.C. Float Home Assoc. during May/June 1998. To date, eleven more have been returned. Although, the responses were similar to those already received, the results are not reflected in the following results. In total, 26 of 100 surveys were returned, indicating approximately 25 % return rate.

A series of 26 open ended and forced choice questions were developed into a written survey (attached). A self addressed stamped envelope was included with each survey to make it convenient to return with the hopes of achieving a higher response. It was noted that the respondents could include their name and address only if they wished to know the results of the survey or have further correspondence with the author. Additional space was provided for comments, where some people provided photos, stories, general interest in the results or to elaborate on some aspect of the survey. Many offered references related to float home living, and telephone numbers where they could be contacted for more information.

## **Results**

Of the 16 households that responded to the survey, 6 have lived on float homes for over 10 yrs., 5 in the 3-10 yr. range, 3 in the 1-3 yrs. and 2 less than 1 yr., indicating that once people have made the decision to live on a float home, they usually stay for the long term.

Most appear to make the lifestyle choice in their 30's and 40's. Usually those who indicated residing on a float home for over 10 years, are now at later life cycle ages, (retirement age). Only one household indicated that they had always lived on a the water, either in a float home or on a sailboat.

Approximately 30% of all responses came from those in the 55 yr. + age range, although only 3 were retired, indicating an active, aging population.

Seven households (43%) indicated some form of self employment and two were marine related. Four households indicated their marine background or that water was their first attraction to float home living.

Six (37%) of those returned, indicated a stronger emotional connection to the sea, while eight (50%) felt equally attached to the land and sea. Of the two people who felt a stronger emotional connection to the land, one indicated that they intended to return to a typical land lot in the near future.

Overwhelmingly, 14 (87.5%) of 16 surveys returned indicated that they were nature lovers . Of the two who indicated they were not, interestingly, also indicated a closer emotional tie with the land. This indicates that the environment and setting below the shoreline at the water level must be distinctly different from living on the land at the water's edge. This is confirmed by one of the responses to question #11 (Why did you choose to live on the water as opposed to living on the land at the water's edge?) where the respondent replied " Enjoy the sensation of living on the water, i.e. movement etc." Most respondents did not interpret the question in this manner or could not articulate the exact reason i.e.. " have always done so- am a water person- it is good for the soul". Of the 16 surveys returned, an overwhelming majority indicated that typical land based waterfront property was not affordable whereas float home living offered a less expensive alternative. This reinforces the value of water and open space, as well as expansive views as amenities in the landscape.

When asked to respond to the programmatic components, the answers were varied. Only 5 households indicated a request for storage space; 7 indicated a need for parking garage/carport and general those who requested access to public transportation did not request a parking garage. Only 3 people requested garden plots/ green space, indicating perhaps an adversity to the maintenance of such. Two people requested gym facilities and 2 for pool/sauna, which had no correlation with age. Three households responded positively to workshop and 3 to laundry facilities. Tennis courts were not requested by anyone.

If residents could change the appearance of their community, they would have "better docks" and have more space in between homes. Others would have a security entrance an informal gathering space, better parking area and clean up the "junk boats". Five people expressed satisfaction with their current situation, and did not suggest changing anything.

Most surveys (81% or 13/16) returned, identified their immediate physical location i.e.. marina/houseboat subdivision, to be their community. Two households ranked the local municipality to be their community, in addition to the floating neighborhood, while three indicated a more global community (B.C. Float Home Association), where perhaps sharing of a similar lifestyle is more of an important affiliation. In addition, float home dwellers are experiencing ongoing battles with marina owners, governments, etc., over moorage. One view is that it is a natural response to unite in battle, in light of this external threat, where there is strength in unity and numbers to resolve these universal issues.

Although lifestyle and community, were major attractions surrounding this type of living, many spoke in practical terms indicating affordability and low maintenance for waterfront property. Most people in their responses indicated that a strong sense of freedom and community attachment were what caused them to stay for the long term. Float home dwellers consider themselves to be permanent residences, where on average, they expect to stay in their current location for 10-20 yrs. All indicated that they were willing to pay taxes to the local municipality for services and were willing to comply with upgrades in order to meet codes.

## **Conclusions**

It is impossible to generalize about the community of people who live in float homes. A floating community appears to consist of people who share a common outlook and possess a similar state of mind, with similar values, rather than those who share physical characteristics such as income, material possessions, age, etc. Those who are attracted to this lifestyle come from different backgrounds who may or may not have any previous experience with boating or marine living. They share a love of nature and respect for wildlife, marine life, freedom and individuality. They are an intelligent group, made up of professionals, technical or business entrepreneurs, who are responsible, contributing members of society and who recognize the economic value of their location and want to feel included in the larger regional community.

People who live on float homes appear to be misunderstood in terms of permanency of residence. Generally, they are considered to be mobile and temporary, as is the case with Census Canada, who captures data on float homes in the same category as dwellings which "can be moved easily" such as tents, RV's, travel trailers, and boats. Interestingly, mobile homes now have their own reporting category and are viewed as permanent dwellings. Most float homes dwellers regard themselves and their homes as "permanent", and are seeking a guarantee of residential mooring privileges for permanent residential status.

It appears as though float home dwellers would like to be accepted as responsible, contributing members of the community although reject over regulation, too much similarity and materiality which is common to a capitalist society and urban communities. Float home people tend to be somewhat non conformists indicating that "they wanted to try something different". They have expressed that they enjoy their freedom by statements such as "bohemian lifestyle", and "free spirit atmosphere" and have respect for individuality by "looking for unique style homes". They are however social, intelligent and responsible towards their environment. They are respectful of their unique living situation within a unique environment, and value their social atmosphere. They are united by lifestyle and community, and are not unlike many people in traditional land developments.

The survey has indicated that most people who live on float homes have no children living with them, however this does not necessarily preclude people with children from adopting a floating home lifestyle. In the past, physical limitations in upland services and remote locations away from urban facilities and services such as schools and shopping provided a greater challenge to raising young children in this environment. This does not necessarily have to be the case.

The survey suggests that most people who try the float home lifestyle end up enjoying it, irregardless of the reasons they may have had initially. It is usually affordability that motivates them, along with the amenities of being on the waterfront. Many people who choose to live in floating homes, are attracted for the same reasons that others who shop for land based real estate are; location, amenities, services, & community. Float home dwellers are perhaps less attracted by shopping facilities and urban 'cultural' entertainment, and who would likely prefer the beauty of nature and a simple, quiet lifestyle away from the noise and confusion of the city.

The most rewarding aspect of living on a float home could be summed up by being able to achieve a natural setting with wildlife, expansive views and a "getaway" place that offers privacy and serenity but has a sense of belonging to a larger community. The fact that all this is possible within close proximity to an urban centre with services, yet remain affordable, undoubtedly makes this an appealing lifestyle choice.

image taken from  
superstock images, CD, 1997



**five: design**



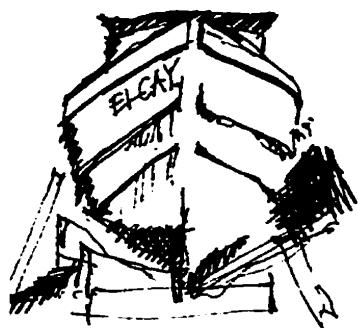
daily fish sales  
Fisherman's Wharf, Steveston

The following design makes an attempt at creating place within the community of Steveston along the west coast of British Columbia. The design hopes to reinforce the community's rich fishing, and canning history with particular sensitivity toward the Aboriginal, Scottish, Chinese and Japanese cultural influences that pioneered the community of Steveston. Located within 10 min. walking distance from the commercial centre of Steveston, the Phoenix Cannery site offers an opportunity to integrate a floating neighborhood within the existing community fabric.

A floating residential neighborhood would enhance the community's fishing & canning heritage by demonstrating a means of dwelling that was occasionally used by fishermen and cannery workers. It reinforces the area's ties to the ocean, which continues to play an important role in the economy and culture of the region. Floathomes reflect a uniqueness in character and charm that 'fit' with the unique fishing village at Steveston.

A floating residential neighborhood demonstrates sustainable planning practice by freeing the upland area for other uses. It enables a large parcel of greenspace to be maintained relatively intact for riparian vegetation and to collect and filter surface runoff from the surrounding community. It also provides a green corridor for wildlife and pedestrian trailways that encourage healthy lifestyles and ecosystems. On the water, a floating residential neighborhood acts as a log boom, which prevents floating river debris from collecting along the shoreline. This prevents the destruction of vulnerable plantlife in the intertidal zone.

Uplands would further demonstrate sustainable development practice by promoting the sharing of buildings and facilities. This is a more efficient use of resources that also encourages social contact and community attachment.



## issues

There are issues that arise at various levels of the development, that should be addressed in order achieve a design that "fits" with a waterfront strategy that is economically sustainable, and that reinforces a sense of place within the community. Since 1997, the Municipality of Richmond has been undergoing a study of the waterfront area at Steveston. Recent trends have revealed the closure of much of the canning operations along what is known as "Cannery Channel". The municipality hopes to have a policy and planning strategy in place soon in order to prevent exploitation of the waterfront, and to preserve its rich canning heritage, and protect its sensitive ecology.

### Phoenix Pond

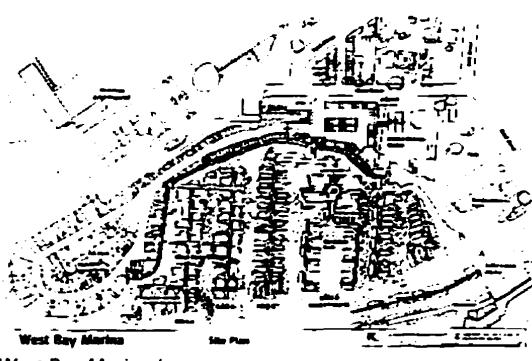
Issues that have been revealed from the proposed redevelopment include environmental concerns in regards to shoreline degradation and fish habitat conservation, particularly in the Phoenix Pond. It has been expressed by the general community, through public meetings held by Moodie Consultants that they would like to have access to the pond as public open space. In light of its ecological sensitivity, it is recommended that development occur with minimum disturbance to the surrounding habitat. A pedestrian pathway with spaces for viewing and resting would be appropriate to the size and location of the pond. A 'greenway' connection to the pond from Moncton Ave. could be possible in the form of a pedestrian/bicycle trail. This would ensure a vegetated corridor for filtering surface runoff as well as providing a route for wildlife.

### density

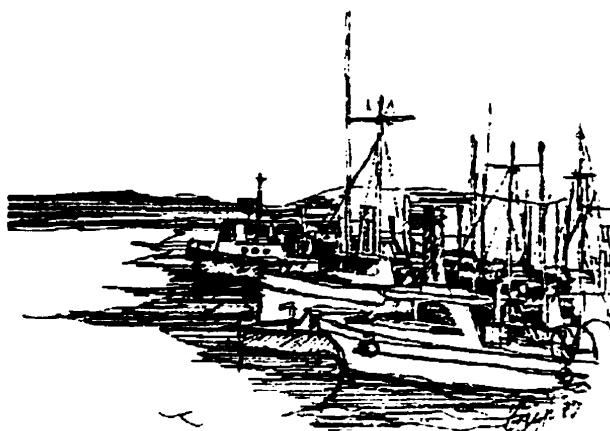
The site boasts approximately 13 acres of land with approximately 3 acres of waterlot including the pond area. If the pond and adjacent land area and corridor link to Moncton Ave. are excluded from the residential development, the remaining upland area (approx. 120m. x 190m) could support up to 69 floating homes. This represents a medium to high density coverage based on the Municipally recommended minimum allotment of 330 square meters of upland per residential unit.



traditional style floatation system  
found in Houseboat



West Bay Marina  
West Bay Marina layout  
Victoria Harbor, Vancouver Island



sketch of the Steveston waterfront  
found in Richmond: Secrets & Surprises, p. 165

Based on the precedent set by West Bay Marina near Victoria Harbor, a maximum of 55 homes with 3 meters of separation between units could be accommodated given the upland area. Development cannot extend into the cannery channel such that it would prevent passage of marine vessels and dredging equipment. It has been recommended that any water development be limited to the approximate distance as already established by other channel development. In light of this information, and with the expressed suggestions of surveyed floating home dwellers, a maximum of 35 could comfortably be accommodated in this location. This represents light density equivalent to the adjacent single family residential zone. Given the high shoreline real estate costs in the Vancouver area, this density is unlikely to be affordable by the average homeowner. Although a greater density of dwellings would be desirable, the proposed water density is comparable with the average single family land type of residential development. Light density development is preferable to the ecology of the shoreline. If fewer homes occupy the waterlot, less shading due to water coverage occurs. This benefits the aquatic ecology, by allowing greater solar penetration.

#### **long term management**

The proposed floating development could be influenced by and affect silt buildup and dredging within the manmade "Cannery Channel". Dredging has several negative consequences for fish habitat that include, increased turbidity, and destroy newly established vegetation along intertidal zones. In addition, the Cannery channel has been subject to human pollution from the fishing fleets as well as from cannery wastes. The entire Fraser River Estuary, of which Steveston is a part, is vulnerable to the effects of any pollution, logging, or environmental mismanagement that occurs inland, within the watershed. Although several of these issues fall beyond the scope of this project, every effort will be made through the design process, to restore and maintain the ecological integrity of the terrestrial and marine systems that surround this site. This is paramount if Steveston and the Estuary are to remain sustainable in the long term. It is my recommendation to demolish the ruins of the main cannery building and open up the shoreline to ecological rehabilitation.

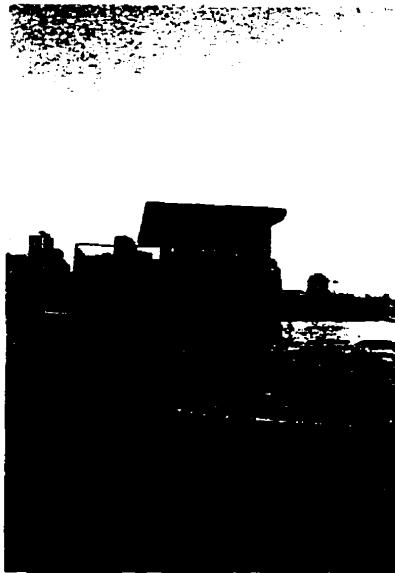
### **special interest groups**

The community of Steveston is sensitive to large scale redevelopment along the waterfront. Vigilant, non profit community groups such as the Pacific Coast Cannery Society, Steveston Historical Society, Fraser River Estuary Stewardship Program, Coastal Communities Conservation Society as well as the Steveston Harbor Authority, all share similar concerns of preservation, and restoration of this once colorful fishing and canning community and productive ecosystem. Primary issues include maintaining public access to the waterfront and limiting large scale development plans. Residents would like to maintain open ocean views, and therefore are not in favor of any tall structures lining the harbor. Historic preservation appears to be a primary focus for the community and this design strives to support that goal as a part of place making and sustainableal aesthetics which could improve the image of float home neighbourhoods and offset negative stereotyping within the community.

Negative stereotypes of float home dwellers persist throughout Richmond and many would like to see stricter guidelines for their placement and appearance. Pollution from float homes and boats are a concern for the ecology in the estuary. Richmond's extensive by-laws covering floating residential marinas include considerations for sewage, pollution, insects, rats and other atrocities that may occur in order to protect the community at large as well as the marine ecosystem. Attention will be paid to ensure a high standard of visual aesthetics which could improve the image of float home neighborhoods and offset negative stereotyping within the community.

### **needs of float home residents**

Floating Home dwellers want to portray an image of responsibility and demonstrate that they are respectful, contributing citizens. They want to be accepted as a part of the community, and are willing to pay their share of taxes for upland services. Preliminary results from the questionnaire along with personal conversations and reference material, have revealed that people who live in float homes prefer privacy, through quiet separation from the city noise, and pollution afforded by their water lot location. This appears to be consistent with suburban, residential neighborhoods as well. Every effort will be made to keep private docks secure and separate from public access. Residents have indicated that they would like to have greater space and separation between homes as well as better docks. Many are in favor of sharing essential services such as sewer, water, hydro, and telephone. In addition, many are in favor of modest upland development and services. An ongoing, but primary concern to those living on float homes is the affordability of moorage. Float home dwellers want their lifestyle choice to be affordable and not elitist.



a floating home in Sea Village,  
False Creek, Vancouver



image taken from [superstock images](#) CD, 1997

The concept for the design builds on the qualities of an ecotone. What we learn from nature is the value of diversity. This not only has merit from an ecological standpoint but from the perspective of cultural and social diversity found on the boundaries and edges of urban development. When cultural and social diversity is combined with a natural ecotone, a rare urban residential phenomena emerges, that is worthy of attention and preservation in today's society. This is the basis for a floating residential neighborhood.

The design builds on the foundations of sustainable land use and resource management. The ecology of the estuary is of primary importance, and needs to be addressed if the long term health of the estuary and fish habitat is to continue. The design focusses on the restoration of the shoreline habitat in combination with community development. This demonstrates a positive integration of human and natural processes designed for the long term preservation of place.

The shoreline or 'edge' represents a transitional zone, where a hybrid community takes on terrestrial and aquatic characteristics. Dwellings are moved off the land and become adapted to the water. The boundaries between land and water overlap and are not distinct. Boardwalks on land become floating docks on the water. Freshwater pond vegetation such as water lilies and sedges emerges in between the homes in floating containers. The design should express the cooperation of land and water systems.

This design is about integration of people and nature, land and water, neighborhood to community, and past and present. The boundaries are blurred and express an interdependence of systems in the cooperative sense. Sustainability should be evident as nature and culture co-exist in symbiotic form. The resultant design should reflect the evidence of place.

Phoenix Pond Parkway trail link with WestwaterDr.

Phoenix Pond trail entry

Phoenix Pond Parkway trail loop

expand the pc

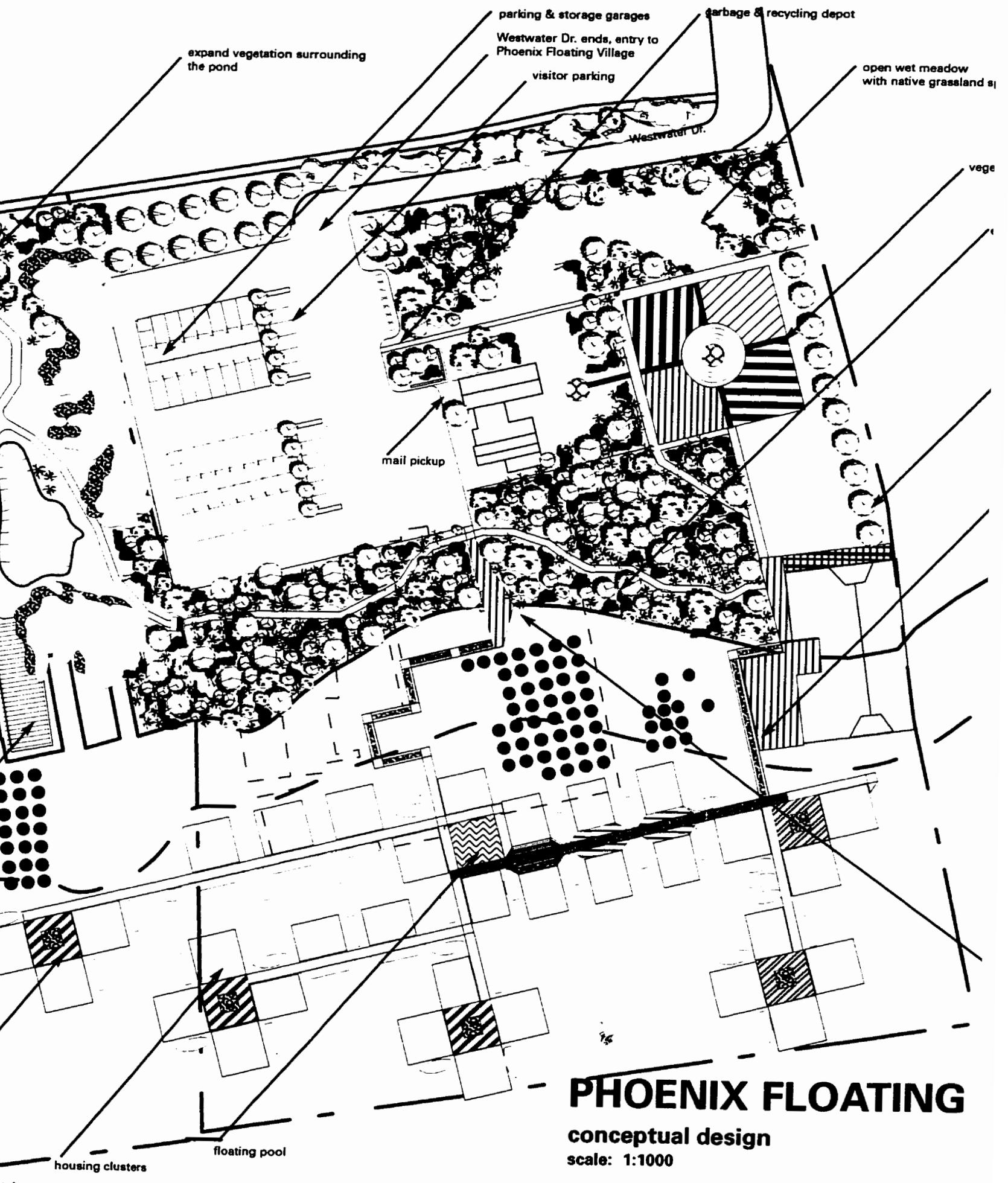
viewing bridge on pond trail loop

viewing platform

housing clusters

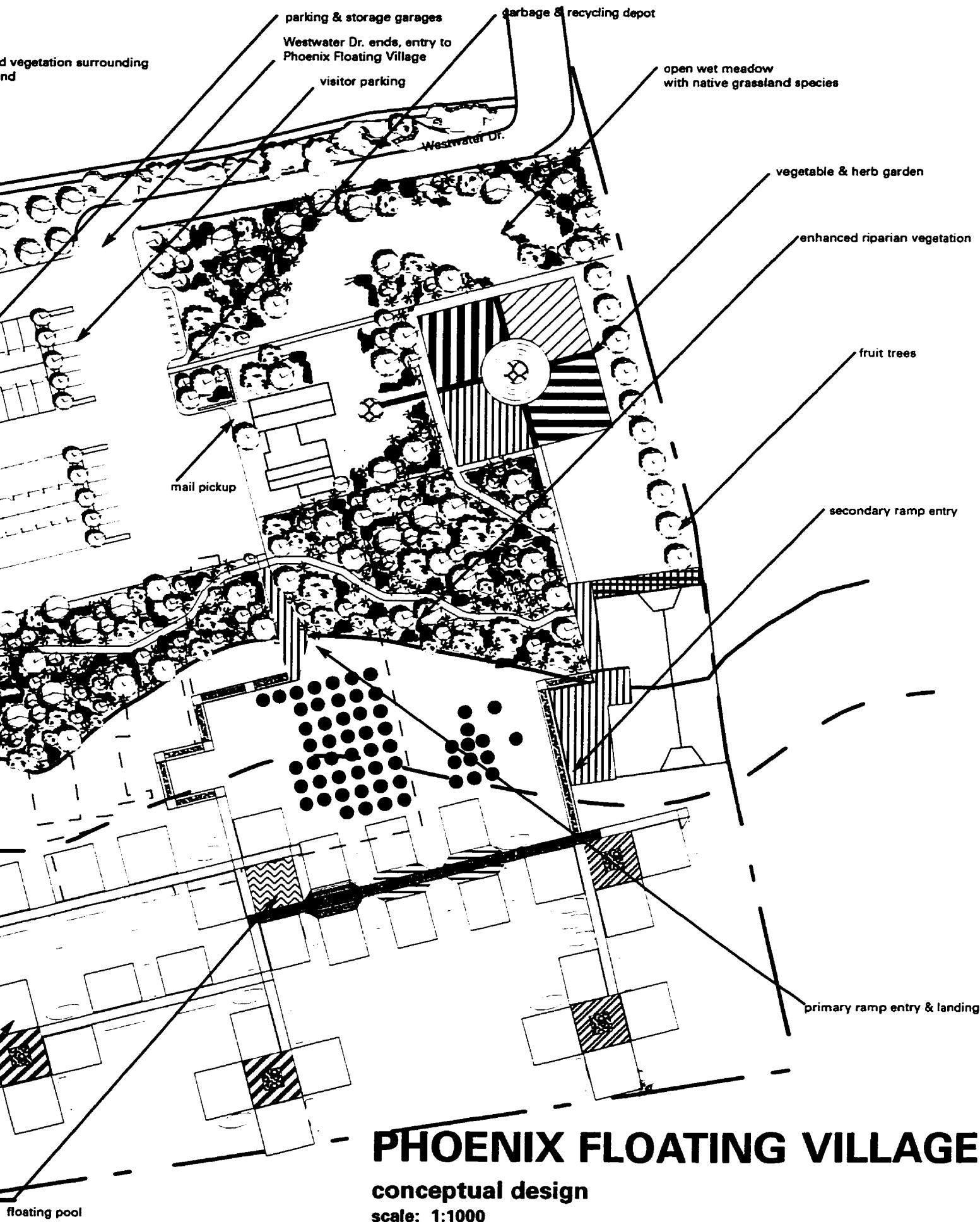
floating vegetation containers





**PHOENIX FLOATING**  
conceptual design  
scale: 1:1000





# PHOENIX FLOATING VILLAGE

conceptual design

scale: 1:1000



The design would respond to the needs of the floating neighborhood, and surrounding community in concert with the ecology of the shoreline and estuary. Throughout the development of this floating neighborhood and upland area, sensitivity and consideration of the estuary ecosystem will be of first priority. Shoreline habitat will be respected as per the Fraser River Estuary Management Program (FREMP). Efforts to create place, would include preservation and enhancement the site's rich historic component within the context of the new development. Development will be designed in accordance with guidelines as set out by the municipality of Richmond.

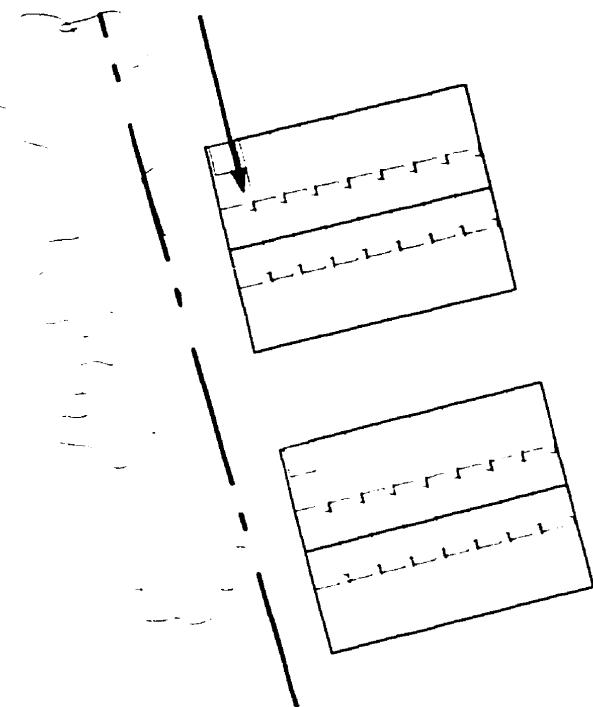
#### **uplands**

Every effort would be made to design a community 'fit' between the floating neighborhood and the existing ecology. The community would be spatially integrated with the existing community through a 'green' corridor, linking the floating neighborhood with Richmond's trailway system from two directions. Apart from the development's main entry off Westwater Dr., the trailway would be accessible through the Phoenix Pond, along an integrated parkway system.

A parking garage and storage unit would be provided for each dwelling in the redeveloped warehouse space. Ample visitor parking (> than the minimum 10%) would also be provided, along with drop off zone in front of the administration building (redeveloped boss' house). Garbage and recycling dropoff and mailbox delivery would also be available on site. Vehicle circulation is restricted to the parking area in order to minimize hard paving in the riparian zone.

Community gardening plots would be made available for the residents who wish to participate. These would be planted, maintained and harvested by the residents. All other upland and dock maintenance would become the responsibility of the developer and operator. This minimizes the responsibility of maintenance by the residents, yet ensures a high standard of visual aesthetics for the community as a whole.

typical vehicular storage showing overhead door and personal storage



the old cannery warehouses are redeveloped into parking and storage garages

## re program old buildings

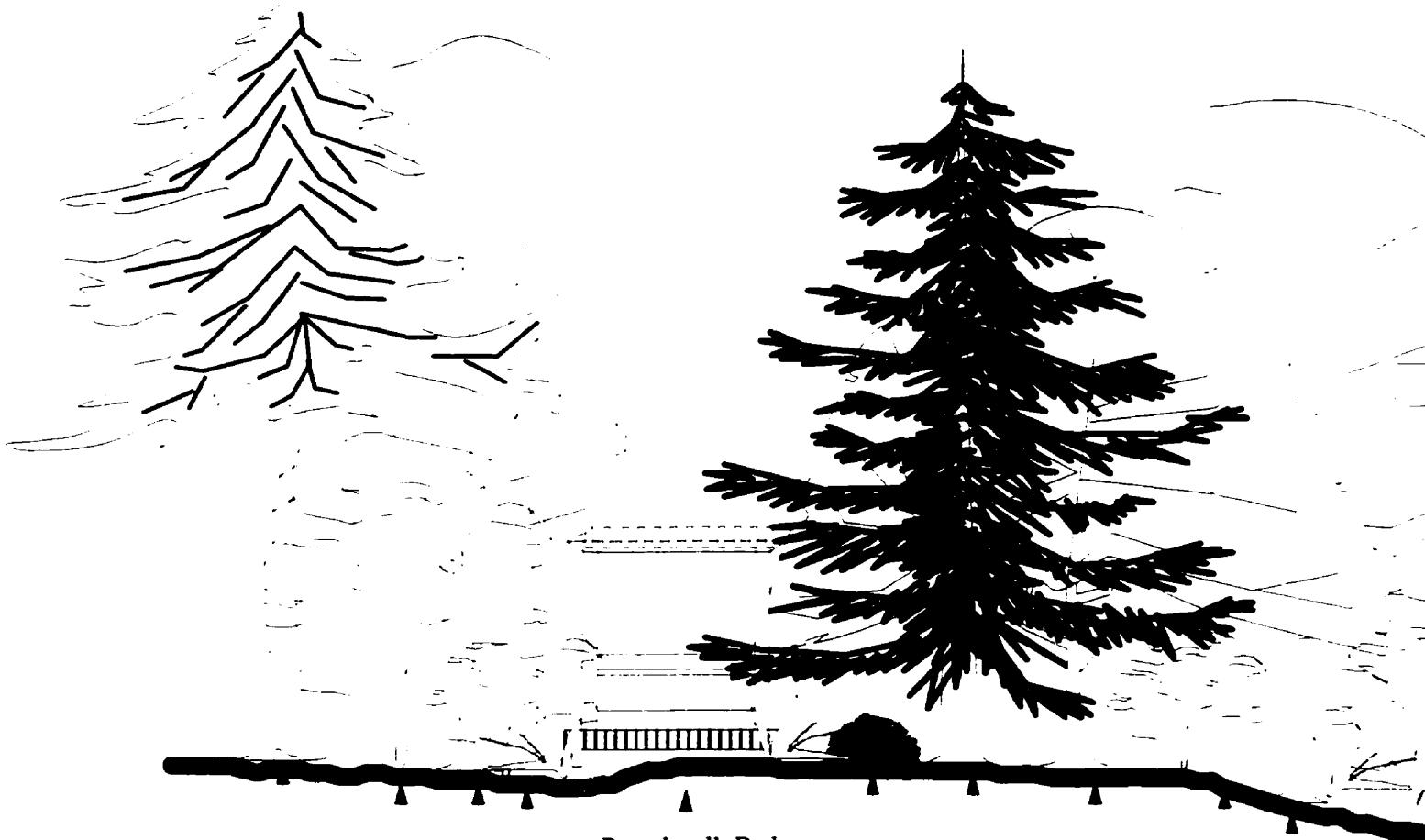
In general, residents of floating marinas are willing to share the uplands as communal spaces. Existing cannery outbuildings offer the opportunity for shared laundry and workshop facilities, maintenance sheds, storage and parking. Storage space for vehicles and boxes could be provided through the redesign of the warehouse spaces. An administrative centre is necessary for the ongoing operation of the marina and may also provide the facilities for conferences and meetings where residents jointly participate in the decisions affecting their neighborhood. This facility could be developed from the existing cannery "boss" house. This arrangement demonstrates sustainable land use practice and promotes community socialization and attachment. Since each building is in various states of repair, actual reuse would depend on assessed building conditions and availability of financing for restoration

## vegetation

The site requires restoration of riparian vegetation which will provide significant long term benefits to both the terrestrial and aquatic communities. This restoration would also have positive impact on fish habitat (shading and water temperature). It would serve as an environmental filter for surface runoff and stabilize the shoreline. It would also provide visual screening and privacy for float home dwellers. The ruins of the Phoenix Cannery complex would be removed and riparian vegetation restored within a 30m buffer from the natural shoreline. Pilings could remain to reference the cannery's footprint and provide new habitat for organisms and fish. The location of the shoreline would be restored to its original course, as wharves and retaining walls would be removed from the old cannery. Throughout the site, new plantings would consist of native riparian species found in this area. Non native species, such as cultivated annuals would be restricted to containers along floating docks.



Western Hemlock (*Tsuga heterophylla*)  
Plants of Coastal British Columbia, p.30



Boardwalk Pathway  
with Entryway

Douglas Fir  
*Pseudotsuga menziesii*

Western Red Cedar  
*Thuja plicata*

Pacific Crabapple  
*Malus fusca*

Red Huckleberry  
*Vaccinium parvifolium*

Shrub Rose  
*Rosa rugosa*

Western Hemlock  
*Tsuga heterophylla*

Elderberry  
*Sambucus racemosa*

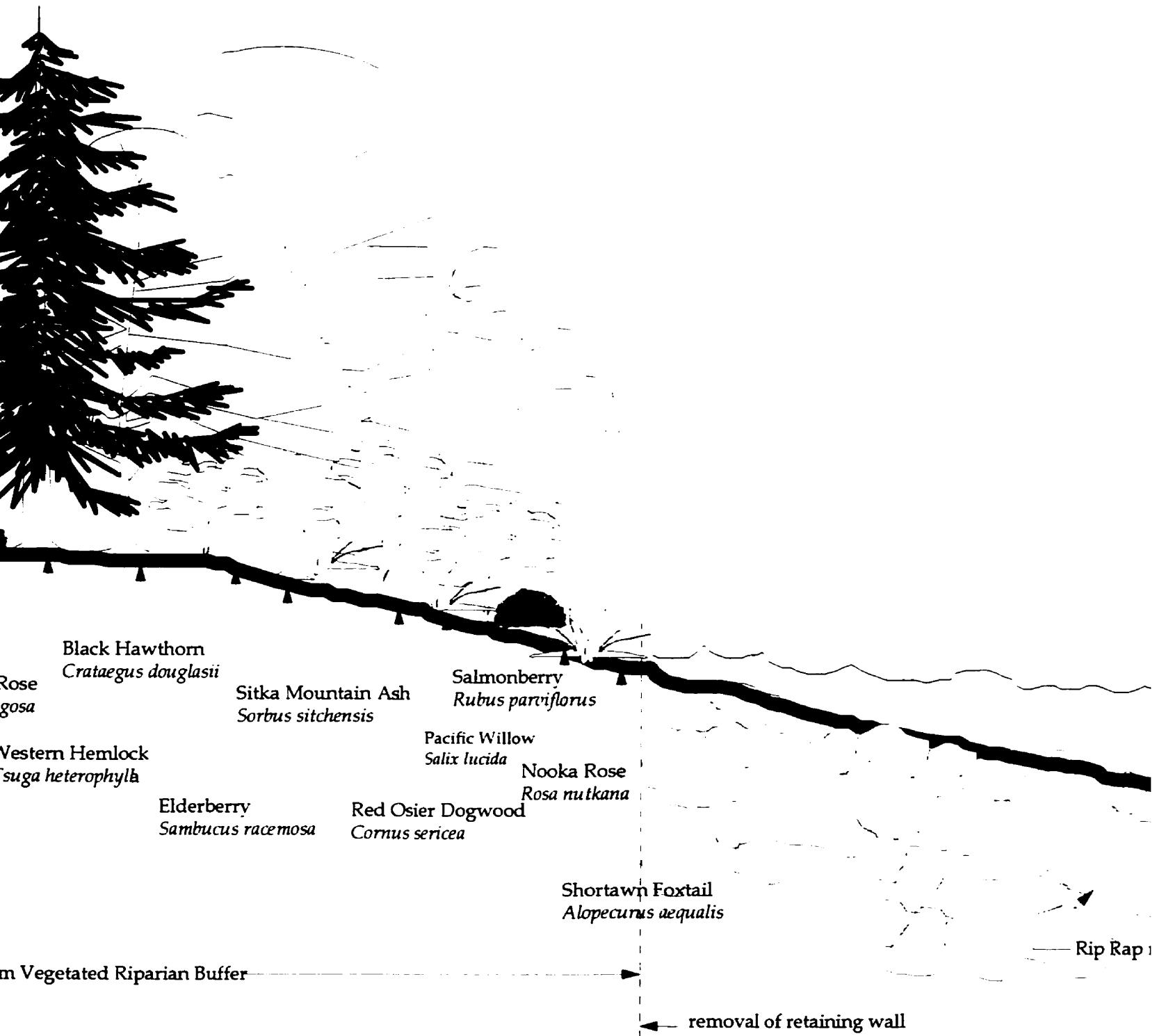
Sitka Mountain Ash  
*Sorbus sitchensis*

Black Hawthorn  
*Crataegus douglasii*

Red Cornelia

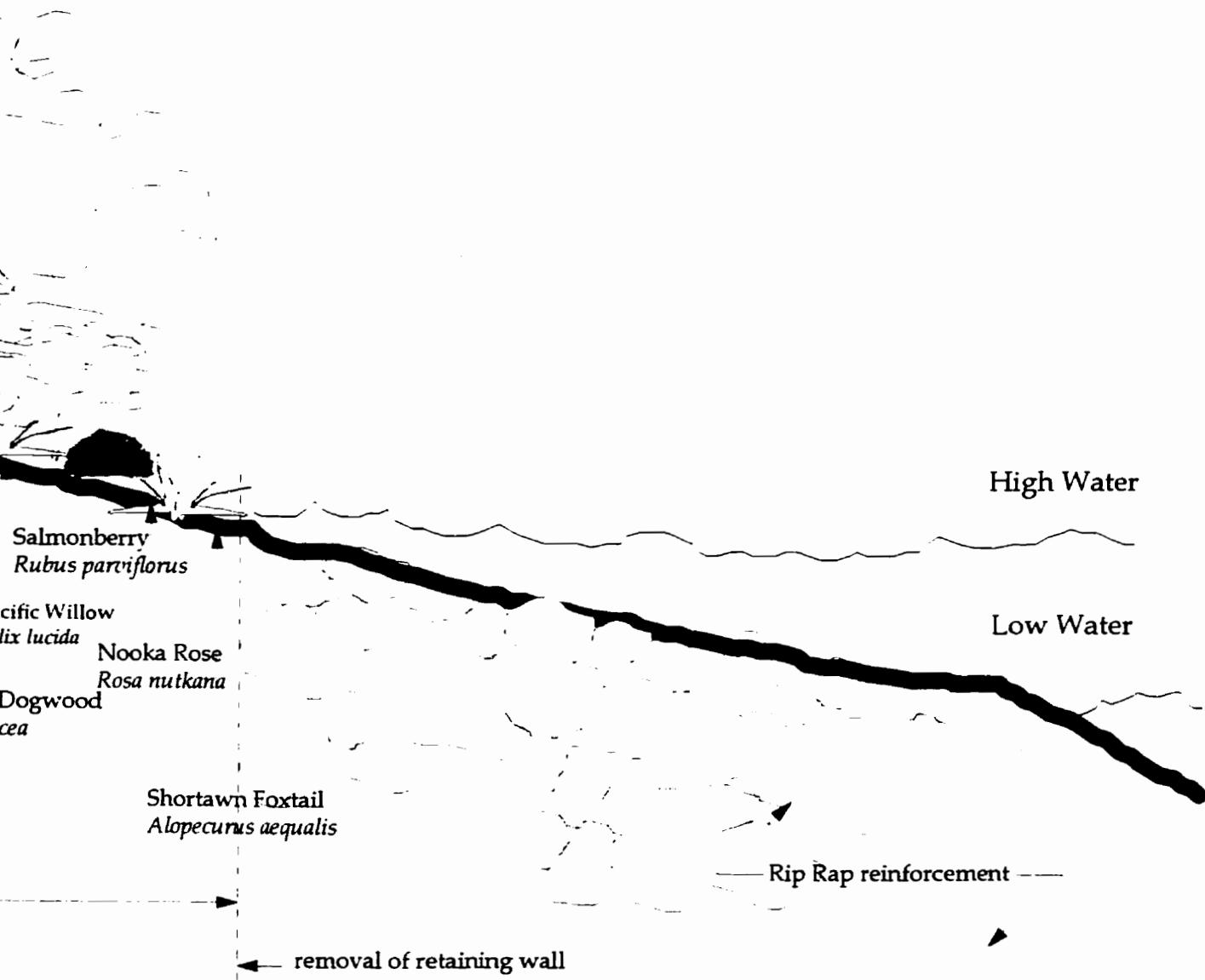
← ----- Minimum 30 m Vegetated Riparian Buffer -----



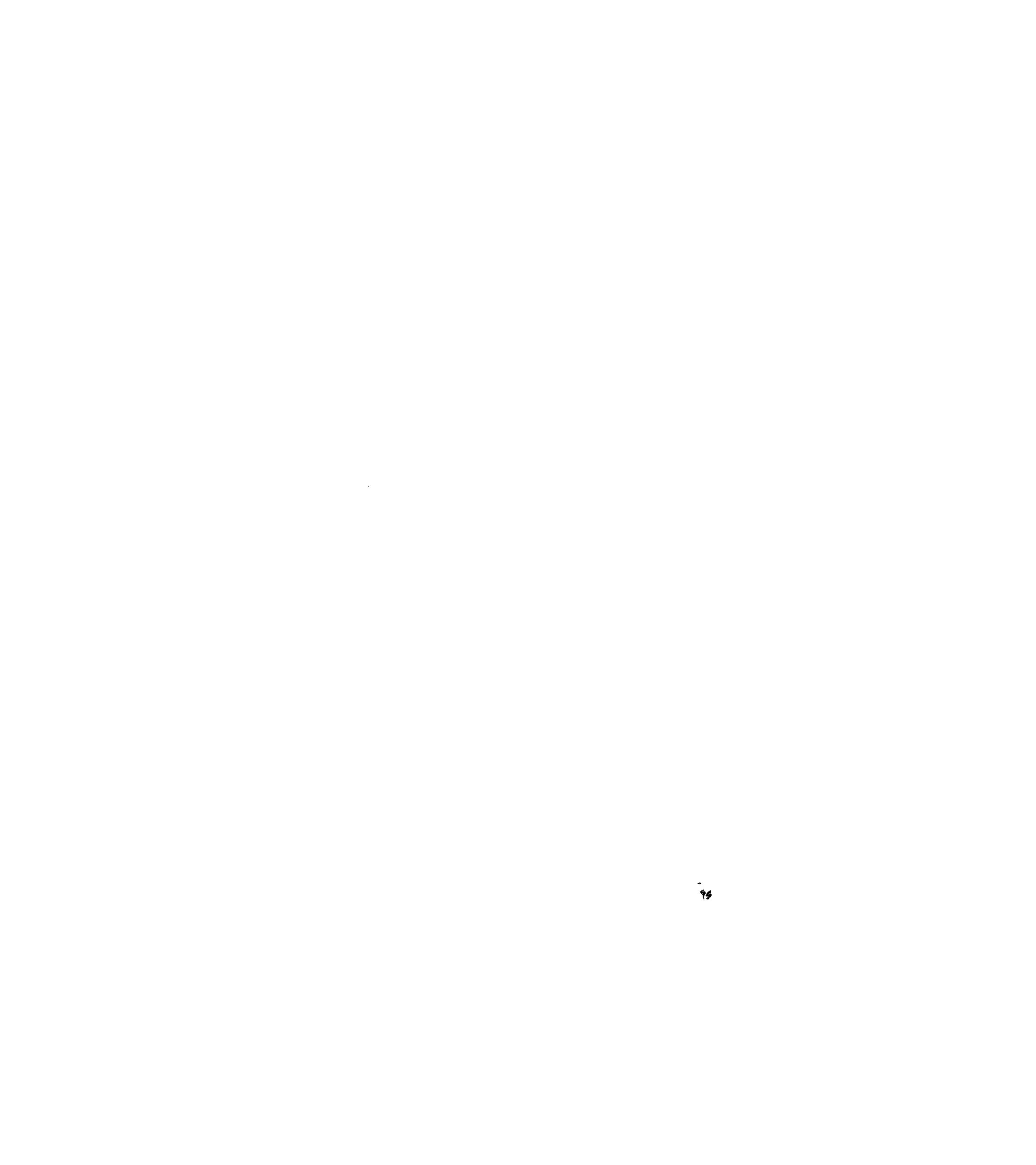


**TYPICAL SECTION THROU**  
showing riparian vegetation

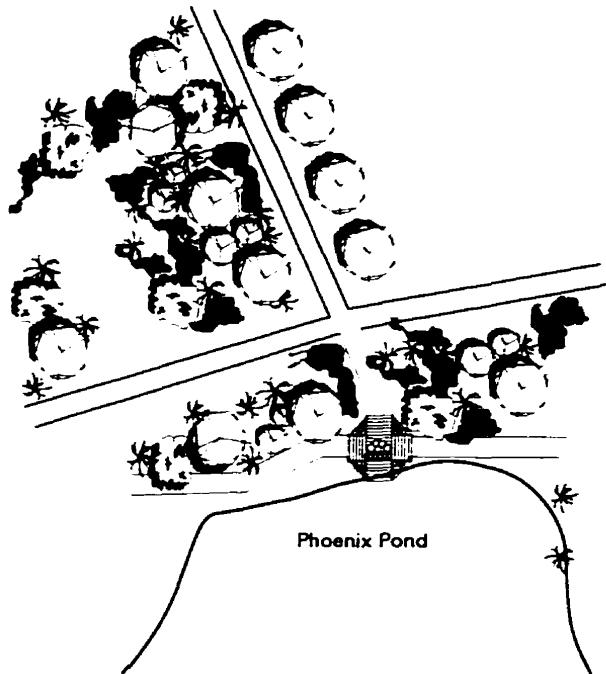




**TYPICAL SECTION THROUGH SHORELINE**  
showing riparian vegetation

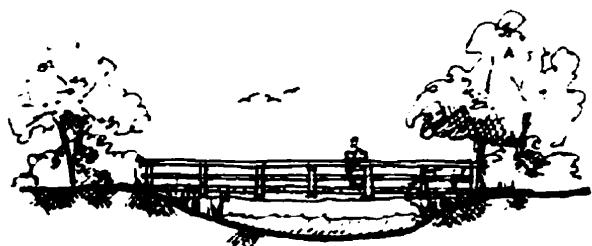


## **residential development**



pond trail loop entry and connection with Richmond trail system

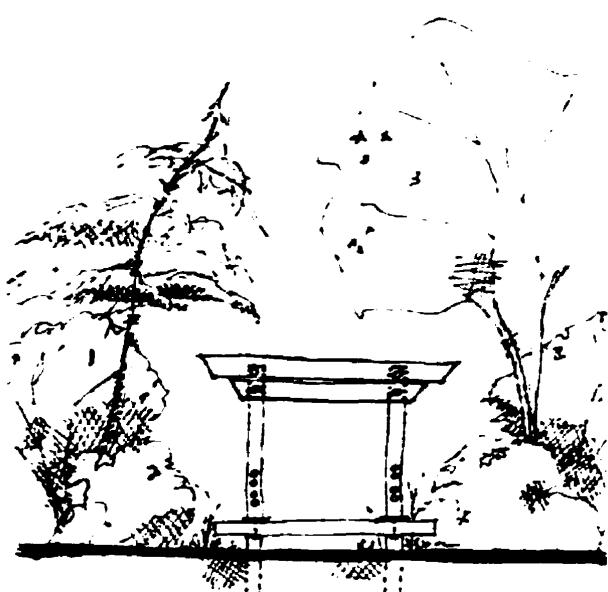
It is the intention of the design to accommodate a floating residential marina with 30 homes averaging 1700- 2000 sq. ft. with maximum 2 stories. The configuration would provide for private as well as community dock space and boat moorage. A floating communal swimming pool would be an added amenity for the residents. The homes are configured along two main access routes with clusters of four homes at the outermost extents. A main and secondary entrance are provided for safety and convenience. Docks would be configured to accommodate two people passing each other, and provide added dock space for landings and vegetation. All docks and entry ramps would be made universally accessible, with efforts to maintain slope requirements through a landing limiting system.



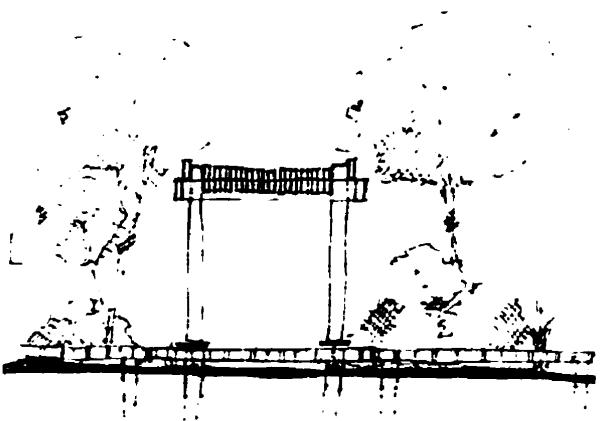
bridge over the entry to the pond provides an excellent viewing location to the Cannery Channel

## **Phoenix Pond**

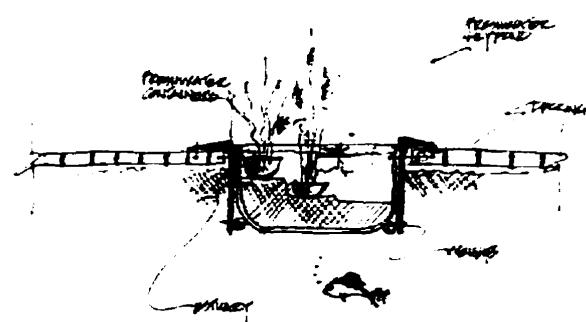
The Phoenix Pond habitat features appear to be in good health. Design development in this area is focussed primarily on long term resource management. A portion of the upland area, west of the warehouses, and down to the shoreline that surrounds the Phoenix Pond would be dedicated to public use. The Phoenix Pond will be considered as public park with viewing and pedestrian access only. A boardwalk and viewing bridge would be installed with interpretive signing and rest stops along a trail loop. The boardwalk would prevent significant disturbance to marsh vegetation and minimize soil compaction. Where possible, marine habitat will be protected and restored primarily to support the rearing of juvenile salmonids, as well as other Anadromous fish who rely on the tidal pond. Usage of the area for public education about the estuary and its importance to the salmon lifecycle supports the goal of long term sustainability and resource management.



entry gate (front view)



entry gate (side view)



floating freshwater containers

### **private & public territory**

Special consideration is given to the separation of public and private spaces within the design. The Phoenix Pond and surrounding park are open to public viewing, accessible by foot via the Westwater to Moncton trailway. The pond is also accessible to the residents of the Phoenix Marina via an internal pedestrian trail. Efforts were taken to create the linkage between the two trails that would discourage casual entry. The transition from public to private territory would be marked by a covered gateway, inspired by the Japanese Torri and boat mast forms. This would occur between the Phoenix Pond park and the upland of the floating neighborhood in addition to the main entry of the marina. For the most part, the floating dwellings are blocked from public view by dense riparian vegetation. This respects the needs for privacy by the floating residents. They may be partly viewed by the public from a distance from the Phoenix Pond's viewing bridge or by boat along the channel.

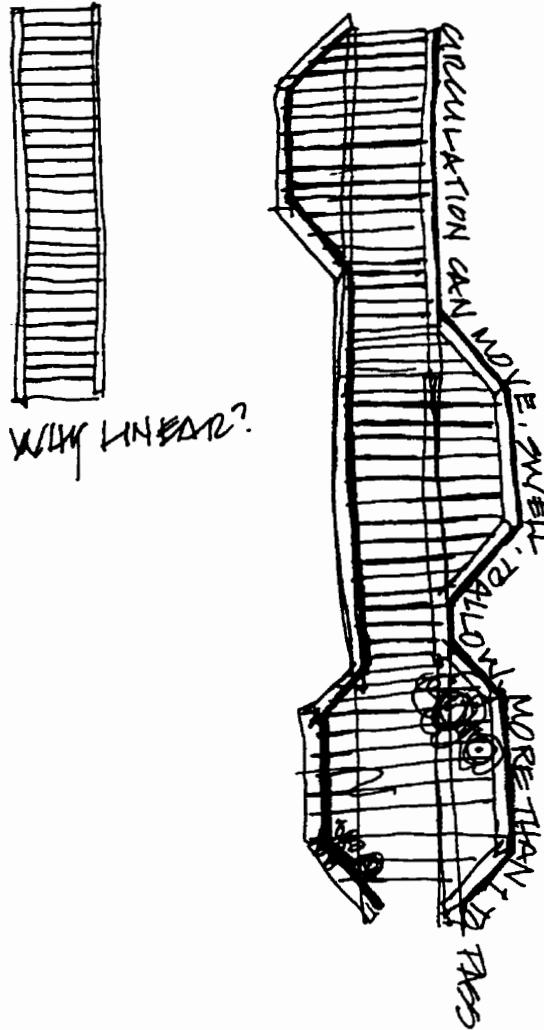
### **security**

Security is also an issue for residents of the marina. A main entry gate with security buzzer and key entry would make the entry visible through the riparian vegetation and provide security for private docks. An enlarged entry platform would accommodate any cargo within the secure area for its transport to residential dwellings. A secondary entrance is provided via the Netloft building which would also be secured.

### **vegetation**

Every effort is made to encourage intertidal and aquatic vegetation within the floating community. Floating freshwater lily ponds are provided throughout the residential clusters, with plenty of dock space to support container plantings of all sizes, ranging from annuals to shrubs. Native vegetation is encouraged in all plantings throughout the site.

### surface treatment



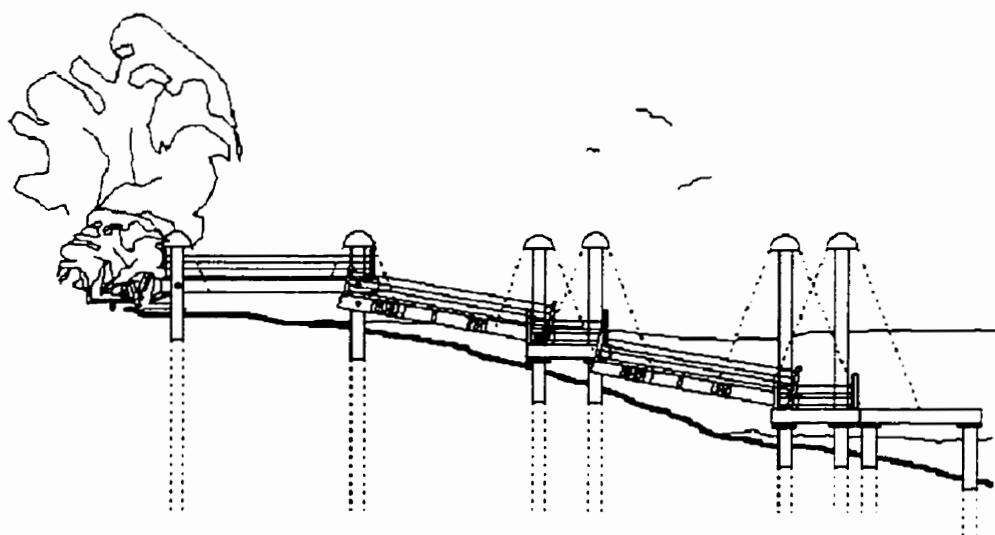
All walkways within the development are composed of boardwalks on land, and floating boardwalks (docks) on the water. This provides a seamless transition for the pedestrian circulation throughout the neighborhood. Boardwalks provide a system of walkways that historically were best suited to the high precipitation and poor drainage along the shore. This system also prevents soil compaction and vegetation destruction due to pedestrian traffic in the riparian zone. Boardwalks are particularly appropriate in ecologically sensitive areas, such as near the Phoenix Pond.

### safety

Low level lighting would be provided along all entry ramps and landings to aid in dock safety. Wide docks with 'passing' dock space help to improve dock safety.

### barrier free access

All docks are equipped with access ramps that are conform to universal access standards. Provisions have been made to maintain slope standards during extreme low tide by providing landing 'limits'. All docks naturally become universally accessible during high tide.



cross section through entry ramp showing lighting & barrier free access

The creation of place presents a difficult design challenge in any setting. The historic richness of the Phoenix Cannery site and the uniqueness of a floating residential neighborhood combine to provide an interesting layer to the urban fabric of Vancouver. The benefits of float home living have been rediscovered on the west coast of British Columbia and floating marinas will continue to exist as they have in the past, in spite of economic pressures and negative stereotypes. With increasing shoreline development pressures, floating marinas may be displaced further and further from urban centres. Although economic issues for float home dwellers always present a threat, the character and charm of such a unique residential setting is worthy of preservation as it represents a unique aspect of regional identity and place.

Several levels of consideration, represented in the community by a multitude of special interest groups, reinforces the Fraser River estuary's importance to the social and cultural identity of the community. Ecological sensitivity for shoreline development adds another layer of complexity that must be considered if one is to insure the long term sustainability of the Estuary. The synthesis of the research and design presented throughout this document demonstrates a harmonious integration between nature and urban development, historic past and present, individuality and community through the connection of the land and sea that reflects the richness and diversity of the 'edge' and an understanding of place.

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# **appendix 1**

**survey questionnaire**

The following Questionnaire is intended to provide general and specific information regarding the demographics, and personal thoughts and feelings about houseboat living on the B.C. coast. Only those people currently living on houseboats within the coastal waters surrounding the province of British Columbia should participate in this survey. One survey will be distributed per household, and should be completed by the owners or leaseholders of the houseboat. All responses will be used as research material posed by a thesis, and may be published through the University of Manitoba. Your name or address is not required and will not be published, however, if you would like any further correspondence regarding this survey, please include your name and address on the return envelope provided. You are not under any obligation to complete this questionnaire, however your co-operation is appreciated. Thank you for participating in this survey.

Respectfully yours,  
Dolores Altin

\*A self addressed, stamped envelope has been provided for your convenience.

**1) How long have you lived on a houseboat?**

- \* less than 6 months
- \*6 months - 1 yr.
- \*1yr - 3yrs
- \*3yrs - 10 yrs...
- \*over 10 years

**2) How many people live on board?**

- \*adults \_\_\_\_\_
- \*children \_\_\_\_\_

**3) What are the ages of those on board?**

- \*person1 \_\_\_\_\_
- \*person2 \_\_\_\_\_
- \*person3 \_\_\_\_\_
- \*person4 \_\_\_\_\_

**4) What are the occupations of the adults on board? (Indicate also those retired or unemployed)**

- \*person1 \_\_\_\_\_
- \*person2 \_\_\_\_\_
- \*person3 \_\_\_\_\_
- \*person4 \_\_\_\_\_
- \*list additional persons here \_\_\_\_\_

**5) Where are you moored?** \_\_\_\_\_

**6) Are you moored, rent moor/slip, own moor/slip or other(please explain)?**  
\_\_\_\_\_

**7) Which of the following most accurately describes your community, in which you feel you are a contributing member?**

- \*houseboat subdivision/marina
- \*municipality
- \*B.C. Float Home Association
- \*houseboaters everywhere, regardless of geographic boundary

**8) What is the most important/or essential requirement that you are looking for in a residential community?** \_\_\_\_\_

**9) What is the least important quality/feature?** \_\_\_\_\_

**10) What first attracted you to houseboat living?** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**11) Why did you choose to live on the water as opposed to living on the land at the water's edge?** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**12) If you could change one thing about the appearance of your community what would it be?** \_\_\_\_\_

13) What upland services would you like to have or be willing to share with other houseboaters?

- |   |  |
|---|--|
| <input type="checkbox"/> *laundry                 | <input type="checkbox"/> *garden plots           |
| <input type="checkbox"/> *workshop                | <input type="checkbox"/> *park or green space    |
| <input type="checkbox"/> *storage                 | <input type="checkbox"/> *public transportation  |
| <input type="checkbox"/> *convenience store       | <input type="checkbox"/> * tennis courts         |
| <input type="checkbox"/> *pool/sauna              | <input type="checkbox"/> *gym                    |
| <input type="checkbox"/> *conference/meeting hall | <input type="checkbox"/> *parking garage/carport |

14) What do you like best about houseboat living? \_\_\_\_\_

\_\_\_\_\_

15) What is the biggest drawback about houseboat living? \_\_\_\_\_

\_\_\_\_\_

16) What would you say is your affordability range for a floathome? (indicate \$\$ range) \_\_\_\_\_

17) Do you consider your current location to be your permanent residence?

\*yes  \*no

18) How long do you expect you'll stay in your current residence? \_\_\_\_\_

19) Would you be willing to comply with upgrades required by local fire and sewage disposal in order to meeting building codes? \_\_\_\_\_

20) Would you be willing to pay local municipal property taxes in exchange for services such as sewer, water, telephone? \_\_\_\_\_

21) Are you seeking a guarantee of residential mooring privaledges for permanent residential status? \_\_\_\_\_

22) Do you wish to become part of a recognized (with politically defined boundaries) community or municipality? \_\_\_\_\_ \*yes \_\_\_\_\_ \*no

23) Do you feel a stronger emotional connection to:

- \*the land?  
 \*the sea?  
 \*both equally?

24) Would you consider yourself to be a nature lover?

- \*yes  
 \*no

25) What has been the most rewarding aspect of living on a houseboat?

\_\_\_\_\_

26) Houseboaters have been viewed as having a great potential for mobility in society. In your opinion, why do most choose to reside in the same location for many years?

\_\_\_\_\_

Please use this space for additional comments.

## **appendix 2**

**FREMP shoreline habitat classification**

## SHORELINE HABITAT CLASSIFICATION

Shorelines which include intertidal and nearshore riparian areas within FREMP have been classified and colour-coded on the basis of the relative values of their habitat features. Examples of habitat features include : mudflat, marsh, bottomland forest, etc..

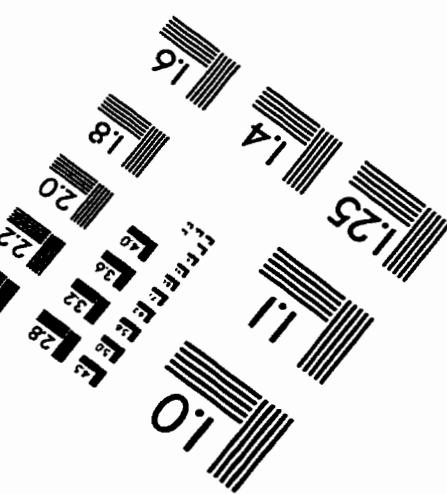
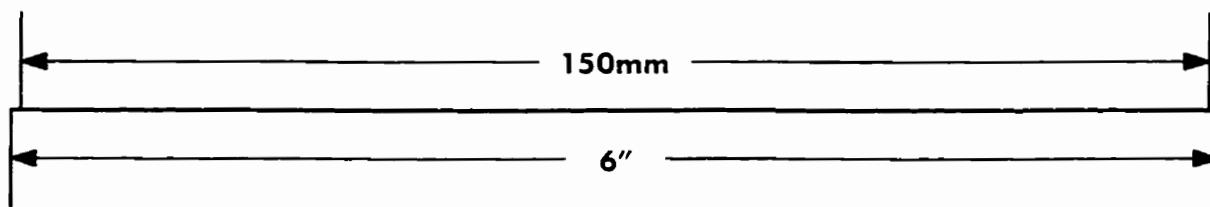
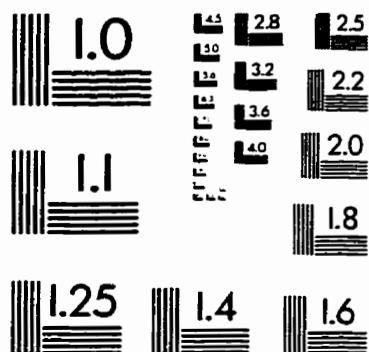
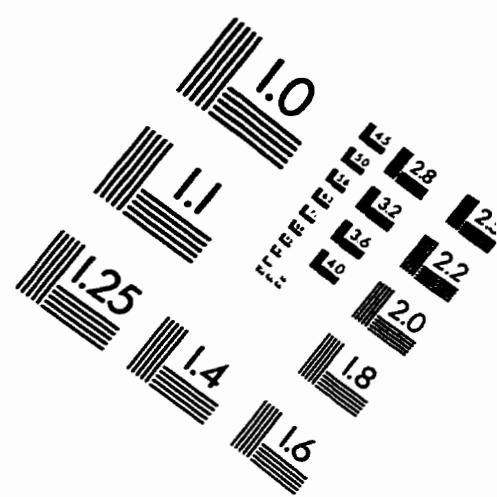
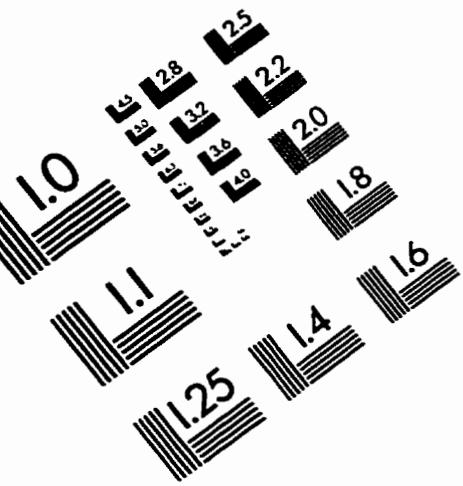
The codings are intended to guide prospective shoreline developers in selecting appropriate sites and identifying suitable design concepts prior to making application for approval of their projects. Such approvals are obtained through application to the appropriate Lead Agency and subsequent review through the FREMP Coordinated Project Review Process.

Shorelines are inherently dynamic areas in any river estuary. Consequently habitat features are likely to change over time. Periodic review and updating of colour coding is therefore required. Persons involved on an ongoing basis with development on the Fraser River estuary shoreline are therefore urged to maintain a familiarity with the current codings and habitat features in their areas of interest. Current shoreline classification mapping is available for reference at the FREMP office.

The current definitions for the codings are as follows :

<b>● RED CODED SHORELINE</b>	<p>Shoreline areas having highly productive habitat features and/or areas where habitat compensation has been previously constructed to offset habitat impacts.</p> <p>Development may occur in red coded areas provided that mitigation is applied through site location and/or design to <u>avoid</u> impacts on habitat features of the area. Habitat compensation is <u>not</u> an option as a rule. The only circumstances whereby exception to the above guideline can be considered are where the project is specifically undertaken in the interest of public health and safety. Even in these cases alternative siting and design mitigation will be pursued to the maximum extent possible.</p>
<b>○ YELLOW CODED SHORELINE</b>	<p>Shoreline areas having moderately productive habitat features.</p> <p>Development may occur in yellow coded areas provided that mitigation and/or compensation measures are incorporated into the project design to ensure that there is <u>NO</u> NET LOSS of productive capacity as a result of the project. Mitigation options should be pursued to the maximum extent possible prior to consideration of compensation for unavoidable impacts on habitat features.</p>
<b>○ GREEN CODED SHORELINE</b>	<p>Shoreline areas with low productivity or lacking habitat features.</p> <p>Development may occur in green coded areas provided that reasonable efforts are made to mitigate environmental impacts through appropriate location and design. Habitat compensation will <u>not</u> be a condition of approval.</p>

# IMAGE EVALUATION TEST TARGET (QA-3)



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